




The Role of Education for Natural Disasters



A Report of APEC HRD 04/2011A Project
Emergency Preparedness Education:
Learning from Experience, Science of Disasters, and Preparing for the Future
Proposed by Japan and Thailand



The Role of Education in Natural Disasters

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Edited by Mariko Sato and Masami Isoda

CRICED, University of Tsukuba

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The APEC project meeting was held at Tsukuba and Tokyo, Japan by following schedule:

- Saving the school children from disasters (February 14, 2012)
- Sharing scientific materials for schools (February 15-18, 2012)

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Tsunami Disaster Prevention Education in Kesennuma City: Past, Present, Future

Disaster prevention education with coordination among the Kesennuma City Board of Education, schools in the city, and the Kesennuma City Risk Management Division

Katsumi SHIRAHATA
Superintendent
Kesennuma City Board of Education
Kesennuma City, Miyagi Prefecture
Japan



I would like to talk about the tsunami disaster prevention education that has been conducted in Kesennuma City, with an emphasis on the perspective of “Education for Sustainable Development (ESD)”. In the Sanriku region, which includes Kesennuma City, people have constructed harbors on the coast, and built marine produce processing plants, homes and businesses near the harbors in order to receive greater benefits from the sea. However, that means there is a high possibility of such facilities suffering tsunami disasters. In fact, the Sanriku region—including Kesennuma City—has suffered from tsunami repeatedly. In addition to the tsunami of the Great East Japan Earthquake in 2011, three huge tsunami are known to have occurred: in 869 (the Jogan period), in 1611 (the Keicho period), and in 1896 (the Meiji period). The photo below shows a tsunami monument erected in the Nagasaki area of Ohshima. The monument says that Ohshima has been hit repeatedly by tsunami.

Among the tsunami that have been recorded since the Meiji period, the largest was in 1933 (the Showa Period) when the height of the tsunami reached ten meters in the Ohzawa area on the north coast of Kesennuma City. At the Chile Earthquake the tsunami hit Miyagi Prefecture in 1960, and the number of deaths was smaller at 81, compared with the 1,906 deaths that occurred during the

tsunami in 1933. This was thought to be the result of anti-tsunami measures. In Miyagi Prefecture, tsunami memorial buildings—equivalent to the current tsunami museum—were built in 32 places, with nine in Kesennuma City. The photo shows the tsunami memorial building of the Karakuwa Community Center in Kesennuma City which is the only memorial building still existing today.

It was a major effort to counter the tsunami that repeatedly came to Miyagi Prefecture. However, the memories of tsunami have faded unnoticed. The distinguished folklorist Kunio Yanagida, in his book *Spring in Snow Country*, writes of the fading of memory with the phrase “after twenty-five years,” but this became true even after the Showa tsunami. However, this region has not necessarily lost all its sensitivity with regard to tsunami. There are several tsunami and earthquakes that struck other region. For example, the Hanshin-Awaji Great Earthquake in 1995 and the Sumatra Earthquake and Tsunami in 2004 were shocks to us. Film from Banda Aceh showed us the surging tsunami carrying debris with it.

I would like to look at three events that are connected to the efforts for community disaster-prevention awareness in Kesennuma City. The first is the earthquake that occurred off the coast of Miyagi Prefecture in 1978. In Miyagi Prefecture, 27 people died and 10,962 were injured. Miyagi Prefecture instituted June 12 as “Miyagi Prefecture Disaster Prevention Day,” and various activities are held on this day throughout the prefecture. In schools, in addition to the disaster prevention drills held in the spring and fall, other programs such as study visit to the tsunami museum, are conducted. However, the disaster prevention drills were regarded as part of school risk management, and for some time after being initiated, there was no significant change in this approach.

Next, I would like to talk about the second that led to disaster prevention education in Kesennuma City. That is the start of ESD in Kesennuma City in 2002. In 2002 Omoso Elementary School started international joint environmental education. This was the starting point of ESD, which is an educational practice that aims for the sustainable development of the community, the prefecture,

Japan, and the world. Specifically, it seeks to cultivate the qualities and abilities that will make these aims possible. For that purpose, Kesennuma City has begun cooperation with Miyagi University of Education. Some schools began disaster prevention education as a part of ESD because disaster prevention education has many components of ESD.

The abilities that should be cultivated in disaster prevention education include:

- (1) Ability to learn and act.
- (2) Ability to predict and prepare for the future.
- (3) Ability to act independently and save one's life.
- (4) Ability to use and share information.
- (5) Ability to connect and cooperate with others.
- (6) Ability to make better proposals.

As like other ESD practices, schools must work with the community to implement tsunami disaster prevention education.

The third thing that led to disaster prevention education in Kesennuma City was the earthquake that occurred in May 2003 with a seismic center 16 kilometers off the coast of Kesennuma City. That earthquake was a 5.0 magnitude on the Richter scale. Such a strong earthquake was the first experience for residents in Kesenmuma City. It would not have been at all surprising if a tsunami had struck. However, when the city government conducted a survey of 22,000 households along the coast, the government found that only 1.5% was aware of the possibility of a tsunami and evacuated to a safe area. In response to this survey, the Risk Management Division of Kesennuma City Government held lectures and meetings on tsunami disaster prevention education in 131 of the 171 wards in the city, but the participants always tended to be elderly residents. Then the city government began working together with schools for disaster prevention aiming at educating pupils, students and parents.

Many junior high schools began to offer systematic and planned disaster prevention education as follows:

- (1) Spring and early winter disaster prevention drills.
- (2) Disaster prevention education suiting the needs of each individual school.

(3) Disaster prevention education for school-age children as part of lifelong learning with the community

- a. Learning in facilities
- b. Learning in community
- c. Learning outside of community

This disaster prevention education covers “acquisition of knowledge on disaster,” “preparedness for disasters,” “behavior during disasters,” and “gathering and sharing information on disasters,” and aims to achieve in coordination with the community a common approach of “individual,” “group,” and “public.”

I would like to give some examples of our efforts conducted at schools.

There was the meeting on natural disaster held by the municipal boards of education and the Miyagi Prefecture Board of Education. There, Mr. Hiroki Sato, Division of School Health Education, Department in the Sports and Youth Bureau, MEXT, said that “schools are only open 25% out of 24 hours.” He said that based on data, the time spent by children in school is no more than 15% of their lives. The question is how they will protect by themselves during disasters that occur in the remaining 85% of their time. When disasters occur, even children need to have the ability to make their own decisions and evacuate safely on their own. The schools along the sea coast in Kesennuma City focus on such drills, based on acting on independent decisions. Children are told “a strong earthquake has occurred,” and next, “a tsunami warning has been issued.” Children go to the place where they think there is a safe area, and afterward their teacher evaluates the way they evacuated from the disaster.

Disaster prevention drills are held each year, and it is easy for them to fall into becoming soon-forgotten routines. One example of overcoming this is the practice at Hashikami Junior High School, which holds drills on a three-year cycle, taking the perspective of “self-help” one year, “public help” the next year, and “group help” the year after that. By the time students graduate from the school they will have learned ways to cope with tsunami disasters from the standpoints of the “individual,” “group,” and “public.”

Again, in Kesennuma City, disaster prevention education has been conducted with the cooperation of the City Board of Education, schools, community, the Risk Management Division, universities, etc. Disaster prevention education expands learning outside the school.

This photo shows children learning at the Tsunami Museum. When children visit the museum they receive a detailed explanation and can also go through a simulated tsunami experience. Children also participate in experiences and drills together with adults in the community. The photo shows a drill designed to help children evacuate from a tsunami. The bottom left photo is a practical training in burning available materials to cook rice.

In 2008 and 2009, efforts were made as a model project with the “new public,” with the support of Ministry of Land, Infrastructure, Transport and Tourism. The Risk Management Division and the City Board of Education took leading roles in this project.

The aims of the project are to:

- (1) Cultivate pride among community residents
- (2) Raise disaster prevention awareness
- (3) Energize the community through personal exchanges among the population

This project also had the features of raising awareness of natural disasters.

The contents of the project are to:

- (1) Provide places for children to learn beyond school.
- (2) Hold events and exhibitions on tsunami
- (3) Raise disaster prevention awareness through symposiums.

Next I would like to talk about the Tsunami Field Museum in 2009 and 2010. This project was conducted as disaster prevention education with the support of MEXT. Guidance was offered from Professor Emeritus Nobuo Shutou of Tohoku University and other professors with cooperation of the Risk Management Division. In this project, mobile terminals (mobile phones) were used in an attempt to take advantage of a tsunami databank. Positional information was acquired from GPS in the field, and photos were

taken and simple messages were sent to a server by email. These can then be seen on computers connected to the Internet, edited, and field data can be easily accumulated in a joint effort. A class was held by Ms. Rie Oikawa, a teacher at Kesennuma Elementary School, and the possibilities of this method spread to various survey activities and tourism outside schools, and so expansion of these functions and accumulation of examples of their use are a priority issue for the Kesennuma City Earthquake Recovery Plan. There are also plans to promote this in the Recovery Education Support Project of MEXT.

While such efforts have been made, the size of the tsunami caused by the Great East Japan Earthquake far exceeded expectations, and the height of the tsunami in Kesennuma City reached 23 meters.

This photo shows the south side of the Kesennuma fish market that was destroyed by the tsunami. In Kesennuma Harbor, there were also large fires as snow fell. In this disaster, the number of deaths in Kesennuma City was 1,026, with another 383 people missing. In the industrial sector, 3,314 of 4,102 business places were damaged, and 25,236 out of 30,232 employees lost their jobs by the disaster. About 3,000 out of 3,566 fishing boats were damaged. With more than 80% of each category affected, this was a huge disaster.

The survival rate of pupils and students in Kesennuma City was 99.8 percent, but sadly 12 children were lost. In addition of four learning community centers suffered significant damage, no schools emerge completely unscathed—including from direct damage from the Earthquake. Even so, each school acted as an evacuation center, but all schools reopened on the 21st of April in 2011 without electricity or water. Since the disaster, tremendous mental and material support has been received from within Japan and from around the world. And with the support of volunteers, school activities appeared as one result of the efforts of citizens. We are filled with appreciation for the warm thoughts to everyone involved. When schools became somewhat settled, temporary shelters were built on the grounds of many schools.

Through this huge earthquake, disaster prevention education has become a crucial part of the school curriculum, and education is strongly expected from parents and the community—with greater awareness of the actions of individual pupils, students, and community residents. The goal of this education is zero tsunami deaths and reconstruction education to build the future. Currently, disaster manuals are being reviewed at all schools with the aim of taking advantage of efforts before the Great East Japan Earthquake and being able to withstand major earthquakes in the future. Then, based on that review, new disaster prevention education, including drills and other activities, will be started.

In addition, the Educational Researcher System has been established in Kesennuma City, which grapples with important issues of each academic year. This year, the research topic is disaster prevention education. A conference was held on the 10th of February, 2012, and Dr. Muzillin Affan, a lecturer at Syiah Kualak University in Indonesia, gave a presentation titled: “Tsunami Disaster Prevention Education from the Lessons of the Indonesia Earthquake.” International exchanges on disaster prevention education are valuable opportunities to share experiences and information with each other, and will be of increasing importance in the future.

This concludes my presentation on the history of tsunami disasters in our City, tsunami disaster prevention efforts before the Great East Japan Earthquake and disaster prevention education following the damage and recovery from last year’s great tsunami. The things I have felt through this tsunami disaster are that we humans live on this earth in relation with nature, and that this nature always carries hidden seeds of disaster. The question is how we should live with this. The tsunami disaster prevention education at all schools in Kesennuma City has the aim of sustainable development of the community, Japan, and the world, and of creating a bright future. We want to continue to nurture the qualities and abilities that will make it possible to bring these ideas to reality.

Tsunami Disaster Prevention Education in Kesennuma City

Disaster prevention education with coordination among the Kesennuma City Board of Education, schools in the city, and the Kesennuma City Risk Management Division



Katsumi Shirahata
Superintendent
Kesennuma City Board of Education

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Major Tsunamis on the Sanriku Region

Tsunami monument at Ohshima Nagasaki in
Kesennuma City →



★ History of major tsunamis

- 869 Jogan period
- 1611 Keicho period
- 1896 Meiji period

★ Past tsunami with survivors living today

- 1933 (Sanriku Great Tsunami)
Hoshikami Mado. Height 10m. 1,306 deaths in city
- 1960 (Chile Earthquake and Tsunami)
Karakuwa Tadokoshi. Height 7.2 m. 81 deaths in city
- 1968 (Tokachi Offshore Earthquake)
(Did not submerge land) 1 death in city

"Kesennuma City Community Disaster Plan" and "Noshiro Maru-aka"

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The Fading of Memory of Tsunami



← Kunio Yanagida "Spring in Snow Country"

Tsunami memorial, Karakuwa-cho,
Kesennuma City

Karakuwa-cho, Kesennuma City
Kunio Yanagida literature memorial



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Earthquakes and tsunamis

① June 12, 1978: Miyagi offshore earthquake

→ "Prefectural disaster prevention" day established

② May 26, 1983: Japan Sea earthquake and tsunami

→ Proper tsunami knowledge

③ July 12, 1993: Southwest Hokkaido offshore earthquake and tsunami

→ Tsunami disaster. Refuge during tsunamis.

④ January 17, 1995: Great Hanshin-Awaji earthquake

→ Earthquake resistant structures. Earthquakes with fires. Mutual assistance.

⑤ May 26, 2003: Kesennuma offshore earthquake

→ Disaster prevention education. Disaster prevention drills.

⑥ December 26, 2004: Sumatra offshore earthquake and tsunami

→ Awareness of major tsunamis. Dealing with wreckage. Evacuation buildings.



Efforts 1

1978 earthquake offshore of Miyagi Prefecture

Accompanied by small tsunami, no major damage to the City.
In Miyagi Prefecture, 27 deaths and 10,962 injuries. Total damages of 268.8 billion yen.



- Efforts following earthquake
- "Miyagi Prefecture Disaster Prevention Day" established in 1979.
- Disaster prevention activities across the prefecture on "Disaster Prevention Day"
- Educational activities by lifelong learning department
- Preparation of disaster prevention manuals at schools by principals association and others
- Confirmation of community block system during disasters

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Efforts 2

2002 (ESD started)

- Omoze Elementary School starts international joint environmental education
- Collaboration between City Board of Education and Miyagi University of Education



Educational components in tsunami disaster education

- ① Ability to learn and act
- ② Ability to predict and prepare for the future
- ③ Ability to act independently and save one's life
- ④ Ability to use and share information
- ⑤ Ability to connect and cooperate with people
- ⑥ Ability to make better proposals

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Efforts 3

Earthquake occurs in southern Sanriku on May 26, 2003.

- Kenkenuma City: 22,000 households surveyed; 1.5% recognized possibility of tsunami and sought refuge
- Efforts with community as whole (by Risk Management Department)

○ Lectures, community meetings

Held in 131 of 171 city districts.

Participants tended to be elderly.



- Disaster education, lectures in coordination with schools
- Risk Management Div. prepares disaster prevention text for elementary and junior high school students, and disaster prevention organizations.
- Disaster prevention projects spread to school age children through community and public organizations
- Participation in disaster prevention education with local features that continues efforts by various sectors
- (Spread of ESD type disaster education)

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Spread of tsunami disaster prevention education in schools with coordination between community, Risk Management Div., fire dept., and police dept.
(Spread of ESD type disaster prevention education)

- ① Spring, winter disaster prevention drills
- ② Disaster education in each school
- ③ 1. Learning and education in facilities

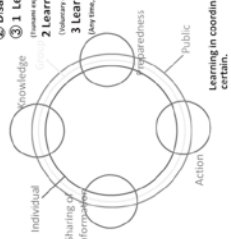
(Human experience hall, disaster center, etc.)

2 Learning in community

(Voluntary disaster prevention organizations, etc.)

3 Learning out of community

(Any time, anyone)



Learning in coordination with others makes coordination more certain.

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Example 1: Tsunami drills at Nakai Elementary School and Urashima Elementary School,

Urashima Elementary School: Practice (living in tents)



Nakai Elementary School: Practice making independent judgments

Urashima Elementary School: Practice making independent judgments

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Example 2: Tsunami drills at Hashikami J.H. School

Food distribution and fire drill



Simulated experience of life in evacuation center

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Example 3: Education and learning in facilities

Karakuwa Tsunami Museum



The only tsunami museum in Miyagi Prefecture. It has been the model for many tsunami museums.

Talk in tsunami museum



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③ Example 2: Community learning and disaster drills

○ Model project based on "New Public"

○ Project aims

- Provide a place for children to learn outside school
- Hold events and exhibitions on tsunamis
- Raise disaster awareness through symposiums



In addition to nature and local culture, awareness of natural disasters and community resources

Project aims

- Cultivate community pride
- Raise disaster awareness
- Energize community through exchanges among people

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③ Example 3: Learning and education in community

○ Tsunami Field Museum

- ① Use IT (mobile phones)
 - ② Use databank
 - ③ Gather, share data
- Use in educational recovery support projects, city key measures

*Practice at Kesennuma Elementary School

Many things have caused citizen disaster prevention movements and led to situation



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Major earthquake and movement toward recovery

(Shishiori fire)

○ Great East Japan Earthquake of March 11, 2011



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Major earthquake and movement toward recovery

(submerged fish market)

○ Great East Japan Earthquake of March 11, 2011



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Tsunami damage in from Great East Japan Earthquake

Damage in Kesennuma City

- Deaths 1,026
- Missing 383
- Damaged businesses 3,314 of 4,102
- Affected employees 25,236 of 30,232
- Damaged fishing boats About 3,000 of 3,566



★ From "Kesennuma City Disaster Recovery Plan"

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Loss and damage at elementary and junior high schools

- Deaths 12 children
- Buildings damaged in tsunami

Miyami Kesennuma Elem. Sch. (can be used), Shishiori Elem. Sch. (1st floor cannot be used), Otani Elem. Sch. (1st F), Otani Elem. Sch. (1st F)



- Disaster centers

Evacuation centers, material distribution station, morgue, Self-Defense Force base, etc.
- Temporary housing

*9 J.H. sch., 5 elem. sch.

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Things necessary for schools in the city today


- ★ Disaster and recovery education with greater awareness of actions of individual students and citizens
- ★ Implementation of disaster prevention education in coordination with the community, and contributions to community building (disaster prevention education to develop people and the future)

- Evaluation of efforts to date
- Reaffirmation of coordination between community/organizations/groups and municipal/prefectural/national government
- Creation and implementation of disaster prevention manuals suited to circumstances of community
- Training of human resources to be in charge of disaster prevention
- Sharing of records, experiences, and lessons from the experiences of the recent tsunami

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As a summary

Tsunami disaster prevention education is not only necessary, but should also contribute to common ways to cope and ability to act in many disasters. It is education (ESD) to develop people who want to sustainably develop the community, Japan, and the world and work toward creating a bright future.



Reconstruction from the Great East Japan

Earthquake and the Role of Education

Hiromichi Ojima
Professor, Ryukoku University,
Professor Emeritus, University of Tsukuba



1. The Great East Japan Earthquake and Mission of Education

At 2:46 pm on March 11, 2011, I felt an intense tremor in my study and hurried to the entrance of my house. The tremor was so strong that I could not stay on my feet, all I could do was to crouch down until the shaking stopped. I remember the tremor lasted for a rather long period of time. Although I had experienced many earthquakes before, I had never experienced such an intense and long-lasting tremor. After the shaking stopped, I turned on TV and watched the news. The screen showed not only the damage caused by the earthquake itself, but also unthinkable scenes of the giant tsunami caused by the massive earthquake. The newspapers of the following morning reported that the earthquake had caused “devastating” damage, referring to the earthquake as the “great east Japan earthquake,” the “giant earthquake in east Japan,” or the “massive earthquake in east Japan.” Later, the earthquake was officially named “the Great East Japan Earthquake.”

A total of 15,844 lives were lost in this disaster and 3,468 people remained missing as of December 28, 2011, according to the National Police Agency. Although the earthquake was a natural disaster, some people called it a “divine punishment” meted out to Japan because it has persisted, even after achieving rapid economic growth, in promoting an economics-first policy and in pursuing economic efficiency—prioritizing the market and competition principle without changing its definition of an ideal society and

human beings and the manner of dealing with nature. This response to the earthquake generated recognition that it was a man-made disaster. I think it important to deal with this great disaster as an issue of recognition by the Japanese people as well as an issue of politics, and to discuss it from an all-encompassing viewpoint as an issue of policy strategy on designing the future of Japan. This, I believe, is the appropriate way to build the path to reconstruction.

The accident at Fukushima No. 1 nuclear power plant caused by the massive earthquake and giant tsunami was classified as a “serious accident” of Level 7—equivalent to the incident at Chernobyl. Coupled with the nuclear power plant disaster and the turmoil in recovery resulting from a lack of political leadership, the disaster wrought by the massive earthquake and tsunami became a compound disaster. It was made clear through subsequent investigations that the nuclear plant accident was not caused by the earthquake or tsunami, but was a man-made disaster caused by Tokyo Electric Power Company (TEPCO) and politics. The nuclear plant disaster made many Japanese people wonder what is going to happen to Japan and if Japan collapses completely.

It is possible to overcome and recover from the natural disaster caused by the Great East Japan Earthquake, apart from the nuclear plant accident. The people in the afflicted area have the know-how to do so. Drawing upon the experience and wisdom gained from past earthquakes and tsunami disasters, both in Japan and abroad.

2. Reconstruction of Education

From July 6 to 12 in 2011, I walked around the disaster-affected area of Tohoku, seeing, sensing and smelling the situation and absorbing the atmosphere in pursuit of some hint to reconstruction. I used busses that run infrequently, transferring from one route to another and sometimes I took a taxi, and I walked an average of 10,000 steps per day. Four months after the earthquake, I did not see the scenes of misery I had seen on TV in March, but I was able to easily imagine the state of devastation at that time. The scenes in the Sanriku shoreline area from Iwate Prefecture to Miyagi Prefecture were completely devastating. But I was somewhat convinced that the area could be restored and would recover if enough time was spent, and people returned to the area. Mankind

has the experience and wisdom to achieve this recovery. Reflecting on the history of the people in this area who have overcome numerous hardships in the past, I felt there was bright hope for the future. Yes, hope is the energy needed for the area to rejuvenate and recover. Hope is a future as a possibility that children and people will talk about the area, society and the world as a dream. How can a form of education that leads to such a future be made possible? What is the role of education that connects reconstruction with dreams and the future? This was the thought and question I had as an education researcher as I walked along the Sanriku shoreline.

Reconstruction is still not finished. Children whose schools were destroyed attend schools in other areas or classes in temporary school buildings. There also is the issue of taking care of children who lost their parents in the disaster and of those needing psychological care. There is also another problem of high school graduates unable to find jobs due to the extreme shortage of job vacancies. We are still midway to reconstruction, and we have to accept the fact that it will take an inordinate amount of time to reconstruct.

These reconstruction issues are matters of the utmost urgency. The reconstruction of education means more than normal lives of schools. Such normal school lives are possible when the surroundings; income, home life, community, employment, industry, medicine and welfare have returned to normal and are functioning and secured. Currently, the reconstruction of these precursors is facing an extremely harsh environment, and this will probably continue for some time. In my opinion, reconstruction is not an extension of re-construction, and it is important to generate a new concept of reconstruction that accelerates re-construction and to ensure re-construction to achieve future-oriented reconstruction. The reconstruction model of the Great Hanshin-Awaji Earthquake cannot necessarily be applied to the case of the Great East Japan Earthquake. The reasons for this are that the afflicted area was incomparably larger, and that there was immense damage caused by the giant tsunami which was not the case in the Great Hanshin-Awaji Earthquake. The vitality and function of the area of the Great East Japan Earthquake has been weakened due to depopulation

and the aging of the population. In addition, there was the accident at the Fukushima nuclear power plant. Thus it is necessary to examine new thoughts, ideas and vision for reconstruction of education.

3. Philosophy of Reconstruction of Education and National Projects

What is reconstruction in which a future dream can be talked about in the sphere of education?

For some time after March 11, I had a sense of deep hopelessness and loss. As time went by, this sense of hopelessness and loss gradually faded. I started to think about the possibility of create something that exceeded the conventional design and framework of reconstruction. Traditional education is expected, of course, to contribute reconstruction, but I would like to build a new and innovative way of and framework of education. What I observed in the Sanriku shoreline area confirmed this possibility. Here, I am going to discuss how education with a view of future-oriented recovery can be planned while seeking to retrieve traditional education.

At school, children gain knowledge and learn the wisdom that mankind has created and accumulated in their daily lives and in society, so that they acquire the ability to design their future lives and select their occupations, or the “art of living.” Children who learn this “art of living” will acquire the various abilities that are necessary as a human being. At the same time that children acquire the abilities and behaviors necessary as human beings and members of society, they establish relationships with their teachers and friends at school. School is not only a place for education and learning, but also it is a place to live with others at the same time. School life should provide children with learning opportunities that give them satisfaction and a sense of fulfillment, and fostering humanity, sociality and social competence.

However, traditional education has aimed at “education *for* ...” ; *for* the development of the nation and society, and *for* passing entrance examinations of higher and academic education. Under this tradition, the purpose of education has been placed outside children, and educational activities have been designed for this

external purpose. This approach has not succeeded in identifying the necessity and motivation for learning “education at present” or in designing school education as part of the community surrounding children.

“Education at present” should focus on dreams and hopes for the future. The bridge connecting such education with dreams and hopes for the future is the social view and value that allows the promotion of career formation by utilizing the “fortitude to live” for subsequent education and for use in society. “Education at present” contributes to the formation of a mature community and society.

Education projects of this sort at the university level include the establishment of disaster departments (Iwate University, Tohoku University, Miyagi University of Education, and Fukushima University) and the plan to establish an international research institute for disaster science at Tohoku University. These measures are “points.” What is important is to form a “line” connecting points based on their relationship. For example, the line will be connected; elementary school–junior high school–senior high school–university. Furthermore, these points and lines should be plane. Plane is related to local activities as a living sphere and social infrastructure of a basic area, intermediate area and the Tohoku area. In order to build a new reconstruction of education in the relationship of point, line and plane, it is necessary to plan the education as a national project, and to implement and operate the education by designating a special education zone beyond the confines of institutions and laws.

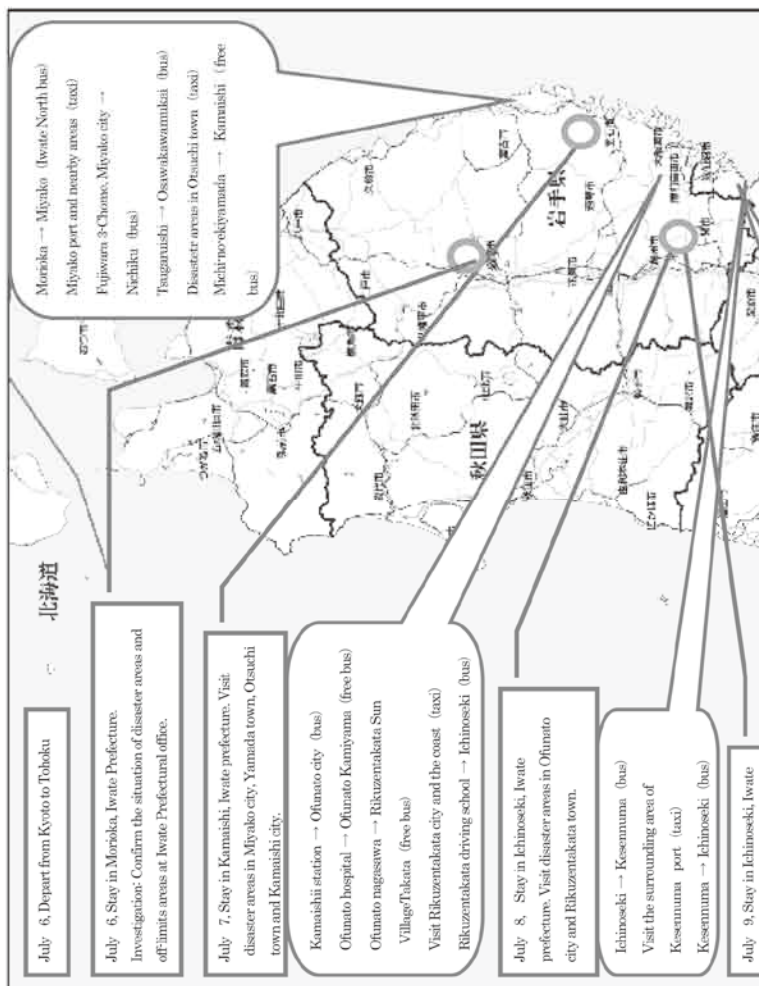
The mission of school education is not limited to the provision of knowledge. The purpose of school education in Japan has been based on the perfection of human character (Fundamental Act of Education). Based on the formation of the abilities required, one of the strategies of reconstruction of education is to provide the education specializing in reconstruction from disaster, and its curriculum and method need to be project-type educational methods using issues of people’s lives and the local community as topics. The project-type education are based on a philosophy, method and mechanism that foster various intellectual, personal and social abilities by composing forms of knowledge and resolving issues within them. There are many practices, experiences and theories

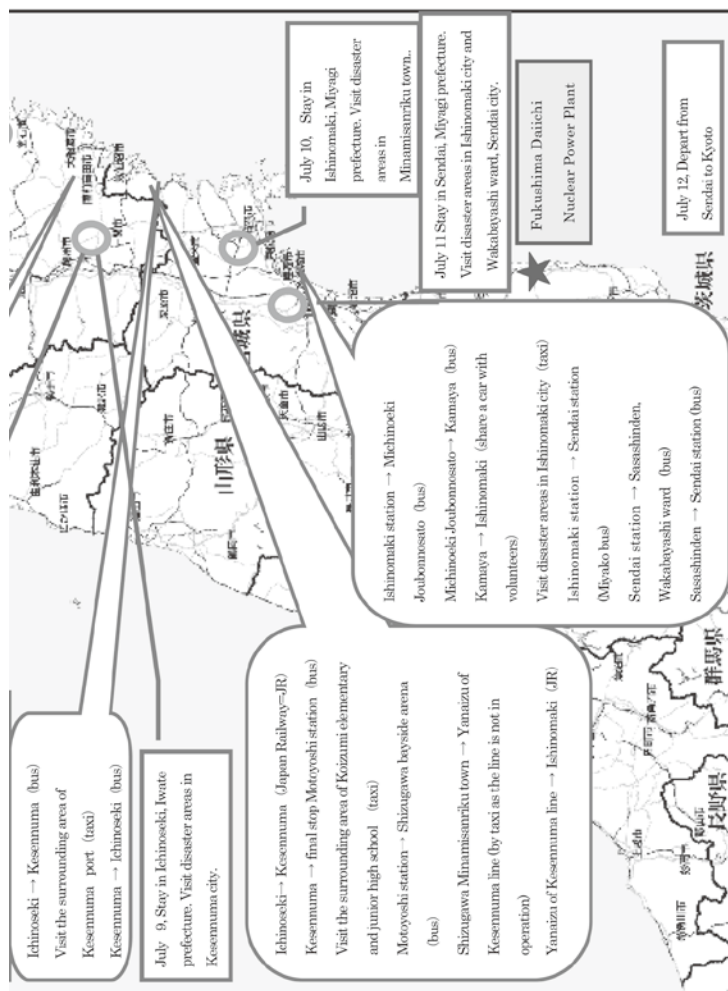
that can be used in the Tohoku region, Japan and the world. It is necessary to use these in order to achieve future-oriented education.

Reconstruction, above all, means retrieving normal daily lives for people in which people's lives, living and jobs are stably secured and maintained. Reconstruction means retrieving the normality of the area viz. people that have been come together with social functions such as lifelines, infrastructure, employment and industries. This is the reconstruction stage. However, there are people who think it impossible to realize reconstruction from the disaster caused by the Great East Japan Earthquake, or who feel that it may take an inordinate amount of time or never be possible. Such recognition, that reconstruction is impossible or extremely difficult, is a result of only viewing and promoting reconstruction within the traditional framework and methods of problem solution-oriented. In the Tohoku region, which has been a source for workforces, food and energy in an economic high-growth society, there have been more and more communities of "genkai shuraku" (marginal villages)—communities that have reached a critical limit in the number of elderly residents that ultimately hinders their ability to function properly due to subsequent depopulation and the aging of the population. The Tohoku region has been deteriorating and left behind in the formation and development of sustainable areas. The massive earthquake dealt a devastating blow to the Tohoku region and this situation has now worsened. We need to survive this national crisis by changing the traditionally accepted view and philosophy of reconstruction by questioning our lifestyle and idea of an ideal future society.

This is the same in the case of education. An example is to build school network in Rikuzentakata City, Iwate Prefecture. Such efforts may bring people back to the community, revitalize their means of living, and make them settle down there. They may create new jobs and rejuvenate communities. As a result of such efforts, children will live and learn here, and such accomplishments will become a source of pride and confidence, and people will be able to cherish dreams and hopes for a bright future.

◆◆ Schedule and transportation map for the research of the disaster areas of the Great East Japan earthquake (July 6-12, 2011) ◆◆





The Idea on Framework of National Project and Disaster Reconstruction Education

- Philosophy of reconstruction: The united and comprehensive formation of micro/macro regional bases which make sustainable activities (education, culture, life and industry) of people and society possible.
- Establishment of “Integrated high schools and universities” emphasizing Disaster Reconstruction Education (DRE) on Great East Japan Earthquake
- Establishment of the university and research institute whose missions are to conduct disaster science and DRE
- Formation of a core center conducting the model project of disaster science and DRE in Japan and in the world
(In case of Fukushima Prefecture, formation of a core center whose mission is to conduct radioactivity research and develop industries with a view of nuclear power free world)
- Promotion a special zone for reconstruction of education
- Economical and social supports: ex.free educational expenses (such as tuition fee) for 20 years
- Priority admission of local students
- United and comprehensive reconstruction of education and culture, life, community, industry, etc.

Educational Goal/ Curriculum/ Educational Method

-Educational philosophy:

Realization of DRE which leads to hope and future

-Educational Goal:

Cultivation of people and leaders who contribute to the formation and development of micro/macro regions

-Curriculum

- Practice-oriented curriculum to clarify and solve problems
- Lessons learned from the history and challenges from the reality

-Educational method /Class:

Problem-solving class, project-type class, and practice-oriented class

-Various forms of schooling

- Attending school 3 days a week while working
- Establishing venture companies by extending the high school period
- Building up careers such as vocational and working experiences after graduating from high school

-Admission to university/entrance exam:

Emphasis on careers such as vocational and working experiences

**Collaborative research projects on disaster reconstruction
education in Tohoku (East Japan), Japan, Asia and the world,
Creation and transmission of knowledge**

- Utilization of educational tradition and school culture in Tohoku region and Japan:
- Japanese school specific subjects like “Academic ability for community life,” “composition on daily community life,” “Period of Comprehensive Study.”
- Turn of duty to serve school lunch and to do cleaning classroom have been paid attention by foreign countries, and this school culture was made use of assistance during the Great Hanshin-Awaji Earthquake
- Educational Practices through vocational and working experience: “Education of manual work” (Gandhi)
- “Education at Present”: Practice of “Kinokuni Children’s Village”
- Creation and development of knowledge regarding disaster prevention and regional reconstruction, and international cooperation on the sharing and transmission of its experiences and knowledge.

The Role of Education in Natural Disasters: Experience in the Philippines

RAMON C. BACANI¹

Director

SEAMEO Regional Center for Educational
Innovation and Technology (INNOTECH)
Philippines



As the year 2011 was about to end, the Philippines experienced a major natural disaster in Northern Mindanao, an area in Southern Philippines, which was for many years considered to be relatively safe from the destructive effects of typhoons. So far more than a thousand lives have been lost aside from thousands of families left homeless by unprecedented flooding.

History of Natural Disasters

Among the countries in Southeast Asia, the Philippines is probably the only country which has been most affected by different types of natural disasters. In July 1990 a major earthquake occurred in Luzon, the most heavily populated island. Large urban centers including Metro Manila suffered heavy damages to life and property. The following year 1991, Mt. Pinatubo, which was considered for a long time as a dormant volcano, erupted spewing tons of ash and dust in Luzon. The ashfall even spread to different parts of the world and reportedly led even to a slight decline in the temperature of the atmosphere.

Over the past twenty-years, 1990 to the present, aside from earthquake and volcanic eruptions, natural disasters such as typhoons, flashfloods and landslides have hit the country. Although

¹ The author served in the Philippines Department of Education for more than 22 years as the senior official in-charge of planning and field operations before assuming his present position in SEAMEO INNOTECH in August 2010.

these disasters are not new to the Filipino people, what seems to be uncommon is the increasing intensity and frequency, as well as the vastness of the areas devastated, large number of the loss of life and properties. These disasters have also been aggravated by adverse human activities such as deforestation, illegal logging, construction of settlements in waterways, and the like.

Impact of Natural Disasters on the Education Sector

Very often, the assessment of the effects of natural disasters has tended to focus on damages to physical infrastructure and losses in agricultural and industrial production. It has to be pointed out, however, that effects on education are equally, if not more, important and require more attention. The occurrence of natural disasters has invariably led to disruptions in school activities. Particularly in situations where schools are used as evacuation centers of families affected by typhoons and flooding, the impact on schooling becomes even worse.

In disaster situations, schoolchildren are very vulnerable to many possible consequences. Time for schooling lost can never be recovered and forever gone. Learning under extremely difficult circumstances exacts its toll on both students and teachers. Their physical well-being and mental/emotional status are seriously compromised whenever conditions in school and at home are disrupted. Normal conditions have to be restored at the soonest possible time; otherwise, the abnormal situation could lead to serious long-term implications on the country's educational development efforts.

Education Sector Response to Natural Disasters

Given the magnitude and complexity of the impact of natural disasters on the education sector, school authorities have initiated several responses based on lessons learned. Some responses are aimed at alleviating the adverse effects of natural disasters on affected school communities. Others are directed at disaster prevention and mitigation.

Most notable among the responses is the development in 2008 of the Disaster Risk Reduction Resource Manual for Schools which provides valuable information, guidelines and guidance on what to do in the event of a disaster or how to prevent or minimize the

occurrence of disasters. This Manual has been widely circulated to schools and trainings/orientations have been conducted to familiarize school heads, teachers and students on what to do before, during and after any disaster in order to reduce or minimize its disastrous effects. The Manual also dwells on measures on how to ensure the continuity of instruction even in the midst of or after a disaster.

At the macro level, the Philippine government has taken steps to strengthen the Disaster Risk Reduction and Management (DRRM) System through the enactment in 2009 of Republic Act No. 10121 which provides, among others, the DRRM framework and institutionalizes the National DRRM Plan. The Department of Education is one of the key agencies involved in the DRRM system at the national and local level. The law also mandates that Disaster Risk Reduction Education be integrated into the school curriculum.

Given the strategic location of public schools and the critical roles played by schools in the lives of their communities, a more systematic response from the educational system is called for. This could be achieved through the institutionalization of disaster preparedness, prevention and mitigation in the school improvement planning (SIP) process within the framework of school-based management (SBM). SBM, particularly its SIP process, requires the participation of stakeholders (school personnel and students) as well as external stakeholders (parents and other community members -- local officials and local institutions). Promoting safer schools should be a primary objective in the formulation and implementation of SIPs, with clear roles identified for different stakeholders.

In situations where schools serve as evacuation centers, school authorities should work closely with local governments, other government agencies and all those involved in disaster relief and camp management. Given the usually large number of affected families temporarily housed in schools, the school can serve as the central point for the delivery of basic social services such as health and sanitation, feeding and psycho-social intervention. More important however is the resumption of classes which would require that classrooms be vacated by evacuees or classes be temporarily held in tents or spaces in schools not occupied by evacuees. Efforts

to resume classes would require coordination and cooperation of all those involved in camp management as well as the evacuees themselves. Alternative delivery modes for basic education may have to be introduced in order to adapt to the unique circumstances faced by students.

As a long-term measure, environmental education has been integrated in the basic education curriculum. This initiative assumes greater significance in the light of the growing awareness of climate change and its diverse implications. It is widely believed that some of the recent unprecedented natural disasters such as the extensive flooding in Metro Manila in late 2009 could be partly attributable to climate change. Seemingly there is no longer any distinct rainy season and a distinct dry season in the country. Typhoons occur as late as November and December in contrast to past historical trends when such were concentrated in the July – October period. A few typhoons even take place in what is supposed to be still part of the dry season. Thus environmental education aims to provide students a better understanding of the environment -- air, water, land, forest, etc.; the changes affecting it and how such changes affect human activities. It also is intended to educate students on how to take care of the environment and its various components. It further hopes to promote an understanding of climate change, its impact on the environment, and ways and means of mitigating its potential adverse impact.

Other steps taken by the Department of Education and other government agencies to cope with or prepare for disaster situations or to prevent or minimize the adverse effects of natural disasters include the following:

1. Construction of typhoon resistant school buildings
2. Construction of makeshift classrooms to immediately replace school buildings damaged by floods, earthquakes, etc.
3. Issuance of guidelines for the suspension of classes based on typhoon signals, among others
4. Conduct of earthquake drills in schools
5. Pre-emptive evacuation in anticipation of strong typhoons or volcanic eruptions

6. Conduct of geo-hazard mapping to identify schools currently located in unsafe school sites

7. Relocation of schools located in hazardous areas

Concluding Remarks

As a sector which has borne the brunt of the impact of natural disasters, education can play a major part in responding to situations brought about by such disasters. Additionally schools can lead in efforts on how to prevent or minimize the adverse impacts of natural disasters by collaborating with internal and external stakeholders. As part of their implementation of the basic education curriculum they can promote a better understanding among students of the environment and its various components.

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**THE ROLE OF EDUCATION IN
NATURAL DISASTERS:
EXPERIENCE IN THE PHILIPPINES**

RAMON C. BACANI
Chief Director
SEAMEO-UNITECH

FEBRUARY 14, 2011

HISTORY OF NATURAL DISASTERS




Typhoon Sendong	Flooding	December 2011	Northern Mindanao
Typhoon Pepeng	Flooding	October 2009	Northern Luzon Central Luzon
Typhoon Ondoy	Flooding	September 2009	Metro Manila Southern Luzon
Typhoon Frank	Flooding	June 2008	Western and Eastern Visayas
Typhoon Milenyo	Strong Winds	September 2006	Entire Luzon
Typhoon Reming	Strong Winds	November 2006	Entire Luzon

HISTORY OF NATURAL DISASTERS



Earthquakes	Earthquake	February 2012	Eastern Visayas Central Visayas Western Visayas
Earthquake	Earthquake	July 1990	Central Luzon Northern Luzon Metro Manila
Mt. Pinatubo Eruption	Volcanic Eruption	June 1991	Central Luzon Northern Luzon Metro Manila
Mt. Mayon Eruption	Volcanic Eruption	Different Years	Bicol
Guinayuan	Landslide	February 2006	Leyte and Eastern Visayas

**IMPACT OF NATURAL DISASTERS ON
EDUCATION SECTOR**



- Loss of lives of students and school personnel
- Serious injury (physical and emotional) to students and school personnel
- Damage to school infrastructure
- Disruption in schooling



EDUCATION SECTOR RESPONSE TO NATURAL DISASTERS

Policy Response

- Disaster Risk Reduction and Management System
 - Enactment of Republic Act No. 10121, in 2009
 - Integration of Disaster Risk Reduction Education in School Curriculum
- Disaster Risk Reduction Manual for Schools
 - Integration of Disaster Preparedness, Prevention and Mitigation in School Improvement Planning



EDUCATION SECTOR RESPONSE TO NATURAL DISASTERS

Disaster Mitigation

- Disaster Relief and Camp Management in Schools used as Evacuation Centers
- Supplemental Feeding for Children
- Psycho-Social Intervention for Teachers and Students
- Holding Classes in Tents or Temporary Schoolbuildings
- Use of Alternative Delivery Modes for Basic Education




EDUCATION SECTOR RESPONSE TO NATURAL DISASTERS

Disaster Prevention and Mitigation

- Environmental Education
- Suspension of Classes Based on Typhoon Signals
- Conduct of Earthquake Drills in Schools
- Pre-emptive evacuation in anticipation of natural hazards
- Conduct of geo-hazard mapping
- Relocation of schools located in hazardous areas





Thank You!

Teacher Professional Development for Mainstreaming Disaster Risk Reduction in Education in ASEAN

Ismunandar

Director

SEAMEO Regional Center for Quality Improvement
of Teacher and Professional in Science
(QITEP in Science)

INDONESIA



Abstract

ASEAN countries sit on a territory vulnerable to disaster. The losses that each country incurs with the disaster occurrences continue to pose threats not only to their respective economies but also to thousands of lives. Disaster Risk Reduction (DRR) begins at home, in communities and in schools. It generally points out education, which is unavoidably vital in nurturing a culture of disaster resilience. This report cites the output of ASEAN Knowledge Sharing Workshop on Mainstreaming Disaster Risk Reduction in Education, held in Malaysia, 18-19 February 2011, especially in the field of teacher professional development. Based on this, efforts needed for sustainable teacher and relevant education personnel capacity development programme for teaching DRR are identified. Small contribution of SEAMEO QITEP in Science in DRR education is also included.

ASEAN Vulnerability and the Need to Build Disaster Resilient Culture at School

The ASEAN region is geographically diverse and covers high hills and rugged mountains, elevated plateaus, highlands, floodplains, coastal plains and deltas. It is home to large river systems such as the Mekong and Ayeyarwady, and major water bodies such as the Tonle Sap and Lake Toba, the latter being the largest volcanic lake in ASEAN region. Most part of ASEAN has hot and humid tropical climate, an exception being the mountainous areas in the Indochina

Peninsula that experience a milder temperature and drier landscape.

The quantitative risk assessment performed in this study confirms the following risk patterns for the ASEAN countries²: 1. Cambodia: floods represent the dominant risk followed by droughts; 2. Indonesia: forest (wild) fires, earthquakes and tsunamis, and floods represent the dominant risks followed by volcanoes, droughts, and landslides; 3. Lao PDR: cyclonic storms, and floods are the dominant risks followed by droughts; 4. Malaysia: floods are the dominant risks followed by forest fires, tsunamis, and cyclonic storms; 5. Myanmar: cyclonic storms are the dominant risk followed by tsunamis, floods and forest-fires; 6. Philippines: typhoons (cyclonic storms) are the dominant risk followed by floods, earthquakes; volcanoes, droughts, and landslides; 7. Thailand: floods are the dominant risks followed by tsunamis, cyclonic storms, and droughts; 8. Vietnam: cyclonic storms and floods are the dominant risks followed by droughts, and landslides; 9. Brunei and Singapore: no disaster data is available.

Memorandum of Cooperation framework for technical support from the World Bank and UNISDR to help the ASEAN secretariat formulate and implement strategies and action plans for disaster risk reduction and management. The objectives of this program include (i) building ASEAN's capacity in the areas of disaster risk reduction and climate change adaptation; (ii) mobilizing resources for the implementation of DRR initiatives in ASEAN; and (iii) helping ASEAN policy-makers gain knowledge of effective and practical ways to reduce disaster risks.

Teacher and Education Personnel Professional Development for DRR in Education in ASEAN and Needed Improvements³

To achieve a disaster resilient society, it is very important to develop a culture of resilience at early age. Thus, schools and

² Details of the study can be found in reference 1.

³ The description given in this part is taken from the workshop report (reference 2), which can be accessed in <http://aseandrr.net/Portals/0/dis-res-young-asean-lowres-final.pdf>

educators play important roles at this part. The ASEAN Knowledge Sharing Workshop on Mainstreaming Disaster Risk Reduction in Education highlights selected good practices as reported by education ministries of the ASEAN Member States, grouped into four performance areas, namely, Enabling Environment, Curriculum Review and Development, Teacher Training and Professional Development, and Assessment of Learning Outcome in DRR.

In term of Teacher Training and Professional Development, it is believed that capacity building and continuous professional development of teachers and school officials are necessary to produce professional teachers who have the theoretical knowledge and understanding, combined with practical skills, competences, and commitment to teach DRR according to national standards. Teachers and school administrators undergo a teacher-training programme and a “Training of Trainers” (ToT) programme on DRR and emergency response, which is usually supported by INGOs and NGOs.

In Thailand, the Office of Basic Education Commission (OBEC) and the Department of Disaster Prevention and Mitigation (DDPM) entered into an MOU in 2009 to cooperate on the capacity building of facilitators, teachers and education officials on DRR. In Cambodia, a training of teachers and teacher trainers was organised to use the DRR-integrated curriculum and instructional materials. Teacher training can also be done in partnership with NGOs working on capacity building of teachers in DRR. For example, the NCDM (National Committee on Disaster Management) and MoEYS (Ministry of Education, Youth, and Sports) of Cambodia have engaged local NGOs such as Action Aid and Plan Cambodia. With Plan Cambodia’s Mainstreaming Disaster Risk Reduction in Curriculum of Primary School project, the MoEYS aims to integrate DRR and CCA in lower secondary school curriculum in nine pilot schools, while NCDM provides technical assistance. In Myanmar, the Ministry of Education has worked closely with UNESCO through the Myanmar Education Recovery Programme (MERP) project since 2009 to develop a comprehensive training package for

Disaster Risk Reduction in Education for school principals, teachers, and township education officers.

In Myanmar and the Philippines, the inclusion of an individual DRR course in teacher education programmes at the tertiary level (colleges and universities) is being proposed, so that all teachers are equipped to teach DRR when they graduate. It ensures the long-term sustainability of DRR integration in education, and reduces future training costs at the same time.

It can be summarized that the progress in this area are (1). Short and long-term training and professional development programmes related to teaching DRR are provided to teachers and other personnel, which may be done in collaboration with INGOs, NGOs and other concerned stakeholders; (2). There are no long-term programmes for training teachers on DRR, and short-term interventions are still inadequate to capacitate all teachers and other relevant education personnel; (3). There are presently no opportunities for teachers and other relevant education personnel to enhance their knowledge and skills in teaching DRR.

The above showed that there are needs for long-term programmes for teacher training on DRR and opportunities for teachers and other education personnel relevant to enhance their knowledge and skills in teaching DRR. SEAMEO QITEP in Science eager to contribute in the field. We can specially design and implement regular science courses to prepare teachers and educational personnel in ASEAN to have the theoretical knowledge and understanding, combined with practical skills, competences, and commitment to teach DRR. To implement these collaborations and partners, especially the University of Tsukuba who are experienced and have an established network are highly expected.

QITEP in Science Local Initiative

To improve knowledge and preparedness in facing disasters, especially earthquake disasters that frequently happened in volcanic area in Indonesia, the Disaster Mitigation Research Center ITB (PPMB-ITB) in collaboration with SEAMEO Regional Center for Qitep in Science held a workshop "Earthquake Disaster Risk Reduction for teachers Around the Lembang Fault". The workshop was attended by 24 teachers from schools around the Lembang

Fault. Participants were given lectures on Earthquakes and Lembang Fault, Disaster Management Policy in West Bandung regency, Disaster Management Policy in West Java Province and Mitigation of Earthquake. At the end of the workshop sessions, participants were escorted to directly observe the area of Lembang Fault. Based on the observations, participants were asked to perform risk assessment, including hazard assessment, vulnerability and capacity assessment.

References

Synthesis Report on Ten ASEAN Countries Disaster Risks Assessment, ASEAN Disaster Risk Management Initiative, December 2010, http://www.unisdr.org/files/18872_asean.pdf, accessed 26 December 2011.

ASEAN Knowledge Sharing Workshop on Mainstreaming Disaster Risk Reduction in Education, ASEAN-UNISDR Technical Cooperation, Jakarta, April 2011.

Teacher

Professional Development

for Mainstreaming Disaster Risk Reduction in Education in ASEAN

Ismunandar
SEAMEO QITEP in Science



SEAMEO REGIONAL CENTRE
QITEP IN SCIENCE
QUALITY IMPROVEMENT OF TEACHERS AND
EDUCATION PERSONNEL IN SCIENCE

www.qitepscience.org

Established 2009



VISION

to be a centre of **professional excellence** in
the area of **science teaching** for teachers and
education personnel within the framework
of **sustainable development**

MISSION

to provide **relevant and quality** programmes
in professional excellence for science teachers
and education personnel through **capacity building**
activities, **resource sharing**, **research** and
development, and **networking**

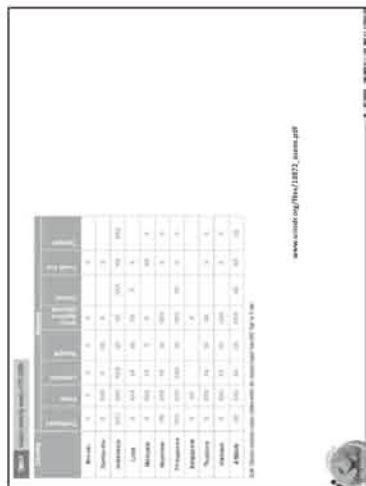
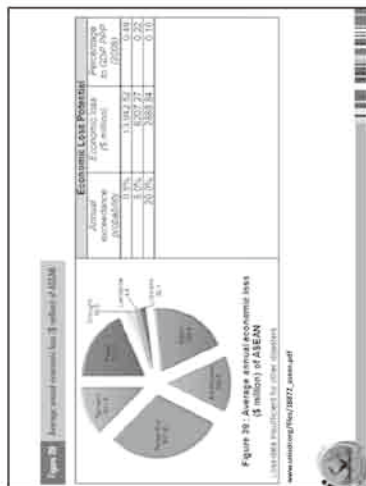
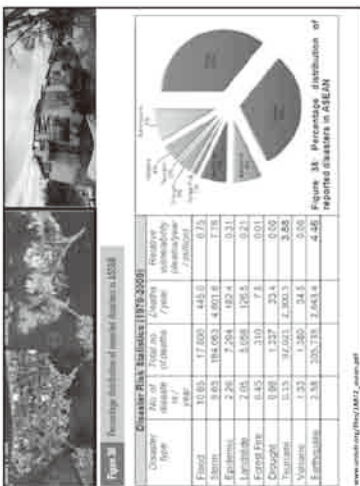


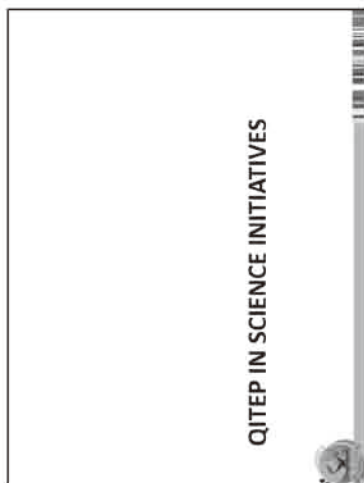
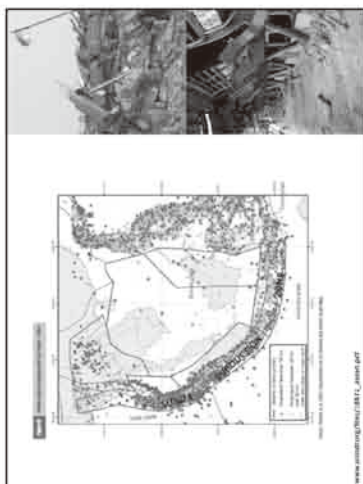
Programmes

- 6 Regular Training courses:
**Environmental Education,
Earth and Space Science,**
Science Classroom Supervision, Science Laboratory
Management, Science Research and Development and ICT-
Based Science Learning
- International Science Education Conference
- Research and Development
- Customized Trainings, Workshops,
Benchmarkings, Seminars

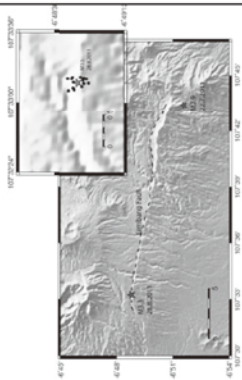


ASEAN countries sit on a territory vulnerable to disaster



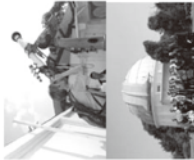


Bandung is on Lembang Fault




- Workshop for teachers:
 - Lecture
 - Observation
 - Risk assessment
- Collaboration with Disaster Mitigation Research Center in ITB

Integration in Earth and Space Regular Course



- Earth and Space Science is a regular course in the center.
- Embed the Disaster Readiness

Next

- Network and collaboration in conducting regular and customized courses :
 - ASEAN-UN ISDR (International Strategy for Disaster Reduction)
 - Universities
 - NGO
 - ..
- SEAMEO Science Curriculum Comparison, including the Disaster Risk Reduction component.

Strengthening Competencies of School Heads for Preparedness and Response to Natural Disasters

Ma. Sandra B. Tempongko
Deputy Coordinator
SEAMEO Regional Tropical Medicine
and Public Health Network (TROPED Network)
Thailand, Malaysia, Philippines



Background

The Asia Pacific Disaster Report of 2011 clearly states that the Asia-Pacific region has had to cope with an unprecedented number of disasters - from Cyclone Aila in Bangladesh, Bhutan and India, Typhoon Morakot in Taiwan Province of China, back-to-back Typhoons Ketsana and Parma in the Philippines, Viet Nam, Lao Peoples' Democratic Republic and Cambodia, the Padang earthquake in Indonesia, the Samoa earthquake and subsequent Pacific tsunami disaster, the heat waves and wildfires in Australia, the “dzud” in Mongolia, the earthquake in Qinghai Province in China, to the massive floods and landslides in Pakistan, China, India and Bhutan. In the past year, the Great East Japan earthquake and tsunami, and the devastating floods in Thailand and the Philippines caused thousands of deaths and massive devastation.

These natural disasters not only cause immediate economic damage and loss of lives, they also have a deep and lasting impact on human development. Disaster losses are often linked with, or exacerbated by poverty and vulnerabilities of the poor that stem from socio-economic and environmental imbalance.

The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (adopted at the World Conference on Disaster Reduction, 18-22 January 2005, Kobe, Hyogo, Japan) identifies education, coupled with sustainable management and planning, as the only effective long-term solution

to prepare for, and alleviate, future tsunamis and other natural disasters.

The UNISDR Secretariat and its partners have made disaster risk education and safer school facilities the two key themes of the 2006-2007 World Disaster Reduction Campaign entitled “Disaster risk reduction begins at schools”.

This campaign in the school paved the way for pursuing the Hyogo Framework Priority for Action 3: Use knowledge, innovation and education to build a culture of safety and resilience at all levels (HFA 3). The campaign resulted to a multitude of activities that were implemented as well as partnerships established and commitments made by relevant stakeholders. The campaign also highlighted the fact that there were existing practices and activities in some schools/countries relevant to disaster reduction long before the initiation of the campaign. These activities include curricular, co-curricular, community-related as well as activities directed towards ensuring safety of the school facilities.

However, one of the factors that will contribute to the sustainability of disaster risk reduction initiatives in the school as implemented through different approaches and components will be the competency of the school administrator/principal/head master. In the school setting, the principal has both technical and managerial functions. There is a need to ensure that the principal will be able to sustain, maintain and strengthen initiatives related to disaster risk reduction long after the campaign.

At the same time, when the school infrastructures become evacuation centres, the school heads as the managers shall be responsible for the preservation of the school facilities and properties for the duration the school is being occupied by evacuees, so that after the emergency period the school can resume operation as soon as possible.

It is in this context, the important role of school principals/head masters in the education of school children, teachers and the larger communities in the promotion of healthy schools and the prevention and mitigation of the effects of disasters and emergencies, that a regional training package for school heads/principals have been developed collaboratively by World Health Organization Western

Pacific Regional Office and SEAMEO TROPED Network with funding support from EU DIPECHO.

Project Activities

1. Workshop

A workshop was organized by SEAMEO TROPED Network for the development and packaging of the regional training course. The workshop was participated by representatives of the Ministries of Education from selected countries in SEA; disasters preparedness experts, curriculum designer, EHA representatives of WHO, and SEAMEO TROPED network and SEAMEO INNOTECH. Workshop participants defined and agreed on the roles and functions of the school heads related to emergencies and disasters in addition to their curricular function. The major functions identified are: (i) Advocacy and Communication; (ii) Planning; (iii) Organizing and Mobilizing; (iv) Coordinating and Networking to include referral; (v) Training; and (vi) Management of the school/evacuation camp.

From these functions the needed competencies were identified which became the basis for the identification of the topics to be included in the training package. The educational goal, course objectives as well as the module objectives were developed during the workshop.

The training package is composed of six modules that will address the development of competencies required for the school heads perform their functions effectively before, during and after an emergency and/or disaster.

Module 1 Conceptual Foundation

Module 2 Planning for emergencies and disasters in the school setting

Module 3 Management of the school as an evacuation/camp site

Module 4 Advocacy and Communication

Module 5 Working with partners and other stakeholders

Module 6 Other concerns in the school setting related to emergencies and Disasters

2. Module writing

Content experts were recruited to write the six modules of the package guided by the course objectives and module objectives. The

curriculum expert also provided inputs in the write –up of the Participants Guide and Facilitators’ Guide of each module.

3. Pilot Testing of the Training Package

A five-day regional training course was organized to pilot test the training package. A total of 18 participants from the four countries involved- Cambodia, Lao PDR, Philippines and Vietnam attended the pilot testing. Each country had a team of four participants who can serve as national trainers and was composed of: (i) Director/Deputy Director/Official of School Health Department of the Ministry of Education; (ii) Principals/ school heads; (iii) The health emergency and disaster focal person from the Ministry of Health.

The teaching/learning activities utilized in the training/pilot testing followed the philosophy of adult learning. Small group/country team discussions as well as active lectures for inputs on the topics were utilized. A video presentation of a disaster (flooding) that affected the schools was shown. In addition, a case study of one school in the Philippines which was utilized as an evacuation site was also presented.

A field visit to two schools affected by a disaster was organized on the third day of the course to complement the case presentations. The field visit also allowed a face-to-face interaction between the participants and those who have experienced the disaster as well as those who were involved in the school when it was used as an evacuation center.

Feedback was solicited from the participants on the implementation of the daily sessions. These were then discussed by the facilitators/resource persons at the end of each day to be able to respond immediately to the suggestions.

The summative evaluation covered two parts: (i) self-assessment of learning; and (ii) usefulness of the training course to their present work/position.

4. Process Evaluation

A separate processing session was organized for the country teams to assess the course in its entirety and to provide inputs for the revision of the course. A specific instrument was prepared by

the organizers to guide the discussion in the small groups. The instrument covered five areas to include:

- General comments about the entire package

- Comments on specific areas of concern

- Overview /Rationale

- Six Modules in terms of its sequence, time allocation, content/coverage, other topics to be included, topics need not be included

- Teaching/Learning strategies in terms of its appropriateness and other suggested methodologies

- Materials in relation to its adequacy of content (hard copy & CD provided) and other materials needed

- Assessment (Daily assessment, Summative assessment)

- Strong points of the course to be maintained

- Points/Areas that need to be improved

5. Status of the project


A report of the pilot testing and processing was submitted to WHO WPRO. It is envisioned that this is going to be rolled out to the member states of WPRO. On the SEAMEO side, efforts are being done to secure additional funding for its implementation in the member countries.



**STRENGTHENING COMPETENCIES OF
SCHOOL HEADS
FOR PREPAREDNESS AND RESPONSE
TO NATURAL DISASTERS**

CRICED-SEAMEO International Symposium

Mia. Sandra B. Tampungko
SEAMEO TROPED Network




**SEAMEO TROPED
Network**

- Regional cooperation network established in 1966 for education, training and research in tropical medicine and public health
- Three Regional Centres
 - TROPED Malaysia
 - TROPED Philippines
 - TROPED Thailand
- TROPED Network Office in BKK



Mission

- To develop the capacity of individuals and institutions in delivering quality health care.

Background

- Asia-Pacific region has to cope with an unprecedented number of disasters
- Natural disasters cause immediate economic damage and loss of lives; a deep and lasting impact on human development
- Disaster losses are often linked with, or exacerbated by poverty and vulnerabilities of the poor that stem from socio-economic and environmental imbalance

- Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters

"education, coupled with sustainable management and planning as the only effective long-term solution to prepare for, and alleviate, future tsunamis and other natural disasters"



TROPED Network's Response

- "Mental Health Project for Adolescents of Selected Schools and Communities in Phang Nga"
- International Workshop on Approaches to Psycho-Social Care after Disaster and Lessons Learnt from Selected Projects in South and South East Asia



- Development of Advocacy Manual for Safe Hospital



- Regional Courses

- Risk Communication
- Mass Casualty Management
- Safe Hospital
- Health Emergency Response Operations

- Health Emergencies and Disasters: Experiences From The Western Pacific Region



- UNISDR 2006- 2007

World Disaster Reduction Campaign:
"Disaster risk reduction begins at schools".

- ☐ disaster risk reduction
- ☐ safer school facilities



School Principals/ Managers

- Technical and managerial roles
- Expected to sustain, maintain and strengthen initiatives related to disaster risk reduction
- Responsible for the preservation of the school facilities and properties for the duration the school is an evacuation centre
- Ensure that effect on the education function of the school is minimized

Training Package "Regional Training Course on Disasters for School Heads/Principals"

- SEAMEO TROPMED Network
- WHO WPRO
- EU DIPECHO

Project Activities

- Consultative Workshop
- participants : MOE, Experts, curriculum designer, graphic designer, WHO, TROPMED Network, INNOTECH



Output

- Module 1 Conceptual Foundation
- Module 2 Planning for emergencies and disasters in the school setting
- Module 3 Management of the school as an evacuation/camp site
- Module 4 Advocacy and Communication
- Module 5 Working with partners and other stakeholders
- Module 6 Other concerns in the school setting related to emergencies and disasters

 **Module Writing**

☐ Packaging

- overview
- Participants guide
- Facilitators guide



 **Pilot Testing of the Course**

- 4 countries (Cambodia, Lao PDR, Philippines, Vietnam)
- Country Team (School Health, MOE; principals; MOH)



 **Methodology**

- ✓ adult learning principles
- ✓ group discussions
- ✓ video presentation of cases
- ✓ visit to schools



 **Evaluation**

- ✓ Daily feedback and processing
- ✓ Summative evaluation
- Self-assessment of learning
- Usefulness of the course
- ✓ Processing session with country teams





❖ Status of the Training Package

- revised based on the evaluation
- submitted a final report
- TROPMED Network looking for funds

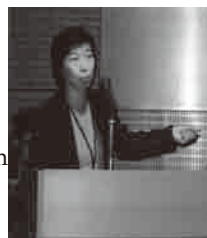



Thank you



Thailand's Great Water Waltz of 2011: Implications for Education Design

Sauwakon Ratanawijitrasin
Director
SEAMEO Regional Center for Higher Education
and Development (SEAMEO RIHED)
Thailand



The Way of the Water

In 2011, Thailand witnessed big flooding which covered 65 out of the countries' 76 provinces. The floods affected the lives and livelihood of over 4 million people, caused 815 deaths, and inflicted devastating damage to the Thai economy. The biggest of last year's flood was the one which covered almost the entire central region. It expelled millions of people from their homes, ruined farmlands and industrial parks, submerged domestic airport and brought its operation to a halt, scared tourists and other visitors from the country.

Unlike earthquakes, tsunami, volcanic eruptions, or typhoons—whose strikes are relatively sudden, this flood took months in its gradual progression from the areas where the four main northern tributaries join to form the country's largest water way—the Chao Praya river—through the central plains, and into the Gulf of Thailand. During the over four month period from the time the flood started its long, slow dance in the northern central region to the sea, one shortfall after another of disaster management unfolded.

This paper identifies key problems in government's flood management and the public's responses to the flood situation, and suggests the roles of education in enhancing the understanding of disaster and improving the capability in its management.

Compositions of the Devastating Rhythm

Many factors, natural and man-made, worked in concert to cause the crisis and devastation. Key man-made factors related to the lack of knowledge and/or the failure in applying appropriate knowledge are identified below.

1) Disaster Un-preparedness

1)-1 Turning every emergence into an emergency

For about three months since the flood started, it appeared to be a near total lack of planning in disaster response. Responding to the flooding, the Prime Minister set up Flood Relief Operations Command (FROC) in early October to be the central command organization for coordinating the works of multiple agencies responsible for flood management. However, the FROC was run without an adequate plan and operated in a bureaucratic manner. Without planning and preparedness, FROC's handling of any situation that arose was done on an event by event basis. Preventable problems then became emergencies. This is demonstrated by the shock and chaos of FROC's personnel when they themselves had to flee from FROC headquarters at Donmuang airport when the water burst in.

1)-2 Shelter shutdowns

A large number of temporary shelters were set up by the government, universities, temples, and other organizations, to help settle people evacuated from flood affected areas. Many of the shelters which opened during the early days were located along the route of the flood trajectory. They operated for a short period of time before shutting down when the flood arrived. Those took refuge in them then had to be rushed out and relocated to another place. Some flood victims had to move more than once because of such a shutdown.

1)-3 The height of water gates

The many water ways—natural as well as man-made—in the central provinces serve as conduits for the flow of water from the inland areas to the sea. Managing the heights of the gates built along these water ways is crucial to regulating the water levels. During the flood, how high these gates were to be raised or lowered

was determined either arbitrarily or by politically driven decisions, and sometimes by court order.

1)-4 Shallow water ways

Bangkokians take pride in the city's nickname--the "Venice of the East"—for its many canals. The 2011 flood revealed that these canals became shallow because of garbage, sand and soil, due to the abuse of water ways and years of neglect, which greatly reduced their capacity to drain water into the south sea.

1)-5 Flood walls that drifted away

Due to late flood warning, flood barriers in many areas were built in a rush by piling up sandbags and soil, instead of better methods. Many of them were washed away because of their inability to resist the force of water.

2) Information Confusion

Throughout the crisis, the entire nation was left in confusion because of the failure in information and public communication. Information about the flood situation released by the government can be characterized as inaccurate, contradictory, late, and useless. Residents living in some areas north of Bangkok had to flee the flood during the night without prior warning. Later, when the government did issue 12-hour warnings, the lack of details did nothing to help people better prepare.

The failure at Navanakorn industrial estate highlights such information inadequacy. In the morning of 17 October, FROC's high level administrator announced with confidence that the industrial estate would be saved from the flood, only to see the estate submerged in water a few hours later.

3) Public Ignorance

"The flood won't get here because it never happened before." This was a general sentiment shared by a large number of people even when the front of the flood reached a neighboring community. They, therefore, refused to evacuate before the flood arrived at their doors. This reflects the inadequate understanding about the disaster and lack of preparedness on the part of the public.

4) Political Exploitation & Allegation

On top of the failure of disaster response, politicians exploited the flood donations and blamed each other for the fiascos. There had

also been allegations about politicians involvement in the regulation of the water levels in the various dams that eventually led to the mistimed release of huge body of water down the central plains.

Promising Progress

Aside from the problematic responses in the government flood management, there were positive developments during the crisis.

1) People Power

Where the government failed in assisting people suffered from the flood, individuals and non-governmental organizations—both businesses and non-profit ones—jumped in to help. Many of them coordinated and created networks to improve their services and to expand their reach deep into the flooded areas. Voluntarism prospered during the difficult times.

2) Improvised Innovations

Many inventions appeared to fill the daily needs of life surrounded by water. Some examples are boats made of recycled milk and juice boxes, paper toilets, plastic car wraps.

Reconstructing Education on Disaster Management

Education is critical in helping those responsible for handling disaster situations and the general public to have a good understanding about the nature of disasters and how to respond. Multi-prong approach can be designed to simultaneously address the different target groups and different needs. The mode of education can include formal, non-formal, and life-long learning.

1) Cultivating knowledgeable and responsible citizens

Lessons on the nature of disasters, the preparedness, and appropriate response for individuals and households should be included in the education of all citizens, preferably in primary and secondary education. Students should be taught appropriate knowledge and inculcated civic responsibilities, for example not to throw things into the water way. Drills should be organized at schools and in communities.

2) Developing expertise and advancing frontiers of knowledge

More higher education programs/ courses, and research in different specialized fields are needed to develop experts in various specializations and advancing knowledge in managing disasters.

3) Building public awareness and preparedness

Public educational programs focusing on the nature of disaster, how to get prepared and how to respond should be developed for individuals, households, and communities. This can be done through the use of different medium of education and agencies, including, but not limited to, mass media, web-based programs, community educational sessions by government and non-governmental organizations.

4) Creating knowledge society

Lessons can be drawn from past successes and failures. Thailand's flood crisis provides many valuable lessons on what not to do in the handling of disaster. It also generated civil society experiences from which good examples of emergency innovations, samaritan and voluntarism abound. Systems of knowledge management to document and disseminate these experiences—both positive and negative—can help the society learn and avoid mistakes.

5) Enabling global synergy

A vast range of expertise in the management of different natural disasters exists in different countries. Sharing and learning of such knowledge and experiences internationally will help boost collective capability for disaster preparedness and response.

This paper proposes international collaboration in higher education to enable global synergy in managing disasters. Using a system framework, the different facets of disaster management can be grouped into prediction/forecast, prevention, preparedness, emergency management, reconstruction, and long-term rehabilitation. A survey and mapping of programs /courses and research in these areas internationally will serve to identify and locate global expertise. This should then be followed by programs to facilitate exchanges of students and researchers to study and conduct research across countries. Good practices can also be identified and used as materials for case study.

Thailand's Great *Water Waltz* of 2011: Implications for Education Design

Panel on "The Role of Education in Natural Disasters (Earthquakes, Tsunamis, Volcanic Eruptions, Typhoons, and Floods)."

By

Sauwakon Ratanawijitrasin, PhD

Director, SEAMEO RIHED

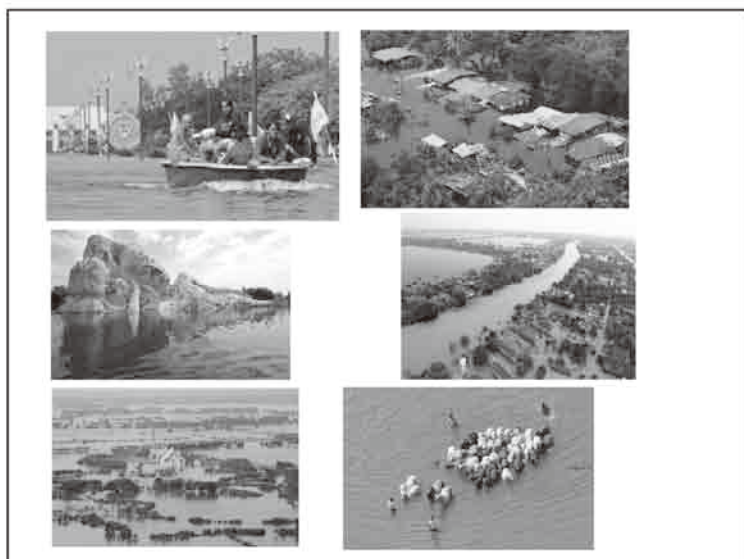
CRICED-SEAMEO-APEC International Symposium

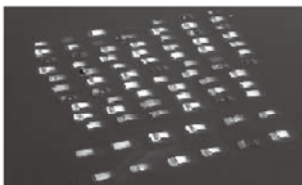
Tsukuba, Japan

14 February 2012

A Shared Experience in the Land of the Water







Affected

- 65 provinces
- > 4 million households
- > 13.5 million people
- All societal sectors

Caused

- 815 deaths
- Almost US\$ 46 bn economic damage



The floods in the central plain

- Typhoon Nok-Ten hit northern central region-- 25 July 2011
- Took > 4 months to reach the sea

It was one of the worst
"natural" disasters ever
occurred in Thailand.

Was it?



Jul – Dec 2011

Compositions of Devastation

Disaster Un-preparedness

- Unnecessary emergencies
- Shelter shutdowns
- Water sluice disputes



Flood Relief
Operations
Command
(Froc)



Compositions of Devastation

- Shallow and blocked water ways
- Flood “walls”



Compositions of Devastation

- Information Confusion
“flood warning”
- Public Ignorance
“The flood won’t get here because it never happened before.”
- Political Exploitation & Allegation

Structural problem:
short-sighted urban development



Five years after the hurricane, we are fixing the levees. But we're still not fixing the coast—or the politics that destroyed it.

Source: Time, 6 Dec 2010

HAITI

January 2010



shoddy construction

January 2012



SICHUAN, China

May 2008



"tofu dregs"

February 2011

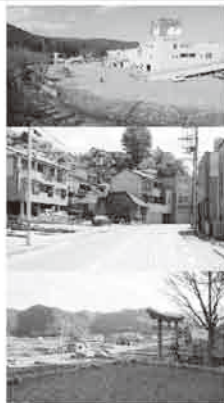


East JAPAN

March 2011

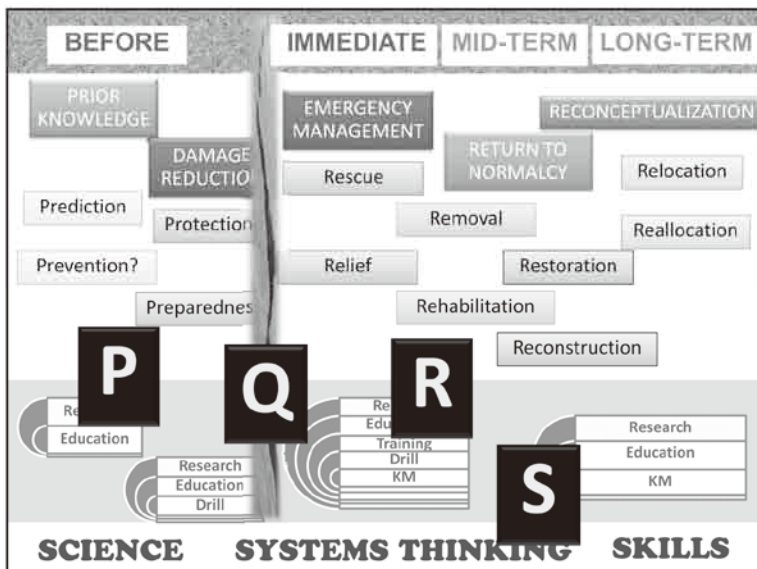


June 2011



Observations

- There are the natural part and the man-made part of a natural disaster.
- Knowledge is needed for all sectors of the society to properly prepare and respond to disasters.
- Education plays a critical role in all aspects of human response to a disaster.



System Framework for Disaster Management & Education Design

- Cultivating knowledgeable and responsible citizens
- Developing expertise and advancing frontiers of knowledge
- Building public awareness and preparedness
- Creating knowledge society
- Enabling global synergy

Higher Education Actions for Disaster Management

- International survey and mapping of expertise, programs, courses, research
- Facilitate exchanges of students, researchers, responsible officers to acquire specific expertise
- Learning from good practices
- Contributing to building knowledge society

Thanks

- CRICED, University of Tsukuba
- Prof. Mariko Sato
- All organizers
- Those who shared their photos on the internet

Data sources

- <http://www.theatlantic.com/infocus/2011/10/worst-flooding-in-decades-swamps-thailand/100168>
- Thairath.com
- <http://www.dailymail.co.uk/news>
- <http://factsanddetails.com/china.php?itemid=1020&catid=10&subcatid=65>
- Department of Disaster Prevention and Mitigation, Thailand, Disaster Situation Report 10 January 2012
- etc

Panel Discussion

Moderator:

Dr. Seiji UTSUMI (Professor Emeritus, Osaka University)

Panelists:

Mr. Katsumi SHIRAHATA (Superintendent, Kesenmuna Board of Education, Miyagi Prefecture)

Prof. Hiromichi OJIMA (Professor, University of Ryukoku, Japan, Professor Emeritus, University of Tsukuba)

Dr. Ramon BACANI (Director, SEAMEO INNOTECH)

Dr. ISMUNANDAR (Director, SEAMEO QITEP in Science)

Dr. Ma. Sandra B. TEMPONGKO (Deputy Coordinator, SEAMEO TROPMED)

Dr. Sauwakon RATANAWIJITRASIN (Director, SEAMEO RIHED)



Panel Discussion

The Role of Education in Natural Disasters

On the Perspective of International Cooperation

Seiji Utsumi (moderator)

Good afternoon ladies and gentlemen. We would like to commence the Panel Discussion. About 30 years ago, I served as an instructor for about 3 years at SEAMEO-RECSAM. I was much younger, and it was a very good learning experience. Then, I was involved in assistance to Afghanistan. Education in post-conflict country has been my research theme for the past 10 years.



We had the Great East Japan Earthquake on 11th of March, 2011. After the Earthquake, I visited the Tohoku region with some of the students of Ochanomizu University which I work for. In Rikuzentakata City, we opened “community café” where it served as fora for communication between the students and the local residents that stayed in temporary shelters and we organized some events like Christmas Party, Karaoke Party, etc. There was a Hula Festival in Iwaki City of Fukushima Prefecture. We supported that event as well. The City of Iwaki has been receiving a lot of children from the areas that are contaminated by radiation. We helped children with some of the school work. I feel a pain about what these children and the people are going through.

Now for the panel discussion today, firstly, I would like to reflect upon the presentations made by the six panelists. After that, we will spend some time eliciting additional comments from each of the six panelists. Then we will open the floor for questions and comments. I would like you to take an active part in the discussion and at the

end we will have comments from the panelists to close the panel discussion.

These are my reflections of the presentations. From Mr. Shirahata's presentation, I learned the ESD (Education for Sustainable Development) in Kesennuma City is very useful in disaster prevention education. Disaster prevention Education is not something that we can do overnight, but is more of a long-term effort.

Dr. Ojima proposed a national project which is a very great encouragement. When there is a major disaster, we have to think about the future, what can be done the next time there is such a disaster. That is a good trigger. It is also a responsibility for those whose lives were saved after the disaster. National project would be quite challenging and, hopefully, Dr. Ojima will voice his views in proposing this idea as we try to reconstruct the devastation.

Dr. Ramon Bacani is from INNOTECH located near Manila. The Center was built with the assistance of Japanese government. It is a well-built facility. Japanese international cooperation for international organizations is limited but INNOTECH is one of the few success cases that Japan contributes to. Dr. Bacani's talk reminded me of a weather forecast in Japan. A weather forecaster said, "There is a typhoon being generated but it is going towards the Philippines, it will not reach Japan, and we are safe". That is a wrong way of reporting because it will hit the Philippines, and inflict damages. On visiting the INNOTECH in the past, I saw the ashes from Pinatubo Mountain in a bottle and it was black dust in white and I could smell the sulfur. I went to the Valley of Pinatubo and saw the damage there. I could see firsthand that the Philippines is very prone to various natural disasters. With that understanding, we really need to work together.

Dr. Ismunandar addressed that disaster education being incorporated into science curricula is not easy, however it is important that we incorporate the view point of disaster prevention in the overall educational curriculum. In Bandung University of Education, Center for Science and Mathematics Education was established with Japan's assistance which I was involved in and had the opportunity to visit the site even before the center was

established. I hope that that the Center would be leveraged for this purpose.

Dr. Sandra Tempongko mentioned a socio-emotional or a psychological care. When there are disasters or conflicts, the weak such as women and children are hard hit and need to be paid attention to. A social and emotional psychological care is quite important in times of disaster. I was familiar with TROPMED itself but unaware of the activities it conducts. The TROPMED activities are related to countermeasures against malaria using a biological method. Infertile mosquitoes are used in a special breeding technique to prevent malaria from spreading. Because this is a Center for Medicine, I do not think that they can serve in the capacity to help the children who are actually affected by disasters, and if there are some activities like that, I would like to learn more about that.

I was very much surprised to see the flood in Thailand. I was wondering why this happened as it was really a large scale flood, which was unheard of. Living in such a circumstance would have been quite challenging. The flood had a major impact on Japanese industry as well. The scale of impact of the flood was such that it pushed down the GDP of Japan. The death toll was small and yet a disaster can inflict so much damage. I wonder how we can prevent such disasters. Maybe more explanation can be given.

That was just a reflection about the six presentations. I would like to now ask Mr. Shirahata to make some additional comments about any other presentations by other panelists.

Katsumi Shirahata

This is a brief comment from me. As I mentioned in my presentation, one issue in Japan is as follow: Natural disaster is caused in the nature, and if the level of effect is always going to be same, it is easy for us to find a solution and prevent any natural disasters. We cannot prepare for natural disasters occurring once in 100 years. In addition, such natural disasters are easily forgotten. In the case of tsunami, there was the fading of memory. The past experiences were forgotten when tsunami hit us again.

Earthquakes and natural disasters of large scale in East and Southeast Asia are known to us. By knowing the natural disasters in other regions, the problem of the fading memory can be solved. We have to think what actions need to be taken in order to deal with them. At the same time, it is an opportunity for us to get together and talk about the same issue. In the process, information about experiences of natural disasters in various parts of Asia should be exchanged among nations.

For instance, On the 7th anniversary symposium of natural disaster in Banda Aceh on December 24th to 30th, we sent some staff of the Kesennuma City Government to this symposium with the support of JICA. On February 10th, we invited Dr. Muzillin Affan, the professor of the Indonesian university, to make a presentation about the experience of tsunami and education for natural disaster prevention in Indonesia. We shared the similar information as well experiences and this opportunity gave us an importance of exchanging views and experiences. The preventive and the disaster reduction countermeasures against natural disasters should not be restricted to one country's experience but should be shared more broadly across national borders.

Hiromichi Ojima

After last year's disaster I was very irritated reading and hearing of the reports of experts and researchers, and learning about the government's response. From all the deliberations, I was not sure if we are going to see a clear direction about the reconstruction. I was expecting something to come out but did not see any clear direction in June after three months passed. I felt very desperate about the state of our nation. But I could do nothing about it at that time. But still I wanted to find some starting point to find a solution and embarked on a 1-week trip in Tohoku area.

The efforts of MEXT, government or the academic societies are significantly important. But will all those efforts lead to somewhere? Which directions are they heading? That was unclear and unacceptable to me. We learned from the Hanshin-Awaji Earthquake that there was revival that leads to new possibilities even after there was a devastating damage by the earthquake. But

in the case of the Great East Japan Earthquake, there was no such reemergence.

I talked about the need to look at the situation from a micro and a macroscopic perspective and think about the true recovery of this region. I feel we need the recovery philosophy. It is essential to have a philosophy about the direction of recovery but the concrete ideas about how to go about establishing it is not clear. But for an education researcher, that thinking about those things was important.

In the case of nuclear power plants, to talk about some private things, my father was born in Namie Town and the Soma Region in Fukushima that was devastated by the tsunami and also is severely contaminated by the nuclear power plant accident. They do not even have a phone service. I do not think the situations are going well there.

The Japan Association for Study of Educational Administration conducted a survey about the reconstruction of schools and held an interim report meeting at the request of MEXT. But there was nothing new that could be learned.

The Japanese people have been dealt this huge blow by the disaster, but we only have partial solutions. We need someone to come up with a comprehensive solution. Tohoku region has been the supply base of labor, food, and energy for many decades. But we need to overcome the situation and reconstruct a new region. We need to move a step further and develop this region so that we can create a vibrant community with new knowledge within Japan, within Asia, within the world. Reconstruction science should be the framework to think about that. The nation has to support the region so that it can become a base for knowledge creation. I am proposing something we had not had in the past in Japan.

Ramon Bacani

I would like to build on what Dr. Sauwakon and Dr. Sandra discussed. The need for some kind of a system's view of responding to natural disasters and the role of school or school principal in

responding to natural disasters. We really need the system's view in terms of specific roles for different actors at different levels. For instance, the National Building Code, School Location Planning and Integration of Disaster Risk Reduction Education in the curriculum policies are set up at the national level and have to be translated into specific actions. For instance, when it comes to building codes, these have to be implemented by local government authorities. The implementation of the Disaster Risk Reduction in the curriculum has to be undertaken at the school level. In the context of the Philippines, on regional, provincial, municipal, and village levels, very specific responsibilities have to be defined for each of these levels so that there will be some kind of an orchestration of activities when a disaster is anticipated.

Also during instances wherein disaster relief or disaster mitigation activities are to be undertaken at the school level, there are very specific activities which school principals and schools are working with their local communities and local governmental authorities because schools are part of local communities and they have to work on both levels.

In the Philippine context, while there is a National Disaster Coordinating Committee, there is regional, provincial, and municipal disaster coordinating committees that immediately respond to disaster situations. They are in the best position to understand the situation and decide on the actions that need to be undertaken to respond in a systematic way to situations that arise out of disasters occurring from time to time.

Ismunandar

I have three comments. The first is that the disaster reduction or preparedness is not an overnight process. There is a very little time to build it into the culture and the people.

I remember when I did my Ph.D. I was a frequent flier to Tsukuba and one night there was an earthquake and as a sudden I ran from my dormitory and there was no one outside. In the next morning I told everybody in the lab and last night there was a big earthquake and I ran from the dormitory. All my friends in the lab said, "Oh, you do not have to worry about that magnitude of

earthquake. If there is something scale in the earthquake then you have to worry". That is the kind of thing that we have to build in the culture and the people.

The second is that the integration of disaster into the science curriculum is a quite a challenge. I think it just came up in my mind. Professor Isoda gave us in this morning the pamphlet including articles and reading from the newspapers. It is a context that we can put into the school curriculum which the people can then introduce into science, mathematics, or other subjects. The context can be a starting point to integration of the disaster into the curriculum. The initiative can be disseminated to other SEAMEO member countries to identify the disaster in the past that we can learn and integrate into the curriculum.

The third is to congratulate TROPMED which have made a module. A module can be use in our center because there is science supervision in the school. One of the challenges is how to integrate a module into the courses.

Sandra Tempongko

There are three things. One is to clarify the focus of TROPMED Network, which is actually serving two groups of population, because of TROPMED Network, because of the nature of its mandate which is Tropical Medicine and Public Health. One is the general population health. That is why we work closely with the Ministry of Health and there are a lot of human resource development efforts, academic, degree programs, short courses, conferences and seminars, study visits that are organized for health professionals.

On the other hand, as a member of SEAMEO, we have a mandate to ensure that the school health is well-provided and well-taken care of. We are also looking at the health issues in the school setting. Taking into consideration that when we talk about school health it is not only just the provision of services but also components of school health, that is the health services and health education. We have community-school relationship, and then there is the enabling environment in the school which is the health environment.

TROPMED Network has two branches as far as the nature of the work that we are involved in. One is mostly related to the school setting and the principals. The second point is when we talk about Disaster Risk Reduction and Mitigation, we are not just talking about a one-shot activity but a long-term goal that we need to work. There are a lot of different approaches and activities that are currently being implemented by different groups of people in different sectors. There are different levels even in the school setting. There is the national and it goes down the line according to the country, and that actually underscores the role of the school principals at the school level. It is the principal who is supposed to be responsible for all the initiatives that are thought of and handed down by the policies, the orders of the Ministries of Education, and the other stakeholders. The principal should be equipped not only from a technical but also from a managerial point of view to coordinate these activities. The principal should be able to provide a supportive environment at the school level so that all of these initiatives, like curricular integration or school-community relationship, can be effectively and efficiently implemented at the school level.

The other factor is when the school becomes an evacuation center, it actually creates chaos and the primary function of the school of providing education is marginalized. That is when again the managerial capacity of the principal is challenged. How do you make sure that even when the school is utilized as an evacuation center, the primary function of the school is not forgotten and the suspension of classes is shortened as much as possible?

The Chair mentioned about some researches done by TROPMED. In line with disasters, our TROPMED centers are actually involved in several researches related to disaster. For example, TROPMED Thailand is now involved in looking at the distribution of infectious diseases in terms of the density of vector, especially in the disaster-affected area. We are talking about dengue and malaria. In the Philippines, one of the consequences of flooding is an increase in leptospirosis cases and TROPMED Philippines is now very much involved in the study, provision of services, and training for leptospirosis. They have just launched Leptospirosis Control and

Prevention Center with Kyushu University, and are partly supported by JICA. Even if they are actually training academic and research institutions primarily for the Ministry of Health, they also have part of their time working for the school setting.

Sauwakon Ratanawijitrasin

Please allow me to talk about RIHED, Regional Center for Higher Education and Development. The “I” stands for Institute because before joining SEAMEO, it was an independent institution. RIHED is the only center that deals with higher education under SEAMEO. Today’s topic deals with the role of education in natural disasters from the point of international cooperation view.

I would like to propose some concrete action-based areas and see how we can collaborate. This is mostly the role of higher education, but some of the areas can also be applicable in primary and secondary school.

The first is the International Survey and Mapping of Expertise and Programs, Courses, and Research. The idea is that earthquake happens very often, very frequently in Japan, but not as frequently in Indonesia. There is the experience when to run and when not to run. Thailand does not have much experience with earthquake and we do not have volcano, we have limited experience.

Experiences exist in different places around the world. During the flood in Thailand, a number of Japanese experts came and helped the government to deal with the water. People also talked about inviting Dutch experts because a part of their country was built under the sea level. These are the experiences and the expertise that exist in different places around the world. Do we know where the courses or programs are if we need to produce larger number of graduates with advanced expertise in managing a disaster? The idea is to survey and map internationally where the expertise in different areas is. It is not only a program but also sometimes it is one course in the program which is not apparent, and we need to look into that. If it is an international program in a foreign language, can we take the course? This can be a research project with international collaboration. That is one thing.

Then, we can further expand the current movement of exchanges of students, researchers, government officers, and other officers responsible for the disaster management to acquire specific expertise depending on the disasters a country is likely to face and what needs to be learned to acquire this thing. Researchers should also do internationally collaborative projects together in different areas. That is the number two.

Number 3 is that learning from good practice should be documented. We should disseminate the knowledge based on knowledge management. During the flood in Thailand, a lot of things happened. One is the invention of a very cheap boat made from the garbage, mule and juice boxes, plastic trousers and box of paper toilet. These things can be learnt from each other internationally, when a disaster hits in one place and then one can take the knowledge to a different place to adapt.

Also, there is one thing that we should do which is knowledge management. During the flood in Thailand, we had a lot of volunteer efforts. The private sector, businesses, nongovernmental organization and nonprofit sector came together to help out but they need some management knowledge in this area so that the relief effort can be done quickly.

We can tap on the different experiences, do good practices, build it into curriculum, and make it a case study in different areas. Maybe a website can be built to list the case studies and share the knowledge internationally to help people around the world.

We need to contribute in building a knowledge society. One of the missions of higher education is to help society. Higher education is not just for the sake of education. There needs to be contribution to the society. What the education sector can do is to contribute to a knowledge society in a way that people will do things based on knowledge and then develop more quickly instead of just repeating the problem all the time.

Thailand experiences flood and drought repeatedly, but the government has been unable to utilize the money in the right manner. There needs to be a knowledge society that can better manage the funds in light of such disasters. The SEAMEO-RIHED is keen to create collaborative activities among the member

countries in the Southeast Asian region, Japan and other countries around the world so that it can contribute towards damage reduction and learning about disaster management.

Seiji Utsumi

When I was working for RECSAM, I heard one word ‘action-oriented research’ many times. I was reminded that research is not only for the sake of research but for the actions following it.

Now, the floor is open for comments and questions.

Marsigit (the State University of Yogyakarta)

My name is Marsigit from State University of Yogyakarta, Indonesia. People from university and researchers need an umbrella which provides support to do research in developing approach of lesson study about the emergency preparedness for disaster education. I want to take the learning from today’s symposium to my county and hope to collaborate with institutions around the world in the future.

Abdul Khalid Khan (Provincial Institute for Teachers Education)

My name is Abdul Khalid Khan from Pakistan. I want to congratulate the organizers of this international symposium. I feel fortunate to be a part of this symposium. I have just one comment regarding my country, which had faced two consecutive floods in 2010 and 2011 in which half of the country was flooded. I would also like to share with you that in 2005, a 7.6 magnitude earthquake hit Kashmir in which some 19,000 children died in the earthquake and 17,000 schools were totally destroyed or partially destroyed.

Since then, we have not seen any Disaster Risk Reduction and Mitigation in our country, although some NGOs are working in this regard. Today’s panelists, participants, and presenters shared very good ideas and it really helped me think how can we do such a thing in our own context to make it part of such courses and bring DRR and Mitigation in the curriculum so that children and even the community can get support because most of the areas in Pakistan are in the red zone of earthquakes and tsunami is also there.

I learned many things. I congratulate the organizers for sharing such valuable thoughts which really helped me open my mind so that I can go and share this thing with my countrymen. Thank you.

Mario Jimenez (Mexican Junior High School)

I am Mario Jimenez from Mexico. I am a teacher and an international student in Tsukuba University within the Teacher's Training Program. Because I am a teacher working with the students directly, my comments would be from the perspective of a teacher that works in a classroom every day.

I would like to first say that I think I am lucky for being here today because we always say how important the role of the school is in terms of building the society but these efforts of sharing information, constructing this way of thinking about the reality and the situations about the natural disasters is something that is going to make an impact in the communities and save lives in the future.

The comments that were made about the international collaboration effort are also important. I want to share this knowledge with my country because there is a need to develop this kind of efforts in Mexico, where there are flooding, earthquake, and volcanoes. People are used to seeing terrible images of Thailand and Japan, but such disasters can happen in any part of the world.

There should also be effort in creating either a website or a group of researchers and organization that can impart this knowledge to every teacher. If the information is not shared, it would be difficult to assess what people were actually doing in Thailand during the flooding or after the earthquake in Japan. As a teacher, it is very important to have this sense of preparedness in order to start making that change in the students.

There was a talk about the school being important and a central point in every community which is why the schools are also evacuation points that distribute help to refugees after a disaster. What should be the role of a school in terms of education, not only for our students every day in the school but also for the education of the community in general?

These topics of prevention of damage for natural disasters should be a common topic in our meetings with parent associations and how this knowledge can be passed on from the students, the communities, onto the parents about what the school can do and what is actually the responsibility of the school and teachers in order to accomplish these goals.

Seiji Utsumi

Let us now ask the panelists to respond to the questions and comments raised. I think Mariko-san raised a very good question about the role of the school. School is a place where education is conducted, and it is a central entity in the community. Also school is a place that has to protect children and within an emergency provide humanitarian assistance. In the past, education support had a low priority in emergency support. Water, shelter, food, and healthcare were the essentials to keep people alive, and support for education was given lower priority.

That used to be the case which has now changed. Building schools and creating a place for children to stay is important for security. The understanding that a school can be a base from which support can be extended is spreading. If the children can go to school, then their parents can focus on rebuilding their lives. Rebuilding schools after disaster can bring the multitude of positive impacts. What people are saying now is that reconstruction of schools after a disaster is important and it is being done in various countries.

On this point about Pakistan experiencing many earthquakes and floods, a very wide area was affected and Japanese government continues to provide support. But how we share the knowledge with all the different countries is something that needs to be thought about.

Sandra Tempongko

Let me talk about the school-community relationship which is one of the components of school health. At the school level, when the school prepares for plans for emergency preparedness and response plan, the community, the local leaders and different resources should be involved so that the response is not only just an opportunity for raising awareness about disaster preparedness and mitigation, but also involving the school in an event that a disaster or an emergency would occur.

There are also a lot of resource materials from different countries on how the different stakeholders in the school setting were able to contribute to Disaster Risk Reduction. In all the different regions,

there are a lot of good practices that are being implemented in specific schools about the contribution of the different sectors.

There is a contribution of students themselves on how they can contribute to Disaster Risk Reduction at the school level. That would answer the issue that Pakistan had about the information and the different practices. From a bigger perspective, I think if we listened to Dr. Sauwakon about systems, the knowledge management in terms of systems would also help.

Katsumi Shirahata

I want to add that for many years the most pressing priorities have been food and shelter in terms of disaster situations. But recently there has been a growing appreciation that education is just as important as food and shelter and that is why there is this inter-agency network for education in emergencies internationally..

What is being emphasized is that the normal school conditions have to be restored as soon as possible because children can never recover time lost by the school during disaster, even if some type of compensatory measures are implemented. But there is also a realization that the education can play an important role in educating the public about how to prepare for disasters, how to respond to disasters and how the school can play an important role in mobilizing and in working with the local communities to respond to disaster situations.

Sandra Tempongko

I want to add about a need for knowledge sharing within the countries and the need for documentation of the local wisdom because this is the most relevant and the most contextual for the local people.

In relation with the role of school as Mr. Mario talked, this is quite a challenge because in Southeast Asia many of schools itself are not yet a safe place. Some of the school buildings do not have proper maintenance, so how we can make a safer school and a place for the survival is the challenge.

Katsumi Shirahata

This is concerning experience in our town. After a major disaster, we have to get through the first few days or the first week. Everyone is mobilized in trying to save lives. After about 1 week

later, the city started to consider how they should mobilize local staff and came to the conclusion that the teachers should return to the schools because school is the most basic infrastructure of the community.

There was no formal teaching but teachers could take care of the children. On the 21st of April, schools of Kesennuma City restarted, and by the end of August the regular curriculum was restored. The significance of schools is quite large and it is very meaningful to relieve the parents by taking the children into the schools as the parents can dedicate their time in community rebuilding efforts, although the society questioned whether the schools should have restarted much earlier. After a major disaster, some children could not go to their schools, as the schools near the sea are damaged although inland schools were okay. Transportation and food were two major issues that we had to grapple with.

Concerning the community-school relationship, at the Kesennuma City, after some time had passed since the earthquake, school teachers were released from duties at the evacuation center and the community was asked to take care of the evacuation themselves. ESD has involved the communities and local people into schools.

Although the role of community is very important, the role of a community and schools were able to be separated and they supplemented each other. That was the positive fruit of ESD that had been conducted prior to the disaster.

Hossein Zand (Open University)

I am Hossein Zand from the Open University in England. I want to commend one of the speakers, who put the whole context of the discussion in a proper sociopolitical and economic context. In dealing with disasters it is not only just a matter of education but also a sociopolitical and an economic issue. The events that happened in Japan after March 11, 2011 were illustrative of the point that was made.

What we saw on our television screen was a nation stricken by three fundamental disasters; earthquake, tsunami and a nuclear disaster. Then what we saw was a very orderly and civilized reaction to these events. The fundamental reason for that reaction

was that this is a country run by the people and for the people, as Abraham Lincoln said.

It is a democracy where there is the rule of law and where people abide rules and regulations by the society. There are no riots or no breaking into supermarkets. In addition to educational dimension, we need societies which are run along democratic lines.

Chiang Ui-Hock (SEAMEO RECSAM)

I am Chiang from SEMEO-RECSAM. I want to thank the panel for their deep insights on the topic of discussion today. I would also like to raise a question following up from the discussion just now. How important is it for Natural Disaster Preparedness Education to be included into the formal school curriculum? If it is important, maybe the panel would like to suggest some sort of workable action plan to see this done.

Basudev Regmi (Education Training Center)

I am from Nepal. I take many advantages from this session. I will talk about an event in my country. In September 2011, the earthquake of magnitude of 6.9 Richter scale destroyed a lot of the schools, which still have not been made, and there is no education amongst the adults and the children as to how to deal with such a disaster.

Seiji Utsumi

I invite any additional comments or feedback from the panel?

Sauwakon Ratanawijitrasin

I would like to share thoughts on the question of how important it is to include the Disaster Management in school curriculum. My view is that this is very important. Children are the ones who learn and if they learn something when they are very young, the imprint grows with them. Three things can be proposed that the children need to learn. One is to let them understand what these disasters are and what their causes are. If the children understand the nature and the causes of the disaster, they can know what to do and how to prevent some of the damage that can happen. Second is how to get prepared as an individual and help others at different levels of the disasters when they grow up. The third is to have the children not only be responsive but also be a responsible citizen.

Like in the case of Thailand, the trainers should teach the children to be a responsible citizen. Say, for example, not throw things into the waterway and protect the environment.

There is a theory that with global warming there will be more frequent and stronger hurricane or typhoon. If the global warming can be stabilized, such disasters can be prevented from happening. The school education plays an important role in the growing up of the responsible and responsive citizens.

Hiromichi Ojima

I want to point out that I am working at the Kyoto University of Education and there is an affiliated primary school, in which as part of disaster prevention drills, they learn about earthquakes and other forms of disaster. They read some literature that talk about the past earthquakes and other disasters to learn the nature of disaster. Since the Great East Japan Earthquake, the interest has been mounting about disaster prevention education and there have been a series of meetings at the affiliated primary school. However, in Japan, disaster prevention education is not systemized in the form of knowledge and it is not incorporated into curriculum. The stage is not yet reached. The problem is that the teachers and the schools do not consider them as a priority agenda.

Depending on the country and region, the contents of the courses will differ and those different courses might be subject of a comparative study. Today's curriculum are formulated based on scientific thought, but that is not the only way for formulating innovative and holistic curriculums, instead the historic and social issues can be incorporated into the curriculum formulation by the problem-solving and holistic approach.

In case of the Great East Japan Earthquake, it is important to formulate the curriculum from the viewpoint of education of the earthquakes and disasters. The curriculum has to be modified accordingly and a new approach will be used in order to create a new curriculum. The secondary and the elementary school programs are to be adopted.

Based on Japan's experiences for the secondary education programs, the project-oriented curriculum formulation has been adopted by one specific private school in 1991 with the approval of

MEXT. This project-oriented curriculum could be one approach. In Japan, there is the accumulation of knowledge experiences.

I would like to further add on the relationship between school-community. Based on our own experiences, we have the “academic ability for community life” model. At the present time, there is a problem that children go out of community when they grow up and only elderly people remain in the community, which then becomes depopulated and deserted. The “academic ability for community life” model aims to solve the problem and support the community; Children come back, stay, and make efforts to prosper community life. This “academic ability for community life” has been integrated into the formal curriculum. In case of Tohoku region, there is another practice which is “composition on daily community life,” which also make use of “academic ability for community” model.

These approaches can be applied into the school education, and that is one important aspect that one needs to be paid attention to.

Sandra Tempongko

I fully agree with everyone when they say that they should integrate the learning into the curriculum. Also I fully agree with Professor Ojima, there are a lot of different approaches but real challenge is how to integrate. There are many issues and the advocates of all these issues want integration of their own agendas into the curriculum. There is preventive education of HIV, gender, cultural that is now being promoted in ASEAN. There are a lot of issues that all these champions of these different issues want integration into the curriculum. The thing that people always tell in the school is that the curriculum is full, so how do you integrate. The real challenge is to be innovative, creative, and put all these efforts in relation to these different issues together so that we do not have to change our curriculum when a new issue comes out.

There will be a gender and a rights-based issue which needs to be integrated. Everybody agrees it should be integrated but the biggest challenge is how you mainstream it in relation to all the other competing issues that also have to be integrated into the curriculum.

Katsumi Shirahata

It is extremely important for the disaster prevention education to be incorporated. I want to share my experiences in Miyagi Prefecture. In all schools, a teacher will be appointed in charge of disaster prevention and in each city there will be a staff responsible for disaster prevention. This organizational structure system will operationally start next year.

Concerning incorporation of disaster-related education into the curriculum, there are two measures in Japan. First is to incorporate it into various subjects such as arithmetic, Japanese study, science and social studies. Many studies are done for incorporation into various subjects. Secondly, there is a subject called “Period for Integrated Study”. The content of this subject is left at the discretion of the school. Each school in our City teaches disaster prevention education in this subject. There are gender, poverty, and other issues. However it is difficult to incorporate all the issues into the curriculum. However, these issues have the common aspects from the viewpoint of ESD (Education for Sustainable Development). At Kesennuma City, the focus is on one specific issue among the common aspects, and it is possible to implement them.

Rujaya Abhakorn (SEAMEO SPAFA)

I am Director of SEAMEO-SPAFA which is SEAMEO Regional Center for Archeology and Fine Arts which deals with cultural issues. I want to make two points. One is that the Disaster Management is too important to be just for the school children. The adults have to know and decide what to do. If there is no protocol or system, the children and the adults will be directionless. This is what happened in Thailand. The point is that adults, especially politicians, have to be educated. They have to know what the situation is and have a holistic picture because it does not involve just the flooding, but also the water in rice fields. This is what was found in Thailand. Some people did not know how to stop the water from accumulating their rice fields. There is a lesson in democratic country management. Some people in power are unaware that they have responsibility for the whole country and not just their constituencies. It is my people, it is for the people, but it is only my people, I do not care about your people, you can look after your

people. There are conflicts and the children know what is going on, so how can we tell them what to do if there is a conflict among adults. The point is how we deliver the message across to everybody that should be involved that the natural disaster is a big issue.

I have been involved in conservation of Council of Heritage and schools are not just classrooms. Some schools are very old established schools that have buildings that are considered cultural monuments. Their architectural style is rare. They have students who have turned into politicians, leaders, and so on. They have the history of people in the school. They have documents, photographs, furniture, and all the things that are considered as tangible cultural or documentary heritage. Some schools are also museums, archives, and libraries that have real books. All these things may perish in the disaster; the thing is how to maintain them before the disaster arrives. In conservation, everyday is a disaster. In Thailand, we have cockroaches running around. We have termites eating manuscripts in temples. We have bats living on roofs. I am not exaggerating. You can see this in the countryside. There need to be a system of maintaining what is valued against the natural environment. Everyday should be treated as a disaster. One needs to do their best to stop things from falling apart by maintaining them like it is done in Japan. The point is that it should be regarded as a national issue that involves everybody.

Secondly, we should not wait for the disaster but prevention is very important. There are people that know how to do this. United States has very good national rules about preservation in terms of best practices, studies, and protocols. It is called National Heritage Preservation that many organizations had tried to look after and they have Alliances of Heritage Conservations. Effort need to be combined at national levels and local levels. It is not just one person's or one institution's job. It is the organization.

Yokuo Morata (Kyoto Women's University)

I am from Kyoto Women's University. Dr. Sandra said that the role of the principal is quite important. Decisions made by the leaders and principals are very important. If teachers make the right decisions, they can save the students, but if they do not, one could lose many students' lives.

Training of leaders is quite important. In Kesennuma City, are the principals, head teachers, administrators, and community or village leaders trained? How should it be done based on Japan's experience?

Raymond Olfos (Catholic University of Valparaiso)

I am Raymond from Chile. One or 2 years ago, there was a tsunami in Chile for which the authorities were not well prepared. Before the tsunami, a lot of people went to the mountain. We do not have information because we did not have electricity in the moment after the earthquake. The memory of the citizens was very good. It was fantastic in that situation because we have a very good natural evacuation. But the people did not know that there were

several waves and returned after the first wave, some people returned home because they thought if they do not return, thinking that their home might get burgled, but in the event of multiple waves some people died. Each country has their own phenomenon and disasters, and they need to develop according to their necessity, but more than that there should be a sharing of ideas and experiences between different countries. This panel has floated several ideas that we did not think before coming here.

As a specialist in lesson study, this is a good opportunity to talk about and implement this idea for tomorrow, for the next day. Maybe the curriculum will not change or maybe it is a political decision to change the curriculum. But we provide the internet materials and share materials. A curriculum is a building for some kind of culture or people, but now curriculum is for all the people in the world. We need to change the curriculum and contribute towards activity.

Seiji Utsumi

I would like to elicit response from the panelists on the role of the leaders and the people who lead the county?

Katsumi Shirahata

I want to state that disasters can hit anywhere and the training should not be limited to schools or principals in charge of disaster management. Since the time spent by teachers in the school is only 25% out of 24 hours, and the time spent by children is less than 25%, school management has limited power to save the children.

Principals or other authorities should be able to act without being instructed to take action. Kesennuma City schools provide school principals, teachers, and stakeholders various training for disaster prevention in the form of lectures by experts which was found to be really useful.

Also, relationship of improvement with the community is important. Children are not necessarily at school when disasters hit. In Kesennuma City the Disaster Prevention Division and the Board of Education worked together to form the motto of “New Public Good.” To promote this motto, various initiatives on disaster-related education are undertaken by Disaster Prevention Division and the Board of Education. The local community leaders are also taking part.

Hiromichi Ojima

I want to inform that in this major earthquake the death toll of children was much less than expected. But in one particular junior high school, 70% of all the children were either dead or went missing and the majority of the teachers were victimized. This school where children were victimized was not really due to the actions and management taken by the school, but due to the geographical setting. I believe the school is not necessarily to blame for the deaths. That was one exception. For the most part, children’s lives were saved. The main reason for this was because they had drills beforehand and knew what to do.

From a management prospective, the Japanese Association for the Study of Educational Management conducted research survey at the request of MEXT, and published the papers where they found that the decision by the school principals were sound which led to save lives of children.

Miyagi Prefecture designated personnel for disaster prevention, and each school appointed a teacher who is in charge of disaster preparedness. This relates to the question of how to view the role of the school-middle leaders in schools, which almost did not exist before the earthquake. The school-middle leaders among the faculty hold another key as well. It is not just the principal. In order that the principal has to exert leadership and make the right decision, the school-middle leaders provide data and make proposals.

Seiji Utsumi

I want to conclude by saying that the Japan's school management was instrumental in minimizing the damage. I invite each panelist to wrap up comments based on the discussion.

Sauwakon Ratanawijitrasin

Disaster Management is an area where if we manage well, we save life. If we manage badly, then a lot of damage is done. We need educate the young not only with formal education but also informal education. The community should also learn about taking care of this.

We need to design education by integrating the disaster preparedness, prevention and management. This is also an area where there is a lot of room for international cooperation and to learn from each other.

Sandra Tempongko

As a concluding remark, I would like to share an article I encountered while Googling for purposes of integration in the curriculum. In the Asian tsunami of 2004, there was a 10-year-old Canadian girl vacationing in Phuket. She saw the receding water which happens before the actual tsunami, and informed her mother and other people, who went up in the higher floors of the hotel and nobody died. This was the effect of integration of disaster-related concepts in the curriculum of that girl's school.

Ismunandar

I want to reiterate that disaster education is multidisciplinary and impacts on all levels of life and not only education and I urge the educationalists to do their part in education.

Ramon Bacani

I want to share what UNESCO mentioned during the last SEAMEO High Officials' Meeting because part of it is advocacy for mainstreaming disaster risk reduction and disaster planning in education sector planning. There was a pamphlet, which stated that 'Hazards are Natural, Disasters are Not' and it merely emphasizes that certain situations after hazards become disastrous because people are unprepared or do not know what to do. This underscores the importance of education in disaster management.

Hiromichi Ojima

I want to point out that when it comes to disaster reduction or disaster management, the issue is quite important. This international symposium serves as a good forum to recognize this problem, to come up with ideas, and to approach them through interaction.

Katusmi Shirahata

I hope that I will be able to make use of the positive results coming out of this symposium and thank the panelists for insightful and fruitful comments. When I look back on the history of my country, there are not so many large scale natural disasters but in Pan-Asia there are many natural disasters and by looking into them we will be able to come up with ideas to reduce and mitigate the damage from natural disasters.

Seiji Utsumi

I want to mention that in reference with the Haiti Earthquake 2 years ago, 200,000 lives were lost. The NGO and the Japanese government provided ¥100 million and various assistance projects. The ¥100 million was spent mainly in the form of providing shelters. Over 500,000 people are still living in makeshift shelters. Japanese NGO supported basically the reconstruction of school buildings. However, the schools in Haiti are different from ours in Japan. The perimeter is very small and it is difficult to put up makeshift schools, unlike we had experienced in Tohoku region. In addition, the schools were poorly managed.

The government management itself was also extremely poor. The president itself was not appointed and it was as late as last November that a Minister for Education was appointed. In that sense, if the government and society are not solidly established and well organized, the disaster management education is not well organized. The assistance in construction of democratic society will be very important and the leadership education is also necessary.

Schools are the entities that protect the children. What actions are to be taken in order to protect the schools, as that holds that function? The schools have to be open to the community and work together with community members to protect the children. In order

to protect children, what kind of role will the principals, teachers and stakeholders be able to play? From the viewpoint of international educational cooperation, what schools are going to be reconstructed after natural disasters is another important topic.

I hope that CRICED will be able to set up another occasion to discuss this specific issue as it was a really good learning experience. I thank the panelists for their active participation and now conclude the session

Appendix

APEC Project Report in February 8th at Moscow by the Project Overseers: Dr. Maitree Inpresitha and Dr. Masami Isoda

**Emergency Preparedness Education:
Learning from Experience, Science of
Disasters, and Preparing for the Future**

*Save the Children from
Disaster*

*How can we
prepare?*

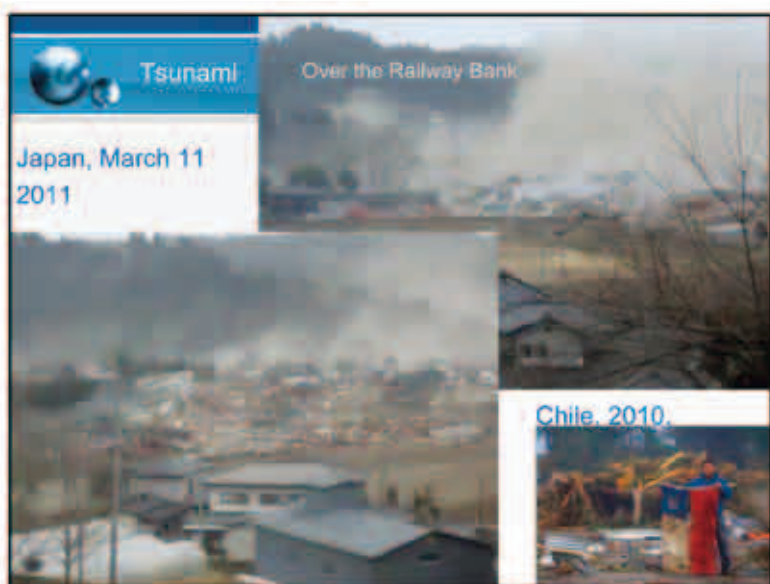
APEC HRD 04/2011a
First year for the three years project
**Proposed Economy:
Thailand and Japan**

*Let's Develop
Scientific
Knowledge*

Lesson Study for All Economies:
We adopt the methods of lesson study to Emergency Preparation

**Australia, Brunei, China, Chile, Hong Kong,
Indonesia, Japan, Korea, Peru, Philippines, Papua
New G., Russia, Malaysia, Mexico, Singapore,
Chinese Taipei, Thailand, USA, Viet Nam**
(19 economies specialists)

Lesson Study
2006: Good Practice (Pilot)
2007: Mathematical Thinking
2008-2009: Communication
NSW, Australia

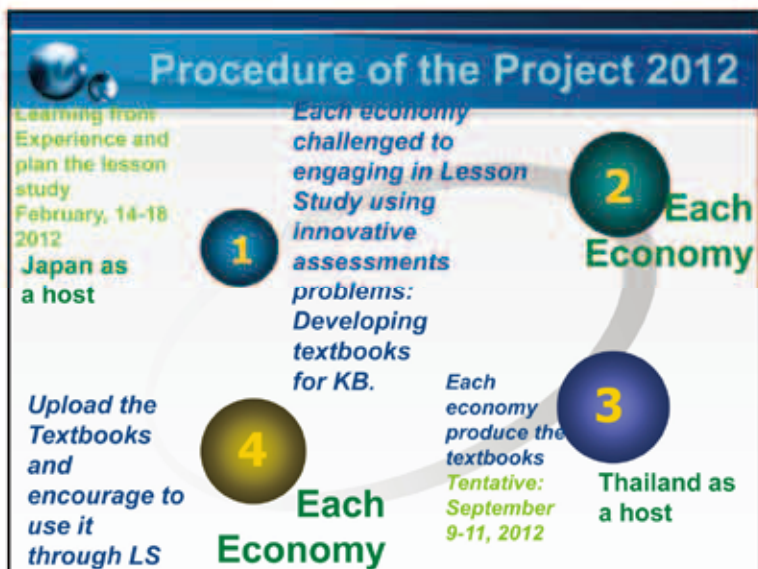







The project aims to develop the teaching program against disasters such as Tsunami and Earthquake (2012), Typhoon and Flood (2013), Fire and Volcanic Eruption (2014):

- a) Saving the school children from disasters: For the school management, the project summarizes the successful and un-successful cases to save our children during disasters with the use of visual materials and share the essential strategies of evacuations in the disasters.
- b) Sharing scientific materials which should be taught in schools: To prepare teaching programs, the project develops the teaching materials using data which is necessary to scientifically understand the mechanism and influence of disasters.





A Story which may appear in the Textbook


Parting with mother

I told "Thank you" several times and swam desperately




"Dearest mother, interesting, tender grandmother. Everyone has gone." The Sendai-kui High School first grade Saei Endo (soon to be) visited Europe for the donation activity of "the Ashinaga scholarship association" which supported the child who lost a parent by disasters. She told about hard and sad parting with her mother (35) in Paris.

"After finishing the graduation ceremony at my junior high school, I was at my house in Ishinomaki, in Miyagi prefecture, and that's when we felt the huge earthquake. The earthquake was intense but our house was 4 kilometers away from the Kitakamigawa river. I was talking to my mother, my grandmother and my great grandparents that, "The tsunamis won't come this far." Soon after that, an abnormal backward flow of river water drifted out to the house. I was thrown in to black water that smelled like gasoline. My body was stuck between hard objects and there was no way out. "I'm gonna die," I thought. But before I knew it, I had drifted with a heap of rubble and ended up on top of a storage building at the nearby Okawa elementary school. "Sayo," I heard a very familiar but weak voice. I looked into the crevice between the debris. I saw a long black hair that could even reach all the way down her back. It was my mother. She was stuck in a heap of rubble, and her leg was twisted in a disturbing position. I tried hard to help her out, but all I could do was move the debris. I was also severely injured. Some nails were stabbed into my legs and they were ripped and torn, and my back was cut and injured. The heap was surrounded by dirty water and it was freezing cold. I didn't know when the Tsunamis would hit us again. I held myself, "If I stay here any longer, I might die." I said "goodbye," and "I love you," a million times to my mother, and jumped into the water. I swam for 100 meters and reached the rooftop of an elementary school. I spent the night there, and I was rescued the day after. A few days later, My mother's body was found."

She lost grand-grandmother and a grandmother. And she left her grandfather (50) who working at Ishinomaki city office and now live alone in Sendai. On a street of Tokyo, New York, and, in Paris, an international conference of China she told about parting with her mother. It is from one thought that she does not want you to forget this disaster. "If my family lives, I may hate to talk such a story," she said without giving her name (Yomiuri Newspaper: December 25th, 2011, p.35 by Asako).



How fast Tsunami is?



Asia-Pacific
Economic Cooperation

Emergency Preparedness Education:

Learning from Experience, Science of Disasters, and Preparing for the Future

HRD 04/2011A Project: Proposed by **Japan and Thailand**

Focused on Tsunami and Earthquake: First year for three years planned projects

Managed by University of Tsukuba and Khon Kaen University



The project aims to develop the teaching program against disasters:

- Saving the school children from disasters
- Sharing scientific materials which should be taught in schools

Planning
Meeting in
Tokyo
February
2012

Plan, Do and See
with Lesson Study
Methodology

Lesson
Study
In Each
Country
March-Aug.
2012

Report Meeting
Khon Kaen
September, 2012
Finalizing e-
textbook
Tsukuba
Oct.-Dec,
2012

Around the Pacific

Tsunami climbed up
maximum 40 m height.

Chile
Indonesia

Economies

Redrawn:
Shimabara, Yagi, Matsubara, Sato and Isoda(2012).
On Project Overview, Mission Goals & Mission Implementation



筑波大学

University of Tsukuba
Japan

