PAE Tools of Pacific / Indian Ocean
Developing Systematic Approach to Tsunami PAE tools

Laura Kong
Director
International Tsunami Information Center
UNESCO/IOC – NOAA
Global Tsunami Warning & Mitigation System

- **UNESCO IOC: Tsunami Warning and Mitigation Systems**
  - 1965 (after 1960 Chile): ICG/PTWS (est PTWC, ITIC)
  - 2005-06 (after 2004 IO): ICG/CARIBE-EWS, IOTWS, NEAMTWS

- **Warning Centers advise countries:** PTWC, WC/ATWC, JMA

- **Information Centers support ICGs to build end-to-end systems (Hazard / risk - Warning / response - Preparedness)**
  - 1965, for PTWS:
    ITIC (Hawaii), supported IOTWS, CARIBE-EWS
  - 2006, for Indonesia: JTIC (Jakarta)
    2012 expand to IOTWS
  - 2011, for NEAMTWS:
    NEAMTIC (Paris)
  - 2012, for CARIBE-EWS:
    CTIC (Barbados) with ITIC, CTWP
Altogether, > 2400 reported tsunamis from 1410 BC – AD 2012, of which 279 were fatal.
ICG / PTWS - Scope

- **46 countries**
  - ~12 time zones
  - 5 languages (UN - English, Spanish, French, Chinese, Russian, ...)
  - Tsunamis from Pacific Ring of Fire – everywhere
  - Majority of observed tsunamis globally
  - Local warning: 2007 Solomons, 2009 Samoa
    Pacific-wide: 2010 Chile, 2011 Japan

- **Focus on Local Tsunamis**
  (cause 99% of deaths, 90% global)
  - Sub-regions based on hazard and risk
    (Central / South America, SW Pacific, S China Sea)
  - Community Preparedness - Education and Awareness
  - Identify Tsunami Hazard Zones and Evacuation
  - Emergency Response Plans and Procedures
  - International and National Tsunami Exercises
Call for Action

26 December 2004
230,000 dead, 500,000 injured, 1 million displaced, $8 billion in damages

“We cannot stop natural calamities, but we can and must better equip individuals and communities to withstand them.”

UN Secretary-General Kofi Annan

“Anticipating, educating and informing are the keys to reducing the deadly affect of such natural disasters. Unfortunately such activities have not been given priority.”

UNESCO Director-General, Koïchiro Matsuura, 3 January 2005
Call for Action

HFA:
5 Priority for Action… at least…
14 Key Activities out of 37

Build Understanding and Awareness
Provide Information
Formal and Informal Education
Invaluable Local Knowledge
Public Awareness

Priorities for Action

1. Ensure that disaster risk reduction (DRR) is a national and a local priority with a strong institutional basis for implementation
   - DRR institutional mechanisms (national platforms); designated responsibilities
   - DRR part of development policies and planning; sector wise and multisector
   - Legislation to support DRR
   - Decentralisation of responsibilities and resources
   - Assessment of human resources and capacities
   - Foster political commitment
   - Community participation

2. Identify, assess and monitor disaster risks and enhance early warning
   - Risk assessments and maps, multi-risk, elaboration and dissemination
   - Indicators on DRR and vulnerability
   - Data & statistical loss information
   - Early warning; people centered; scientific and technological development and sharing spaces; based earth observation; climate modeling and forecasting; early warning
   - Regional and emerging risks

3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels
   - Information sharing and cooperation
   - Networks across disciplines and regions; dialogue
   - Use of standard DRR terminology
   - Inclusion of DRR into school curricula, formal and informal education
   - Training and learning on DRR: community level; local authorities; targeted sectors; equal access
   - Research capacity; multi-risk; socio-economic; application
   - Public awareness and media

4. Reduce the underlying risk factors
   - Sustainable ecosystems and environmental management
   - DRR strategies integrated with climate change adaptation
   - Food security for resilience
   - DRR integrated into health sectors and safe hospitals
   - Protection of critical public assets
   - Recovery schemes and social safety-nets
   - Vulnerability reduction with diversified income options
   - Financial risk-sharing mechanisms
   - Public private partnership
   - Local use planning and building codes

5. Strengthen disaster preparedness for effective response at all levels
   - Disaster management capacities; policy, technical and institutional capacities
   - Dialogue, coordination & information exchange between disaster managers and development sectors
   - Regional approaches to disaster response; with risk reduction focus
   - Review & and exercise preparedness and contingency plans
   - Emergency funds
   - Volunteer & participation
Preparedness

...is the clue to cope with Tsunamis

...builds on knowledge about the natural hazard and the vulnerability towards it

Prepared people and communities will know how to react to Early Warning and have plans ready for evacuation and emergency response
End-to-End Tsunami Warning

EQ Tsunami

Country Alert System

Emerg Alert System & Mass Media

Natl / Provincial / Local Govt

Public

TSUNAMI WARNING! EVACUATE

ITIC, SeismicReady Consulting 2009, after Japan Cabinet Office
Building Preparedness - Consider

- **Culture**: requires sensitivity to develop understanding and approaches that is build based on local culture, beliefs and practices

- **Programmatic**: requires solid consultation approach and continued commitment by all stakeholders to be sustainable

- **Locality**: requires use of location context / hazard and language effectively to assure clear understanding and good communication

- **Diversity**: requires knowledge on the structure of the community and society
Traditional knowledge

2004 Tsunami in Simeulue Island

Displaced coral of 1907
A Smong Monument

Tsunami Dec. 2004
7 out of 78,000 95% live in coastal

Smong = earthquake + receding water + tsunami
The long-term traditional knowledge can be powerful for Awareness and preparedness

but, not enough
Education: What, Who

- **Formal**
- **Structured**
- **Standards**
- **Science-based**

Curriculum

Content, Language
age-appropriate
Teaching Materials

- **Targets:**
  - Schools: Elementary, Primary, Secondary, High
  - Out-of-school, Home-school children
  - Adults – may be non-formal education program
  - Individuals
  - Professional
  - Special needs - Disabled Children / Adults
Education: Formal

Books
Teaching Materials

Lower Level Elementary
Older Level Elementary
Junior High School

Earthquake and Tsunami
Information and Resources for Schools
Surviving Great Waves of Destruction

Earthquakes and Tsunamis
Pre-Elementary School Textbook

Earthquakes and Tsunamis
I Invite You to Know the Earth I
5th to 8th Grade of Preparatory School

Earthquakes and Tsunamis
I Invite You to Know the Earth II
Text for Elementary School 2nd to 4th Grade

Washington Military Department
Tsunami Mitigation Program

National Tsunami Hazard Mitigation Program
Formal Education – Embed in Curricula

New Zealand

CONTENTS

Section 1 - Introduction
1. Welcome to What’s the Plan Stan?
2. The four Rs of emergency management

Section 2 - Unit plans and activities
3. Unit Plans, activities and related cross-curricular lessons
4. Disaster activities and homework sheets
5. Disaster fact sheets

Section 3 - Roles, simulation and practice activities
6. Roles
7. Simulation and practice activities

Section 4 - Templates and other resources
8. Templates
9. Other resources
10. Glossary

What’s in this resource?
This resource has three components, each of which can be used independently or in conjunction with each other:
• A guide for teachers, including unit plans and activities.
• A CD–Rom for teachers and students, including stories, interactive games, research material, tips for teachers and resources that can be cut and pasted into unit plans.
• A poster promoting What’s the Plan Stan?

Using the resource
The resource can be used to incorporate civil defence emergency management contexts and activity–based learning across all areas of the curriculum. It focuses on four essential skills:
1. communication skills
2. information skills
3. problem–solving skills
4. social and co–operative skills.

“Disasters can strike at any time, and often without warning. Will you and your students know what to do when disaster strikes?”
**Formal Education – Embed in Curricula**

**New Zealand**

### Tsunami activities and homework ideas

<table>
<thead>
<tr>
<th>Junior</th>
<th>Classroom activities</th>
<th>Middle</th>
<th>Senior</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Discuss with class:</td>
<td>1. Discuss with class:</td>
<td>1. Discuss with class:</td>
<td>1. Discuss with class:</td>
</tr>
<tr>
<td>• What is a tsunami?</td>
<td>• What is a tsunami?</td>
<td>• What is a tsunami?</td>
<td>• What is a tsunami?</td>
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<tr>
<td>• Are tsunami likely where we live or go to school?</td>
<td>• Are tsunami likely where we live or go to school?</td>
<td>• Are tsunami likely where we live or go to school?</td>
<td>• Are tsunami likely where we live or go to school?</td>
</tr>
<tr>
<td>2. Help students to identify on a map the nearest high ground in the area (over 35m above sea level). If there is no high ground, identify the safest route inland (at least 1km inland).</td>
<td>2. Ask students to draw a map of the area around the school and to draw the nearest high ground (over 35m above sea level). If there is no high ground, draw the safest route inland (at least 1km inland).</td>
<td>2. Give students the following choice of topics to research:</td>
<td>2. Give students the following choice of topics to research:</td>
</tr>
<tr>
<td>3. Discuss what to do if they hear a tsunami warning.</td>
<td>3. Discuss what to do if they hear a tsunami warning.</td>
<td>• What is a safe place during a tsunami?</td>
<td>• What is a safe place during a tsunami?</td>
</tr>
<tr>
<td>4. Practise a tsunami warning, and walk as a class to the identified safe point.</td>
<td>4. Discuss what to do if they feel a strong earthquake and they are at the beach.</td>
<td>• Where are our local safe places?</td>
<td>• Where are our local safe places?</td>
</tr>
<tr>
<td></td>
<td>5. Practise a tsunami warning, and walk as a class to the identified safe point.</td>
<td>• What heroic deed did British schoolgirl Tilly Smith do during the 2004 Indian Ocean tsunami?</td>
<td>• What heroic deed did British schoolgirl Tilly Smith do during the 2004 Indian Ocean tsunami?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• What is the difference between distant, regional and local source tsunami, and how should we respond to each?</td>
<td>• What is the difference between distant, regional and local source tsunami, and how should we respond to each?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• What is our school’s tsunami plan?</td>
<td>• What is our school’s tsunami plan?</td>
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### Homework ideas

<table>
<thead>
<tr>
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<th>Homework ideas</th>
<th>Middle</th>
<th>Homework ideas</th>
<th>Senior</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ask an adult at home if a tsunami could affect your house.</td>
<td>1. Decide with an adult at home if a tsunami could affect your house.</td>
<td>1. Decide if a tsunami could affect your house.</td>
<td>1. Decide if a tsunami could affect your house.</td>
<td></td>
</tr>
<tr>
<td>2. Identify with an adult the nearest high ground or the safest route inland from your house.</td>
<td>2. Draw a map of the area around your house, showing the route to the nearest high ground or the safest route inland.</td>
<td>2. Does your house have an emergency plan for tsunami?</td>
<td>2. Does your house have an emergency plan for tsunami?</td>
<td></td>
</tr>
<tr>
<td>3. Go for a walk with your family</td>
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</tr>
</tbody>
</table>

### Emergency response practice

**Activity**

- Emergency response practice
- Evacuation exercise
- Disaster simulation

**What happens**

- Students practise their immediate response to a specific type of disaster.
- Parents, caregivers or authorised people collect students from school.
- Students role-play agencies, casualties and the public in the response to a disaster striking a mythical town.

**Scheduling**

- This simulation could take place at any time throughout the year, and should be repeated in different situations, such as the classroom, assembly, lunch-time and so on.
- This can take place at any time in the year. It could also be incorporated into, or at the end of, the What’s The Plan Stan unit to encourage parents and caregivers to evaluate their own preparedness.
- This is the biggest of the three activities. It is recommended that this come at the end of the What’s The Plan Stan units of work (so that students can test their knowledge and preparedness for an emergency) and that it is carried out as a school exercise. It would also be particularly suitable as an EOTC activity for school camps.

**Emergency response practice**

The aim of the emergency response practice is to ensure that students are familiar with the immediate action to take to keep them safe in a disaster.

This practice should focus on the type of disasters most likely to strike the school.
Formal Education – Embed in Curricula

Chile / ITIC
Textbook
Teacher’s Guide
Table of Contents

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- Background information for teachers
- Understanding tsunamis
- How a tsunami behaves in deep and shallow water
- Distant tsunamis generated in the Pacific Basin
- Cascadia Subduction Zone Earthquake – Washington's local tsunami source
- Earthquakes in Washington state
- Landslides in Washington also cause tsunamis
- How do you know a tsunami is approaching?
- What to do when a tsunami occurs?
- What you can do to protect yourself from a tsunami

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- Facts about earthquakes, a common cause of tsunamis
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- Subduction zone earthquakes
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- Online learning resources

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- Tsunami! Move to high ground! Life saving knowledge
- What to do after a tsunami
- Key points to remember
- Online learning resources

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Education: Informal

Comics
Toys & Games
Video, CD, DVD Rom
Education: How

Classroom – Schools
One-on-one teaching
Train-the-Teacher
Special Meetings; youth groups
Drills & Exercises

This 1-day awareness course provides a basic understanding of tsunamis, hazard assessment, warning and dissemination, and community response strategies to effectively reduce tsunami risk. An effective tsunami warning system is achieved when all vulnerable coastal communities are prepared to respond appropriately and in a timely manner upon recognition that a destructive tsunami is approaching. The system requires round-the-clock monitoring by warning centers and a well-coordinated emergency response by all stakeholders to rapidly alert an already-educated public.

Course modules cover science and assessment tools used to build tsunami resilient communities, the tsunami detection and warning process, and the products and methods used to warn all levels of government and coastal communities. Effective response requires pre-event planning and preparation to ensure that the public knows what to do and where to evacuate before destructive waves arrive, and that afterward, everyone knows when it is all-clear and safe to return.

**Course Objectives**
- Explain differences between local and distant tsunamis.
- Discuss what scientists learn from historic records and the importance of indigenous knowledge in tsunami preparedness.
- Learn the purpose, scope, and goals of tsunami modeling.
- Describe tsunami warning information and how tsunami warning centers work.
- Describe the warning process and how it reaches the last mile on the coast.
- Describe types of tsunami messages.
- Link tsunami hazard assessment tools and methodology and warning processes to preparedness and mitigation options.
- Evaluate need for vertical evacuation. Discuss considerations for land use planning.
- Discuss techniques for outreach and education to increase public reaction to warnings.
- Summarize local and distant tsunami responses and identity how to improve response.
- Summarize the end-to-end tsunami warning system.
- Use warning center messages in a scenario to identify community response actions.

**Modules**
- Science and hazard assessment.
- Tsunami Warning and Response.
- Preparedness and Mitigation.
- End-to-end Tsunami Warning.

Min/Max Enrollment: 25-30
Length: 6 hours
Prerequisites: None

**Target Audience**
- Tsunami Warning Centers
- Disaster Management Officials
- First Responders
- Law Enforcement
- Emergency medical services
- Hazardous materials personnel
- Coastal zone/managers
- Planners/Developers
- Public Utilities
- Public Health
- Non-government organizations

This international course was developed by the UNESCO/IOC, NOAA/IITC, Schmidt/National Ocean, and the NOAA Pacific Environmental Laboratory, with funding assistance and cooperation from the U.S. National Tsunami Program, UNISDR (United Nations International Institute for the Prevention of Natural Disasters).
Public Awareness : What, Who

- Informal
- Public Education and knowledge building
- Mass dissemination
- General disaster preparedness (All-hazards)

Targets:
- Public
- Targeted Communities, hotels and tourism (multi-lingual), Industries.
Awareness: Materials

- Booklet
- Flyers
- Newsletters
- Posters
- Stickers
Awareness: How

- Community Meeting and Workshops
- Assemblies & Special Meetings
- Toys & Games
- Drills, Simulations, Exercise
- Publications, Media (Printed and Electronic)
- Exhibitions: Fairs, booths, displays
- Disaster Commemoration
Tsunami Drills - Malaysia

Tuaran, Sabah – Mei 2006

Pantai Cenang, Langkawi (28 January 2011)
Sri Lanka – Tsunami Signs

1. Evacuation Shelter
2. Evacuation Route
3. Tsunami Zone

4. 26.12.2004
Tsunami Water Level

5. Sri Lanka – Tsunami Signs
Outreach: What, Who

- Technical / Professional Knowledge Building

- Targets
  - Schools and Communities
  - Industries and businesses—factories, hotels & tourism, Planning
  - Government /Responders – what, how
  - Private sector: Infrastructure (utilities, transportation, lifelines); Small business (contingency plans); Engineers/building design guidance
  - Media
International - ITIC / IOC
Tsunami Awareness materials
Customizable Awareness Materials

- **Tsunami: The Great Waves (1975)**
  - Global phenomenon - Indian Ocean
  - Comprehensive tsunami mitigation: hazard risk assessment, warning guidance, preparedness and education
  - Customize with stories, graphics, photo

- **Tsunami Warning! (1991)**
  - Children’s book on tsunami response
  - Customize source
  - Customize national/local response

- **Tsunami Safety Poster / Rules (1970s)**
  - Customize story, photos

- **Tsunami Glossary (1990s)**
  - Tsunami-related terms
  - classification, characteristics, measurement, surveys, instruments, governance, warning, mitigation
Tsunami Warning!

- English, Spanish, Indonesia, Thai, Sri Lanka, Maldives, Mozambique
- Sources: Alaska, Indonesia, Chile
Tsunami Warning!

- Text, Graphics separate objects
- Easy delete, replace

The tsunami on its way to Hawaii is made up of a series of very long waves. A tsunami is made up of many individual waves that can keep hitting the shore for hours.

Waves can be 200 km apart. The speed of the tsunami depends on the depth of the water. In very deep water, the waves travel as fast as a jet plane at up to 800 km/h.

Also Tsunami: The Great Waves, Tsunami Glossary, Tsunami Safety Poster
Customizable Awareness Materials
Tsunami safety poster

- Template - national or local safety posters
- Customize - local languages, photos, graphics
- Standard set of information for public

- What is a tsunami
- Natural tsunami warning signs
- What to do
- More info
Customizable Awareness Materials

Tsunami safety poster

Customize:
26 Dec 2004 stories, pictures, readiness
Sustainability

*Remember...*

Long intervals between tsunamis, so education must be *constant, consistent* and *accurate.*
Materials Adaptation and Development: The process

Gap Analysis
- Materials selection
  - International, National, Local, NGO
  - Consultations
- Translations,
  - Adaptation to
  - Language, culture, environment
  - Local context
- Formats
  - Print, Electronic, Oral, Story, Video, Song
  - Mobile / Social Networks

Targets and Priorities
- Distribution
- Printing

Expert Meetings to improve and finalize contents and layouts

Pilot Materials Testing
- (Readability and Utilization of materials)

Socialization
- Utilization and Promotion of materials

Media
- Widespread broadcast
- Build Awareness

Lessons Learned
- Update with new information
- Adaptation

Targets and Priorities
- Distribution
- Printing

Socialization
- Utilization and Promotion of materials

Media
- Widespread broadcast
- Build Awareness

Lessons Learned
- Update with new information
- Adaptation
Community Preparedness collaborative system

Functioning Public Education Practitioners & Promoters
- Facilitation & moderation
- Disaster management plan
- Evacuation strategy
- Standard operational procedures
- Disaster Decision Support System
- Early warning
- Facilitation & advocacy

Functioning Scientists
- Curriculum & materials development
- Innovations
- Translations
- Forecasts
- Research
- Models
- Assessments
- Studies

Functioning Community
- Disaster resilient integrating DMO, schools and coastal communities
- Sustainable economic livelihood
- Environment Management Practices

Functioning Disaster Management Officials

Rafliana, I. 2008
Adapting Materials

Gap Analysis

What exists
Following 2004 tsunami, a lot of effort was put not only into developing tsunami early warning systems but also into community preparedness.

A number of awareness, preparedness and education tools and materials were developed through various activities by national and international institutions.

Some of these materials are now out of print and some are only available in electronic copies.
The Depositories

This book consists of eight categories

- **Book**
- **Booklet**
- **Comic**
- **Sticker**
- **Poster & Leaflet**
- **CD/DVD**
- **Game**
- **Other**
## Content

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<td>159</td>
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| Total Titles: 255 |

- **Book**: 67 titles
- **Booklet**: 14 titles
- **Comic**: 26 titles
- **Poster/Leaflet**: 48 titles
- **Sticker**: 4 titles
- **CD/DVD**: 41 titles
- **Game**: 11 titles
- **Other**: 24 titles

- **Indonesia**: 238 titles
- **Thailand**: 5 titles
- **The Philippines**: 12 titles

- **20 Institutions**: Government NGOs, INGOs
Regional Workshop
Lessons Learned on Tsunami Awareness and Education Materials Adaptation and Development
Jakarta, 19-21 July 2011

Lessons Learned in Materials Development and Adaptation
Country Cases: Philippines, Indonesia

Mylene Martinez-Villegas
Philippine Institute of Volcanology and Seismology (PHIVOLCS)

Irina Rafliana
Indonesia Institute of Sciences
Lembaga Ilmu Pengetahuan Indonesia (LIPI)
Materials Adaptation and Development: The process

- Gap Analysis
  - Materials selection
    - International, National,
      - Local, NGO
    - Consultations
- Translations,
  - Adaption to
    - Language, culture,
      - environment
  - Local context
- Formats
  - Print, Electronic, Oral,
    - Story, Video, Song
  - Mobile / Social
    - Networks
- Production
  - Printing, Distribution
  - Targets and Priorities
- Expert Meetings to improve and finalize contents and layouts
- Pilot Materials Testing
  - (Readability and Utilization of materials)
- Socialization
  - Utilization and Promotion of materials
- Media
  - Widespread broadcast
    - Build Awareness
- Lessons Learned
  - Update with new information
  - Adaptation
To date:
> 200 education materials developed by
> 40 organizations in Indonesia

Indonesian “Sesame Street”: EQ education
Adaptation process, materials selection

- Consultation meetings (June-July, October-Nov)
- Involvement of PHIVOLCS field stations
  - Mindanao: Dipolog, Zamboanga, Davao, Kidapawan, GenSan, (1976 Earthquake and Tsunami, Mindanao)
  - Luzon: Manila, Ilocos,
- PHIVOLCS internal meeting for self assessment
- Involvement of partners:
  - Govt agencies (OCD, DepEd-MO, DepEd NCR, DepEd-Pagadian, DepEd-Malabon/Navotas),
  - Local govt units (Pagadian City, Navotas City)
  - NGOs (Plan, Accord, CDP, etc)
Consultation Meetings with DepEd NCR

12 October 2010

20 October 2010

19 October 2010
SELECTION PROCESS - PHILIPPINES

- **Key message**
- **Inventory of all** information materials currently available in the country
- **Assessment** as to which existing information materials answer to the key messages
- **Identification of current gaps** in materials (age-appropriateness, culture-sensitive, gender-sensitive, Persons with special needs)
Materials Adaptation and Development: The process

- **Gap Analysis**
  - Materials selection
  - International, National, Local, NGO Consultations

- **Translations,**
  - Adaption to Language, culture, environment
  - Local context

- **Formats**
  - Print, Electronic, Oral, Story, Video, Song
  - Mobile / Social Networks

- **Production**
  - Printing, Distribution
  - Targets and Priorities

- **Expert Meetings to**
  - Improve and finalize contents and layouts

- **Pilot Materials Testing**
  - (Readability and Utilization of materials)

- **Socialization**
  - Utilization and Promotion of materials

- **Media**
  - Widespread broadcast
  - Build Awareness

- **Lessons Learned**
  - Update with new information
  - Adaptation
Indonesia materials translated to Filipino

Earthquake Safety for Deaf (11-page flashcards)
Tsunami Glossary – Adapted and Updated to Local Context (Indonesia and Indian Ocean)

INDONESIA
• Reviewed after being translated to bahasa
• Updated due to events post tsunami 2004
• Re-edit terminologies
• Integrate recent update including national organizations
• Integrate recent updates in InaTWS and IOTWS
• Tested to schools, and government official

PHILIPPINES
Tsunami Teacher – Adapted and Updated to Local Context (Indonesia and Indian Ocean)

INDONESIA
• Reviewed after being translated to bahasa
• Updated due to events post tsunami 2004
• Re-edit terminologies
• Integrate recent update, e.g. Ministrial Circular Letter to Mainstream DRR to Education System
• Insert updated modules
• Integrate recent updates in InaTWS and IOTWS
• Tested to schools, media and government official

PHILIPPINES
### Materials Produced:

**Material 1: Guidebook on How to Conduct Self-Evacuation at Schools for Earthquake and Tsunamis**

Adapted from: Philippines

Produced: 1300 copies

<table>
<thead>
<tr>
<th>Users</th>
<th>Content</th>
<th>Trade-offs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers, students, schools community. May be adapted for community drills</td>
<td>How to conduct school drills</td>
<td>Users may need further training</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Users may need certain / basic requirements to implement the guidebook</td>
</tr>
</tbody>
</table>
### Materials Produced:

**Material 2: Surviving from Earthquake and Tsunamis**

Adapted from: California, USA

Produced: 1300 copies

<table>
<thead>
<tr>
<th>Users</th>
<th>Content</th>
<th>Trade-offs</th>
</tr>
</thead>
<tbody>
<tr>
<td>General public, households, teachers</td>
<td>When and how should community respond to natural (earthquake) and official warning (InaTWS)</td>
<td>There are specific natural warning signs Needs complementary materials</td>
</tr>
</tbody>
</table>
Materials Produced:

Material 3:

Adapted from: Washington, USA

Produced: 500 copies

<table>
<thead>
<tr>
<th>Users</th>
<th>Content</th>
<th>Trade-offs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector: Media</td>
<td>How electronic media understand warning products and responds to the information in order to save more lives</td>
<td>Need complimentary training and materials</td>
</tr>
</tbody>
</table>
Awareness Materials – Adaptation and Development Process

- **Gap Analysis**
  - Materials selection
  - International, National, Local, NGO
  - Consultations

- **Translations,**
  - Adaption to Language, culture, environment
  - Local context

- **Formats**
  - Print, Electronic, Oral, Story, Video, Song
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  - Printing, Distribution
  - Targets and Priorities

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  - (Readability and Utilization of materials)

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  - Build Awareness

- **Lessons Learned**
  - Update with new information
  - Adaptation
Children Science Support
Indonesian Institute of Sciences (LIPI)

What

Educational Flip Chart/ Flip Board with one large picture/text in one side, and additional information in the other side to help users explain certain topics related with tsunami preparedness for children

Why

Need for handy education tools for children, easy-to-use anywhere, anytime

How to Use

Open each page, large fonts/pictures facing audience (children), Explain and elaborate information based on the opposite page of the flip chart
Other education tools: the Earthquake Simulation
Other education tools: Giant Game Pad: Pioneer Rescuer
Awareness Materials – Adaptation and Development Process

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Awareness Materials – Adaptation and Development Process
Field Testing (Readability),
Aceh August 2010, Bantul October 2010
Awareness Materials – Adaptation and Development Process

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Materials selection
International, National,
Local, NGO
Consultations

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Language, culture, environment
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Build Awareness

Lessons Learned
Update with new information
Adaptation

Awareness Materials – Adaptation and Development Process
PRODUCTION

• Translation
• Review of translations
• Revisions
• Pilot/ pre-testing
• Revisions
• Final approval
• Printing

Working group-
PHIVOLCS, OCD, DepEd, Plan, CDP
Review and edit the translations
Awareness Materials – Adaptation and Development Process

**Gap Analysis**
- Materials selection
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**Socialization**
## Promotion of materials

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 Jan 2011</td>
<td>Teachers’ Training-Pagadian City</td>
<td>ES teachers</td>
</tr>
<tr>
<td>26 Jan 2011</td>
<td>Teachers’ Training-Pagadian City</td>
<td>ES teachers</td>
</tr>
<tr>
<td>27 Jan 2011</td>
<td>Teachers’ Training-Pagadian City</td>
<td>HS teachers  Hangop</td>
</tr>
<tr>
<td>15 Feb 2011</td>
<td>Teachers’ Training Malabon-Navotas</td>
<td>ES teachers</td>
</tr>
<tr>
<td>18 Feb 2011</td>
<td>Daycare Workers: Navotas</td>
<td>Daycare workers</td>
</tr>
<tr>
<td>7 April 2011</td>
<td>Press Conference</td>
<td>Print/ broadcast media</td>
</tr>
<tr>
<td>5 May 2011</td>
<td>Navotas City  Local Govt officials and Community</td>
<td>Community leaders, City</td>
</tr>
</tbody>
</table>
Training for teachers, daycare workers and Navotas LGU
Utilization of materials

2 March 2011
Barangay Sipac Day Care Center, Navotas
Socialization of Materials 1 and 2, Tsunami Glossary and Tsunami Teacher in Buleleng, Bali
8-12 July 2011
Gap Analysis
Materials selection
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Local, NGO
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Update with new
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Adaptation
PHILVOLCS training equip teachers to communicate tsunami hazards

by Gideon C. Corgue

The Philippine Institute of Volcanology and Seismology (PHIVOLCS) in cooperation with the Department of Education, United Nations Educational, Scientific and Cultural Organization (UNESCO) and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) organized a 3-day teacher’s training on Learning to Communicate Tsunami and Tsunami hazards last January 25-28 at Bay Plaza Hotel here.

PHIVOLCS Director Renato U. Solidum Jr. said the training is designed to equip teachers in learning to communicate Tsunami hazards by providing innovative earthquake and tsunami information materials.

In the training, teachers were instructed on how to effectively convey the information materials to their students.

“It empowers teachers to effectively convey the information materials to their students,” Solidum said.

By ELLALYN B. DE VERA

Tsunami awareness measures in schools pressed

The Philippine Institute of Volcanology and Seismology (PHIVOLCS) urged yesterday local communities and schools to carry out tsunami awareness measures for proper tsunami response and community preparedness in the event of a tsunami.

“I have been to places where community preparedness is very evident with almost 50 percent of the population disseminating information to people should a tsunami generated by strong earthquakes occur,” PHIVOLCS Director Renato Solidum Jr. said.

Those in the provinces and even those differently-abled persons are very eager to conduct drills and disseminate information on tsunami. It is important for people to be prepared, even though we do not expect that a large-scale tsunami is expected to approach any time soon,” he added.

Solidum pointed out that the local government and people must work hand-in-hand to have an effective approach in the event of a tsunami.

PHIVOLCS noted that one of the most significant tsunami incidents in the country was on Aug. 17, 1996, where a magnitude 7.8 earthquake off Moro Gulf generated tsunami waves of up to nine meters.

About 3,700 people were reportedly killed, while 8,000 were injured, due to the tsunami.

In 2010, the Philippines through a partnership with the United Nations Educational, Scientific and Cultural Organization-Jakarta (UNESCO-Jakarta), and country-partner Indonesia, Thailand, and Timor Leste started to exchange and share available information materials developed in each country for the benefit of more people.

Solidum said the ongoing project resulted in the adaptation and translation of PHIVOLCS’ five educational materials on tsunami preparedness.

These are the teaching guides for the Philippines and Indonesia.

“Aha!...Ngayon Alam ko na, mga 11 dapat gawin kapag may lindol! Talahabang magaganap Tsunami! (Tsunami Glossary); Tsunami Teacher DVD; Tsunami Sticker; and an 11-page flashcard type “Aha!...Ngayon Alam ko na and mga 11 dapat gawin kapag may lindol.”

Solidum noted that the visual aids can be used anywhere, not only in schools but even in barangay halls in most far-flung areas.

The project has funding support from the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) amounting to US$70,000 or P3 million.

A significant improvement in the tsunami awareness materials is its translation to from English to Filipino, as well as local dialects, such as Ilocano, Bicolano, Maguindanaoan, Cebuano, Ilonggo, and Waray.
Lessons Learned – Philippines, Indonesia

- **Reality of translating English** to local language (length longer)
- **Consultation important**, inputs during selection, translation, promotion, distribution => Takes time
- **Adapting** = adjust to local context & keep consistent message
- **Simple, specific message, colorful illustrations**, less text; Minor modifications in design to suit local understanding => Effectively communicate science to layman
- **Format Appropriate to Local context** - schools in rural coastal area have no power/electricity, no hardware => flash cards, not DVD
- **Site-specific, audience-specific** (teachers, daycare workers, local officials, media) program content/ training session
- **Coordination with government agencies**, schools (different levels of Dept Educations from national to local), Local Govt
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**Note:**
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- Media Widespread broadcast Build Awareness
- Lessons Learned Update with new information Adaptation
Thank You

Laura Kong
Director
International Tsunami Information Center
UNESCO/IOC – NOAA