6th Meeting of the ICG/PTWS Regional Working Group on Tsunami Warning and Mitigation System
Shanghai, China 1-3 March 2017

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Department of Science and Technology
Geotectonic Setting of the Philippines

Trenches and major active faults in the Philippines
Local Tsunami-Affected Areas in the Philippines

Local Tsunami in the Philippines

(~ 40 tsunamis for past 400 years – 1 in 10 years)

Coastal areas at eastern and western margins fronting major seas and inland seas have been affected by tsunamis

Epicenter of tsunamigenic earthquake
Key Actions for Tsunami Risk Reduction

• Know Hazards and Risks
  <- Hazard and Risk Assessment

• Monitor
  <- Monitoring

• Warn and Disseminate Information
  <- Communication

• Respond Properly and Timely
  <- Mitigation, Preparedness, Response, Recovery
Tsunami Hazard and Risk Assessment

- Inundation maps prepared at scales of 1:50,000 (national mapping) to 1:5,000 (detailed mapping of selected sites).

- Tsunami modeling to determine possible heights and inundation for the different tsunami prone coastal areas of the country to serve as inputs for warning and evacuation planning.

- Approximately 10 million people exposed to tsunami.
EARTHQUAKE MONITORING NETWORK

- **92 seismic station network**

Data Receiving Center at Main Office

Unmanned stations with satellite communication

Digital Seismic Record
Earthquake Parameter Determination

- 36 manned stations
  - Short Period - 33
  - Broadband – 3

- 52 unmanned stations with VSAT communication
  - Short Period - 21
  - Broadband – 35 (+10 strong motion broadband)

Earthquake Intensity Determination

- Strong motion/intensity meter with VSAT -35
- Intensity meter with internet - 92
# Sea Level Monitoring Network

<table>
<thead>
<tr>
<th>Network</th>
<th>Existing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real-time tide gauges</td>
<td>*13 (PHIVOLCS thru JICA), 6 for installation</td>
</tr>
<tr>
<td>Community tsunami detection and warning system</td>
<td>5 (PTWC, RIMES, GLOSS)</td>
</tr>
<tr>
<td></td>
<td>10 (PHIVOLCS)</td>
</tr>
</tbody>
</table>

- PHIVOLCS thru JICA
- PHIVOLCS Community Tsunami Detection
Community Tsunami early Warning System – PHIVOLCS

PHIVOLCS/ASTI and LGUs
Tsunami Visualization and Decision Tool

Communities
10 Feb 2017 Surigao del Norte Earthquake

2017/02/10 14:03 Surigao City, Philippines

<table>
<thead>
<tr>
<th>Date (UTC)</th>
<th>Longitude</th>
<th>Latitude</th>
<th>Depth (km)</th>
<th>Mw</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017/02/10</td>
<td>125.5 E</td>
<td>9.8 N</td>
<td>10</td>
<td>6.5</td>
<td>Manual (Rapid solution)</td>
</tr>
</tbody>
</table>
10 Feb 2017 Surigao del Norte Earthquake

- **Casualty**
  - 8 dead
  - 202 injured

- **Damage to houses**
  - 518 completely damaged
  - 5880 partially damaged

- **Damage to facilities**
  - 47 school facilities
  - 6 bridges
  - 5 national road sections
Education, Awareness, Preparedness Campaigns

• Promotion of tsunami awareness during the National Science and Technology Week

• Seminar during the World Tsunami Day

• Commemoration of the 40th Anniversary of the M7.9 Moro Gulf Earthquake and Tsunami
  - Exhibit and lectures for students on earthquake and tsunami in Zamboanga City
  - Seminar workshop for media in Zamboanga City
Promotion of Tsunami Awareness – National Science and Technology Week
40th COMMEMORATION OF THE 1976 16 AUGUST MORO GULF EARTHQUAKE and TSUNAMI
Strengthening Partnership with the members of MEDIA - Seminar On Earthquake and Tsunami
Partnerships in Capacity Building and Tsunami Preparedness

• Department of Interior and Local Government (DILG), the Vice-chair for the Preparedness Pillar of the National Disaster Risk Reduction and Management Council has been training coastal villages on Tsunami preparedness and evacuation, starting at the eastern seaboard of the Philippines, in response to PHIVOLCS tsunami risk assessment.

• Capacity building of PHIVOLCS staffs by NAMRIA on sea level measurement, data processing and sea level station operational maintenance.
THANK YOU!

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