

A Guest Researcher from PHIVOLCS

The Meteorological Research Institute (MRI) was pleased to host Dr. Baby Jane T. Punongbayan from the Philippine Institute of Volcanology and Seismology (PHIVOLCS) from January 10 to February 24, 2006. One major objective of her stay was to learn basic techniques to forecast arrival times and heights of tsunamis. The figure below is a result of her simulations showing a profile of tsunami caused by a fictitious earthquake M8.0 along the Manila trench.

The Japan Meteorological Agency (JMA) and PHIVOLCS conducted a two-year project to improve a volcano and earthquake monitoring system for the Republic of the Philippines under the auspices of the Japan International Cooperation Agency. After completing installation of a new network of 30 observation points whose seismic waveform data are transmitted via satellites to a central processing unit, the project has been concluded by successful transfer of a set of techniques of tsunami forecast employed by JMA to PHIVOLCS, during the fiscal year 2005 (April 2005 to March 2006). MRI is part of JMA.



Photo 1. Dr. Punongbayan and a staff member of MRI. Dr. Punongbayan (left) learns basic scheme of tsunami forecast. A tsunami profile 20 minutes after the occurrence of a fictitious M8.0 earthquake along the Manila trench.

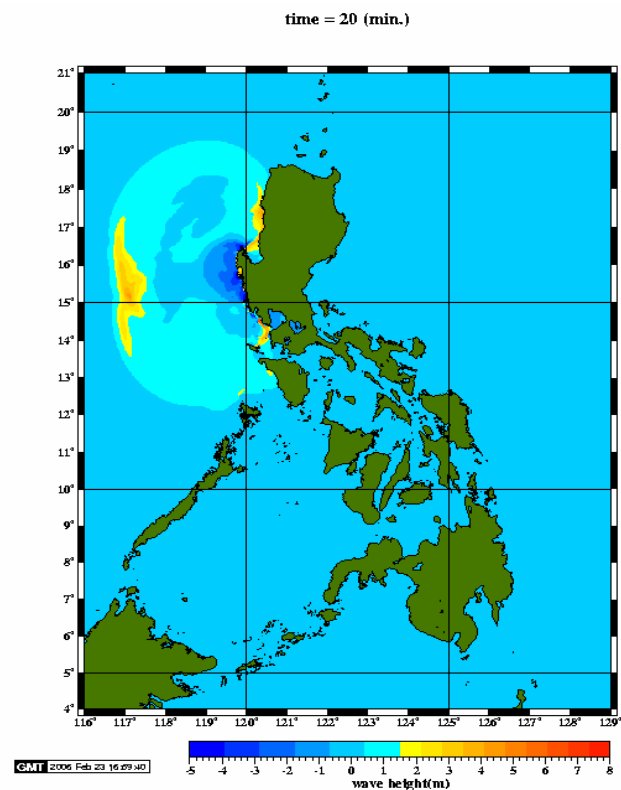


Figure 1. Results of simulation shows a tsunami profile caused by a fictitious earthquake M8.0 along the Manila Trench.

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Security and Protection of Dams in the U.S.

Homeland Security's Presidential Directive No. 7 (HSPD-7) has identified Dams as one of 17 Critical Infrastructure/Key Resource sectors. The Dams Sector includes dams, navigation locks, levees, power generation plants, navigable waterways, flood protection, and environmental stability. There are more than 19,200 km (12,000 mi) of navigable US inland waterways and approximately 80,000 dams (about 60 percent are privately owned).

HSPD-7 designated Federal Government Agencies for each of the sectors. The Department of Homeland Security (DHS) was assigned the responsibility for the protection of the Dams Sector. DHS is responsible for developing and implementing the National Infrastructure Protection Plan and responsible for assessing progress in sector-wide risk mitigation and collecting the corresponding performance measures to enable national cross-sector protection program gap assessments.

Attacks on dams have the potential to cause massive downstream casualties and significant economic losses. U.S. dams historically have been designed and regulated for safety, and there are several long-standing programs in place to assess, mitigate, and respond to the potential dam failures caused by natural hazards. Some of this body of knowledge can be used in situations posed by vulnerabilities of dams to terrorist attacks. The transition to include security as part of an all-hazards risk management plan is a natural extension of practices already in place.

Several protective programs managed by DHS that contribute to the security and protection of the Dams Sector include:

- Buffer Zone Protection Plans – identifies and recommends security measures and local law enforcement coordination for the area surrounding a facility (“Buffer Zone”), making it more difficult for a potential attacker to conduct surveillance, or to plan or launch an attack.
- Protective Security Advisors – partner with state governments, local communities, and businesses throughout the country to assist with local efforts to protect critical assets and provide a local perspective to the national risk picture. They provide a Federally-funded resource to communities and businesses to assist in infrastructure protection issues and enhancement of state and local homeland security initiatives.
- National Asset Database – a continually evolving Federal repository that contains descriptive information about U.S. critical infrastructure.
- Risk Analysis and Management for Critical Assets Protection – provides a common risk-based method for comparing security risk across the 17 critical infrastructure sectors, informing DHS and the Federal government to allocate federal resources based on risk.
- Site Assistance Visits – facilitates vulnerability identification and discussions between the Federal government and owners/operators of critical infrastructure assets. These efforts are conducted jointly with asset owners and include a multidisciplinary team addressing operations, crisis management, physical and cyber security, operational security, and infrastructure interdependencies.

Additionally, private-sector asset owners across the dams sector are voluntarily leading the development and implementation of numerous security and protection activities to complement the protective measures being performed by the Federal government. These activities range from participation in and sponsorship of awareness training to the physical hardening of facilities to the completion of facility security plans. Additional information is available at dams@dhs.gov.

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