

# *Capacity Building for Disaster Risk Reduction (DRR) at Community Level – A Myanmar's Case -*

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**ABSTRACT:** Myanmar has high risk of Cyclone, Earthquake, Tsunami and Storm Surge. The recent tornado revealed that Myanmar is also prone to tornadoes. Cyclone Nargis which hit the country in May 2008 rightly pointed out the need of integrated disaster risk reduction measures to be incorporated at the community level. When the Cyclone struck Myanmar, the community experienced a huge loss of lives as well as properties including public buildings. Schools could be an emergency shelter and, therefore, it must be disaster resilient. Communities are the first responders and the key players in disasters. The capacity building programme for DRR developed and carried out at community level by SEEDS Asia in Myanmar adopted a unique and innovative concept and methodology. This project could be introduced to other parts of the world as a good practice in community-based DRR and could be a showcase of climate change adaptation through strengthening DRR capacity of the communities, thus reducing their disaster risks.

**KEYWORDS:** School Safety, Mobile Knowledge Resource Center, Town Watching, Capacity Building, Disaster Education & Training, Climate Change Adaptation

## 1 INTRODUCTION

Asia is known as the most disaster-prone region of the world where about 40% of all the reported disasters are occurring every year, claiming 80% of the people killed and 90% of the people affected by disasters. The economic damage due to disasters in Asia is rapidly increasing, from 34% in 2000-2007 to 62% in 2008<sup>1</sup>. The causes of these disaster impacts are diverse: poverty, rapid population growth, unplanned urbanization, migration of vulnerable groups to disaster-prone areas, environmental degradation and so on.

It is also important to look at the social economic aspects of the society to identify the hidden vulnerability and its root causes. It was recently found out that disaster risk is highly concentrated in poorer countries and communities with weaker governance arrangements for disaster risk reduction. Climate change, which is already changing the geographic distribution, frequency and intensity of weather-related hazards and threatens to undermine the resilience of poorer countries and their citizens, is another aspect that we must address appropriately and urgently<sup>2</sup>.

A non-profit voluntary organization, SEEDS, was founded in 1994 by two engineers in India, and has been working to improve the environment, and make vulnerable communities resilient to disaster. 12 years later in 2006, SEEDS Asia was established in Kobe, Japan to spread the lessons learned from the Hanshin-Awaji (Kobe) Earthquake of 1995 throughout Asia through train-

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<sup>1</sup> Annual Disaster Statistical Review 2008 – The numbers and trends, Centre for Research on the Epidemiology of Disasters (CRED), Université catholique de Louvain

<sup>2</sup> 2009 Global Assessment Report on Disaster Risk Reduction : Risk and poverty in a changing climate – Invest today for a safer tomorrow, UNISDR Secretariat

ing, capacity building, and safer construction, focusing on educational programs for both pre and post disaster activities.

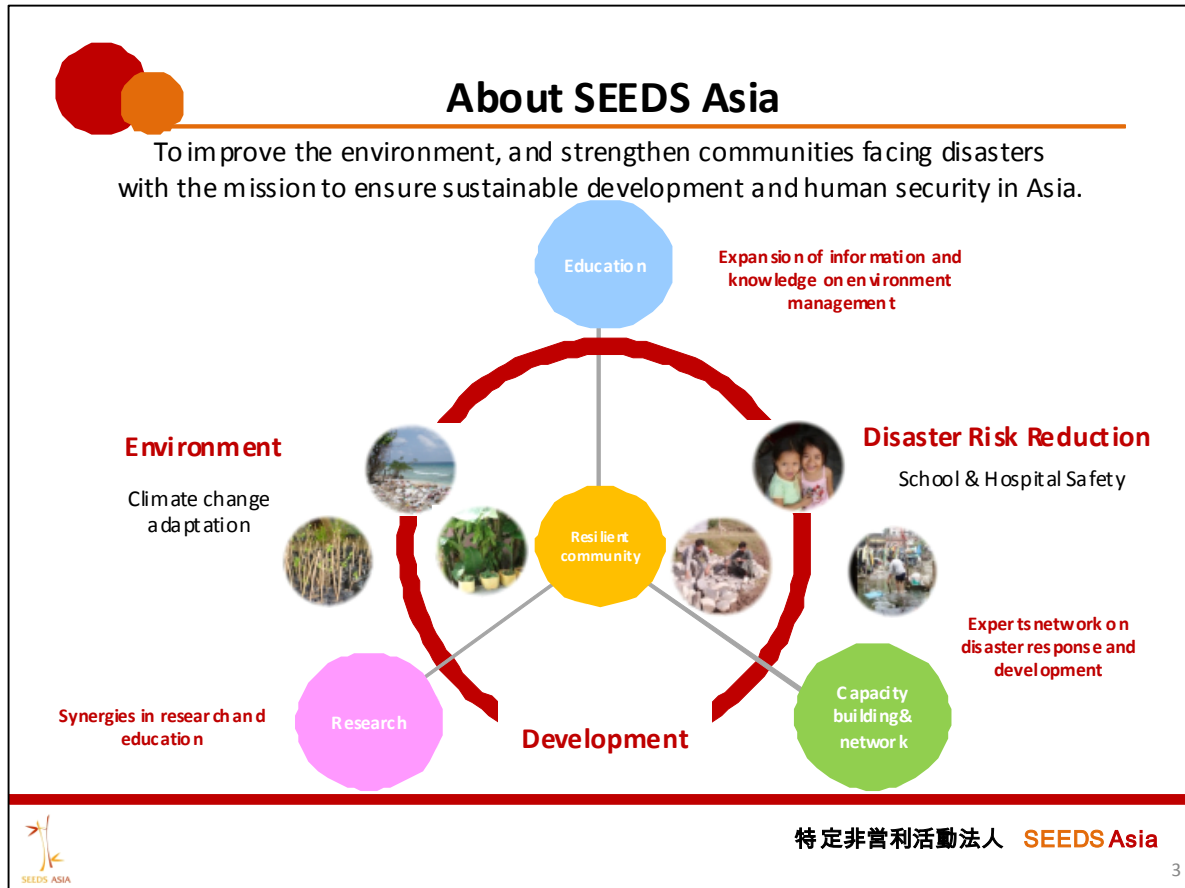


Figure 1. SEEDS Asia’s modality of work

### 1.1 Cyclone Nargis in Myanmar (2-3 May 2008)

Cyclone Nargis struck Myanmar on 2 and 3 May 2008 with winds up to 200 kph, sweeping through the Ayeyarwady delta region and the country’s main city and former capital, Yangon. Ayeyarwady and Yangon Divisions are worst affected. Damage was most severe in the delta region, where the effects of extreme winds were compounded by a sizable storm surge that destroyed an estimated 95% of housing. The cyclone affected more than 7 million people who suffered loss of family, home and livelihoods<sup>3</sup>.

Myanmar has high risk of Cyclone, Earthquake, Tsunami and Storm Surge. The recent tornado in the village in Pyapon township in Aveyarwady Division revealed that Myanmar is also prone to tornadoes<sup>4</sup>, especially in the delta areas, mainly in July. Cyclone Nargis has also rightly pointed out the need of integrated disaster risk reduction measures to be incorporated at the community level in the affected areas as well as other parts of the country.

<sup>3</sup> 2009 Post-Nargis Periodic Review II, July 2009, Tripartite Core Group (TCG) in Myanmar

<sup>4</sup> Myanmar Times, 2-8 August 2010 <http://www.mmtimes.com/2010/news/534/news014.html>

When the Cyclone Nargis struck Myanmar, the community experienced a huge loss of lives as well as properties including public buildings such as schools and hospitals. The loss could have been less if the communities had been more aware of the risk of such disasters and how to respond to them, and if they had taken precautions to strengthen buildings.

## 2. PROJECT DEVELOPMENT AND IMPLEMENTATION

### 2.1. *Outline of the project*

To respond to this situation and to strengthen resilience of communities at risk to natural disasters in Myanmar, a project for community based disaster preparedness and disaster risk reduction activities, comprising (1) school safety (SS), (2) “one village one shelter,” and (3) Mobile Knowledge Resource Centre (MKRC) and Water Knowledge Resource Centre (WKRC), was conducted to raise awareness of disaster risk reduction in the cyclone affected communities.

The outline of the project is as follows:

Project title: Assistance to Cyclone Affectees in Myanmar

Project period: May 2009 – June 2010

Supported by: Church World Service (CWS) Asia Pacific and ACT Alliance

Implementation Partners: Metta Development Foundation (METTA), Mingalar Myanmar (MM), Myanmar Marketing Committee (MMC), and Myanmar Engineering Society (MES)

Goal of the project:

To strengthen resilience of local communities at risk to natural disasters through awareness raising and training

Specific objectives:

- To promote “Build back better” approach through activities linking rehabilitation with long term sustainable development
- To build capacity of communities and local humanitarian workers through training and awareness raising activities for disaster risk reduction

Project sites: Villages in Yangon, Kungyangon, Kyauktan, Dedaye, Labutta township

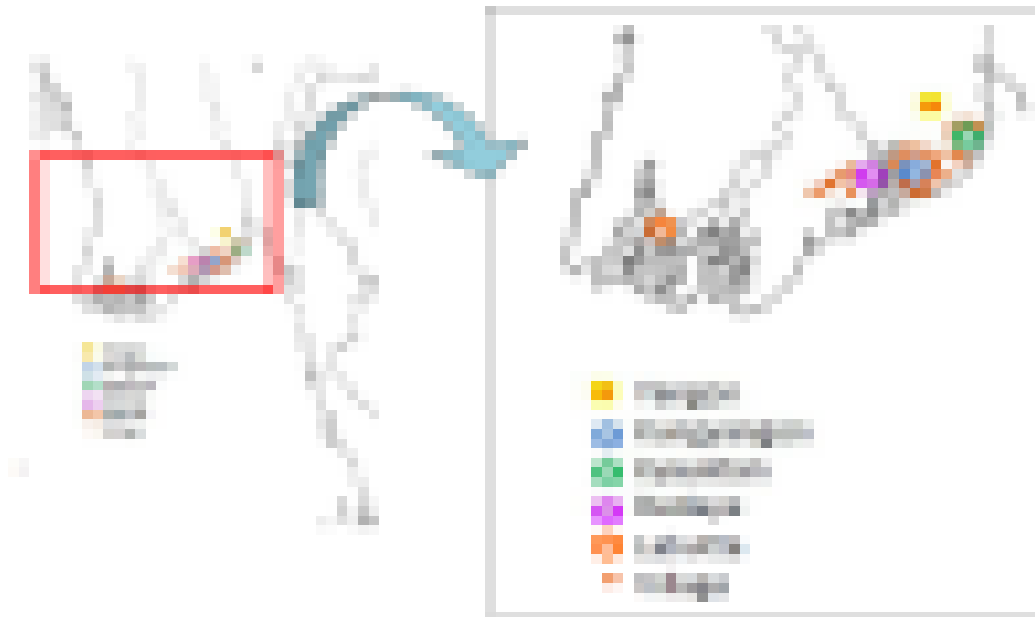


Figure 2. Map of project sites

### 2.2 Project activities

There were three different components: 1) School safety, 2) One Village, One Shelter, and 3) Mobile Knowledge Resource Center (MKRC) and Water Knowledge Resource Center (WKRC). Concerning school safety project, training of trainers (TOT) was conducted in Yangon, and school disaster education trainings were conducted in Township office and at three schools in Dalla Township. For the “One Village, One Shelter” component, training on school disaster education and early warning in the community was conducted in Dedaye Township. Regarding the MKRC/WKRC component, pilot journeys and several field trips were conducted in Dedaye and Kungyangon Townships after completing the installation of all materials on disaster risk management.

### 2.3 Project Components

Project Components	Implementation Partners	Activities	Project Sites
1. School Safety	Metta Development Foundation (METTA)	<ul style="list-style-type: none"> <li>● Assessment</li> <li>● Planning workshop</li> <li>● DRR programme with construction</li> <li>● Monitoring</li> </ul>	2 villages in Labbuta Township, Ayeyarwady Division
	Mingalar Myanmar (MM)	<ul style="list-style-type: none"> <li>● Assessment</li> <li>● Planning workshop</li> <li>● DRR Programme with construction</li> <li>● Impact assessment</li> </ul>	3 villages in Dalla Township, Yangon Division

2. One Village, One Shelter	Myanmar Marketing Committee MMC	<ul style="list-style-type: none"> <li>● DRR Training programme</li> </ul>	1 village in Dedaye Township, Ayeyarwady Division
3. MKRC/WKRC	Myanmar Engineering Society (MES)	<ul style="list-style-type: none"> <li>● Establishing MKRC Truck and WKRC boat with exhibitions for DRR awareness raising for remote areas</li> <li>● Opening workshop</li> <li>● Pilot journeys and field trips</li> <li>● Impact assessment</li> </ul>	Yangon Division & Ayeyarwady Division


Table 2. Project components, implementation partners, activities and project sites



Figure 3. School safety activities (DRR Education)

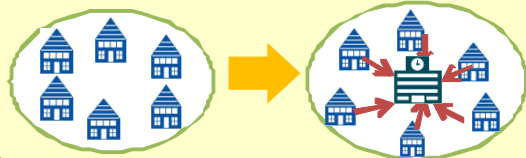


Figure 4. School safety activities (Retrofitting/Construction)



## One village, One shelter

**1. Learning Concept & Criteria for a safe shelter**



**Basic criteria for a safe school as shelter**

**Hardware**

- Safe in Structural and non structural
- Space & Facilities for cooking, toilet, food storages etc.

**Software**

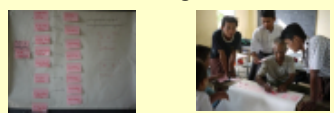
- Proper warning system
- Management system for making school as shelter


**2. Learning lessons from case study of Bangladesh, India and Myanmar**

- Learning Types and objectives of shelter
- Need of Management taskforce
- Need of regular maintenance
- Need of Proper early warning system
- Security and sanitation problems

**3. Trainings and establishment of taskforce**

- Town watching and safe map making
- Early warning Taskforce & Emergency contact list
- Discussion for making school as shelter





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Figure 5. One village, One shelter activities



Figure 6. Knowledge Resource Centres

### 2.3 Beneficiaries of the project

Direct beneficiaries of the project are listed below.

Participants List for School Safety Training	Dalla township (Nov) School safety				Dedaye T/S One village, one village, one shelter	Labbuta, School safety		Total
	7 Nov 09	8 Nov 09	9 Nov 09	9 Nov 09	11 Nov 09	5 Apr 10	6 Apr 10	
Village name	Orientalion for 3 villages	Kyan-sitter	Thar-gyi	Yaza Thin-zan	MMC site	Set-seik	Letaw village	
Total population		13,000	2,800	7,000		1,077	1,266	25,143
Direct beneficiaries of training								408
Teachers	17	13	15	13	3		3	64
Students	0	55	40	41	66			202
Community members	27	0	8	20	22	18	47	142

Table 2. Beneficiaries of school safety training

<b>MKRC</b> (Mobile Knowledge Resource Centre)	Government	Students	Teachers	Villagers	Carpenters	Sub-total
Pilot journey		376	50	65	45	536
1 <sup>st</sup> field trip		440	43	50	11	544
2 <sup>nd</sup> field trip		400	35	100	0	655
3 <sup>rd</sup> field trip		450	28	170	65	713
4 <sup>th</sup> field trip		220	15	65	30	330
<b>Total</b>		<b>1886</b>	<b>171</b>	<b>450</b>	<b>151</b>	<b>2778</b>

Table 3. Beneficiaries of MKRC

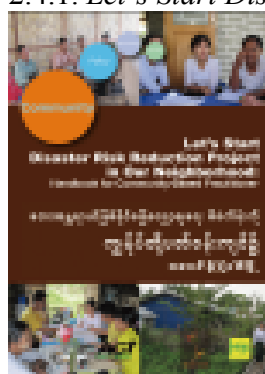
<b>WKRC</b> (Water Knowledge Resource Centre)	Government	Students	Teachers	Villagers	Carpenters	Sub-total
<b>Pilot journey</b>	<b>87</b>	<b>172</b>	<b>170</b>	<b>80</b>	<b>35</b>	<b>544</b>

Table 4. Beneficiaries of WKRC

## 2.4. Development of publications

In the context of the project implementation, publications regarding the four aspects of DRR, i.e. Community, Education, Policy, and Technology, were developed and provided to government officials, local NGOs, and local counterparts, as reference books for future DRR implementation. The details of those publications are as follows:

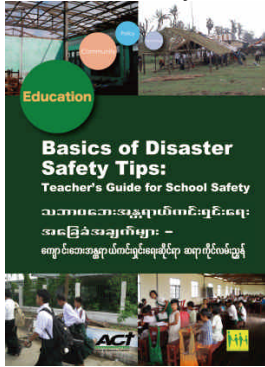
### 2.4.1. *Let's Start Disaster Risk Reduction in Our Neighborhood*



A specific handbook is developed for enhancing the Community-based Organization's (CBO) roles in community-based disaster risk reduction. (School Safety, Community)

Figure 7. Publication on community-based disaster risk reduction

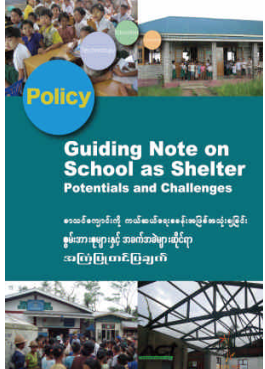
2.4.2. *Basics of Disaster Safety Tips*



Support documents for the teachers to enhance disaster education in schools were published. Depending on the situation of schools and environment, this publication introduces several measures can be taken by teachers in case of emergency situation. (School Safety, Education)

Figure 8. Publication on school safety (education)

2.4.3. *Guiding Note on School as Shelter*



Introducing case studies from many different countries, it is confirmed that school can act as a shelter, which needs good planning and policy level interventions. Therefore, this guiding note was developed to show how school can be used as shelter during disasters. (One Village One Shelter, Policy)

Figure 9. Publication on school safety (policy)

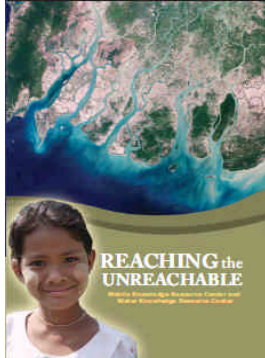
2.4.4. *Essentials of Safer Construction*



This publication was developed to introduce some essentials of safer construction practices for earthquake, cyclone and flood, targeted to engineers and local masons. (MKRC/WKRC, Technology)

Figure 10. Publication on safer construction

#### 2.4.5. Reaching the Unreachable



This brochure was developed to introduce the details of the MKRC and WKRC project mainly to current and future donors. (Policy)

Figure 11. Publication on MKRC/WKRC

### 3. ACHIEVEMENTS AND FINDINGS

It was confirmed that 3 different components: 1) school safety, 2) One Village, One Shelter, and 3) Mobile Knowledge Resource Centre (MKRC) and Water Knowledge Resource Centre (WKRC), have created clear outcomes and have contributed to raise public awareness on disaster risk reduction through capacity building of teachers and local community people and demonstrations in cyclone affected areas mainly in Ayeyarwady division and Yangon division. Main impacts, outcomes and findings of the project are the followings:

- By conducting school safety project, each school became highly motivated to conduct school disaster education by taking initiatives and created evacuation map by themselves, utilizing the safety map of the community which made after town watching.
- School students became able to identify safer shelters such as schools and monasteries and dangerous places like huge ponds and non-cyclone and earthquake resistant houses and to understand how to respond in case of emergency.
- After the implementation of school disaster education trainings, teachers started teaching on disaster risk reduction by teaching the importance of understanding concept of disaster management and of preparedness for the future disasters.
- Teachers and students became actors to disseminate information on disaster risk reduction to other community members.
- It was confirmed that the need of long-term intervention are needed for school safety training program to conduct a series of disaster education and to establish taskforce for Disaster Risk Reduction among the school and community.
- Through MKRC and WKRC, teachers, students and local community members were provided opportunities not only to increase their knowledge on disaster management but to take action for the future disasters by learning practical ways of disaster preparedness and response. Especially MKRC contributed to disseminate information and raise public awareness on disaster risk reduction in the area where access to communities was very limited, by utilizing boat as tool for disaster education.
- Regarding the MKRC and WKRC, teachers, students and community members understood the importance of disaster risk reduction by reading posters, watching models, and participating in workshops, and showed motivation to disaster preparedness. Those contents were modified several times according to the evaluation from participants.
- Participants could obtain accurate information on each hazard such as cyclone, earthquake, and flood through posters and demonstrations and understood the power of knowledge through movies. And, around 93% of participants have strong willingness to take actions for

the future disasters.

The gains of the project have been developed into a new project “Learn Disaster Risk Reduction through Come and Touch MKRC&WKRC” being implemented in Yangon and Ayeyarwady Divisions in Myanmar from July to December 2010, supported by Japan Platform. Main targeted people of this project are teachers and young engineers who will be key facilitators to promote DRR education in the country, which makes easier for other targeted 3,500 students and villagers to learn DRR program by the end of the project implementation period.

#### 4. CONCLUSIONS

Through the School safety program, the targeted schools became models of DRR education in the surrounded area. They take initiative and share the knowledge learnt and skills acquired from trainings to other schools in the neighboring villages.

DRR training focuses on the needs of community-based early warning, which was given to local people in the target community of "one village one shelter" program. After the training, village people created a emergency communication tree by including people in charge of communicating with school, which is a possible shelter in this community. Earlier, the village head had to run to every household to warn about the disasters but with this system, the early warning is expected to be made more systematically.

The mobile educational tools, MKRC and WKRC, enable us to reach the unreachable due to lack of accessibility mainly because of geographical situation where people are facing high risk of disasters. Proposed intervention by SEEDS in Myanmar intends to showcase a good practice in community based DRR through a two pronged approach – linking post-Nargis rehabilitation with long term sustainable development as well as strengthening local level resilience by carrying out capacity building on DRR. The good practice would be designed to fill the gaps in ongoing reconstruction works as well as introduce locally relevant DRR activities.

Communities are the first responders of disasters and, therefore, they are the key players in disasters. This project could be introduced to other parts of the world as a good practice in community-based DRR and could be a showcase of climate change adaptation through strengthening DRR capacity of the communities, thus reducing their disaster risks.

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