ITIC New Training Course on Essential Tsunami Preparedness: Evacuation plans, Maps and Procedures

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Outline

- Background and Motivation
- Course Goals and Deliverables
- Inundation Modelling and Evacuation Maps – what, why, when
- Course Pilot Planning – Next Steps
PTWS Vision:
“A modern and effective tsunami warning and mitigation system based on member State participation. As a result, PTWS Member States are aware of the tsunami threat, work to reduce risk, and are prepared to act to save lives.”

Three Pillars:
1. Risk Assessment and Reduction
   - Hazard and risk identification and risk reduction
2. Detection, Warning and Dissemination
   - Rapid detection and warning dissemination down to the last mile
   - National, Regional and Ocean-wide warning system
3. Disaster Management and Preparedness
   - Public education, Emergency planning and Response
PTWS WG3 – Disaster Management and Preparedness

- Chair: David Coetzee, NZ MCDEM
  Vice-Chair: Julie Leonard, USAID/OFDA

- 2013-2014 Activities
  - Focus on the PTWC New Products (Oct 1 start) - Training & SOP development to strengthen response capabilities
  - Exercise Pacific Wave 2015 (February 2-5) - test New Products
  - Align with TOWS TT Disaster Management and Preparedness Activities
TOWS Inter-ICG Task Team on Disaster Management and Preparedness

- Two reps from each ICG, 1 should be ICG TIC Chair: David Coetzee, NZ MCDEM

- 2014 Activities (from Feb 2014 meeting)
  - Finalize SOP Manual (ITIC and IOC since 2008)
  - Compile reference list of tsunami evacuation mapping material, and develop a template for comprehensive mapping guidelines
  - Promote education and awareness strategies as well as ‘Tsunami Ready and Tsunami Smart’ type programmes (CARIBE-EWS initiatives)
  - Finalize tsunami guide for hotels (NEAMTIC, ITIC)
  - Finalize Post Event Performance Survey (ITIC, TICs, TOWS TT TT Watch Operations)
PTWS steering committee (July, 2014) endorsed working group 3 (disaster mgmt and preparedness) recommendation:

Following 1 October 2014 New Products start, the next PTWS priority focus is preparedness

- Communities must know what to do and where to go upon when a tsunami will attack
- ITIC capacity building proposal - Evacuation
3A.6: The NTWC/NDMO has a tsunami mass coastal evacuation plan.

38 countries responded

- Yes: 52.63% (20)
- No: 42.11% (16)
3B.6: Communities have tsunami evacuation maps, routes, evacuation signs and assembly points for evacuation areas?

38 countries responded

- Yes: 13 (34.21%)
- No: 21 (55.26%)
## Gaps & Needs: Exercise Pacific Wave 2011

<table>
<thead>
<tr>
<th>Country</th>
<th>3A.6: Mass coastal evacuation plan.</th>
<th>3B.6: Evacuation maps, routes, evacuation signs &amp; assembly points</th>
</tr>
</thead>
<tbody>
<tr>
<td>El Salvador</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Guatemala</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>YES</td>
<td>Some coastal areas have signage</td>
</tr>
<tr>
<td>Panama</td>
<td>No response</td>
<td>No response</td>
</tr>
</tbody>
</table>

*Did not participate in Exercise Pacific Wave 11: Costa Rica, Honduras*
Course Goal – what and how

*Produce reliable tsunami evacuation maps working with communities and govt agencies*

- Linked series of training workshops on
  - Evacuation Planning
  - Evacuation Map Development (inundation modelling and map creation)
  - Tsunami Warning & Emergency Response SOPs
  - Conducting Tsunami Exercises (incl evacuation)
- Course globally applicable
  Standardized tools and methodologies
- Once developed, replicate as Train-the-Trainer
ITIC lead, in collaboration with New Zealand, UNESCO/IOC, PTWS Working Groups, other partners

Course Team - Warning, Modelling, Disaster Mgmt, Community Preparedness, Educ/Outreach experts

Compile and incorporate best practices worldwide

Pilot Course using ‘real’ communities (produce evacuation map). After each training delivery, feedback mechanism to adapt and improve.

Interest in Central America pilot(s)?

At end, publish IOC Manual and Guide on Evacuation Plans, Maps, and Procedures
## Tsunami Modeling Codes examples

<table>
<thead>
<tr>
<th>Model Features</th>
<th>COMMIT (MOST)</th>
<th>GEOCLAW</th>
<th>ATFM (forecast)</th>
<th>COOLWAVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approximation</td>
<td>Shallow Water</td>
<td>Shallow Water</td>
<td>Shallow Water</td>
<td>Boussinesq</td>
</tr>
<tr>
<td>Wave Dispersion</td>
<td>Numerical</td>
<td>No</td>
<td>Optional</td>
<td>Yes</td>
</tr>
<tr>
<td>Grid nesting</td>
<td>Yes</td>
<td>AMR</td>
<td>Yes (two way)</td>
<td>Yes</td>
</tr>
<tr>
<td>Runup</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Interface</td>
<td>Graphical</td>
<td>Command line</td>
<td>Command line</td>
<td>Command line</td>
</tr>
</tbody>
</table>

**Summary of selected tsunami modeling softwares used for tsunami inundation modeling for evacuation maps (vs forecasting).**

*Others used include NEOWAVE, COMCOT, TUNAMI-N2, etc*
Community Model Interface for Tsunamis
Community Model Interface for Tsunamis
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Community Model Interface for Tsunamis
## Community Model Interface for Tsunamis

### Advantages of ComMIT:
- Easy to use Graphical Interface
- Ability to run on any platform (Windows, Unix or Macintosh).
- No need to deal with complicated compiler or library issues.
- It provides full access to NOAA NCTR propagation database

### Disadvantages of ComMIT:
- Source definition is restricted to NOAA NCTR Propagation Database
- Output product generation is restricted to existing ComMIT visualization features.
- Limited grid size/resolution (can be easily resolved).
- Multi-run automation is not possible.
Course Development Plan: 2015-2016

1. **Stakeholders coordination meetings**
   - Outline process. Identify communities, participants/agencies/organizations

2. **Linked training workshops**
   - Evacuation Planning, Map Development, Tsunami Early Warning SOPs, Exercises

3. **Activities / Products (some conduct in parallel):**
   - Evacuation SOPs
   - Inundation Modeling for evacuation map
   - Tsunami Evacuation map – community outreach and awareness, signage
   - Tsunami Exercise - Plan, Conduct, Evaluate
Next Steps

- Identify Pilot locations. *Central America?*
- ITIC Pilot will
  - Develop Course
  - Assist communities to make evacuation maps
  - Expected time frame: 2015-2016
- Support mechanisms needed
  - Feedback Team (PTWS, sub-regional, country?)
  - Country consultant
  - For each pilot location, need
    - Government point of contact
    - Stakeholder agencies (national, local, non-government, science resource (govt, university, other))
Thank you

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