

5th INTERNATIONAL WORKSHOP ON COASTAL DISASTER PREVENTION

The fifth International Workshop on Coastal Disaster Prevention was held on 22 July 2008 in Yogyakarta, Indonesia, and had 220 participants, who included scientists, socio-scientists, NGO members, and engineers. Through 14 presentations from Indonesia, Japan, and the US, discussions centered on hard and soft technologies to mitigate tsunami disasters: tsunami early warning systems, offshore tsunami detection technologies, tsunami information dissemination methods, tsunami damage estimation techniques, tsunami disaster education methodologies, etc. Necessity of continuous international cooperation is confirmed to enhance preparedness of tsunami disasters and to create tsunami-resist communities in at least the participated countries.

The post-conference technical tour included visits to observe coastal forest against possible tsunamis, which was a measure not only to reduce the tsunami intrusion but to reduce sea winds which disturb plantation agriculture in the coastal area. Dome-shaped houses were observed, which were constructed after the 2006 Java Earthquake; each of them was built on a concrete base with a steel frame.

The workshop was organized by Japan's Port and Airport Research Institute; Coastal Development Institute of Technology; Ports and Harbors Bureau of Ministry of Land, Infrastructure, Transport and Tourism; Indonesia's Ministry of Marine Affairs and Fisheries and the University of Gadjah Mada with help of both US and Japan side chairs of the Storm Surge and Tsunami Task Committee of this UJNR Panel.

Contacts: Dr. Takashi Tomita, Port and Airport Research Institute, Japan tomita@pari.go.jp and Dr. Solomon Yim, Oregon State University solomon.yim@oregonstate.edu.



Photo: Technical Session in the 5th International Workshop

IWATE-MIYAGI NAIRIKU EARTHQUAKE

The 2008 Iwate-Miyagi Nairiku earthquake occurred at 8:43 am on 14 June 2008 with JMA (Japan Meteorological Agency) magnitude of 7.2 (preliminary value). The hypocenter was located near the border between Iwate and Miyagi Prefectures, which is about 85 kilometers north of Sendai City. The strongest shakings were measured in the cities of Oshu (Iwate Pref.) and Kurihara (Miyagi Pref.), where the maximum seismic intensity was 6+ on the JMA-scale; the 1995 Kobe and 2004 Niigataken Chuetsu Earthquakes registered 7 on the JMA scale. The maximum ground acceleration record was about 4 G. The earthquake resulted in 13 deaths, 10 are still missing, and more than 400 injuries. More than 800 houses were damaged.

Reconnaissance teams, which consisted of NILIM, PWRI and BRI staffs, were dispatched at the request of the Ministry of Land, Infrastructure and Transportation to provide technical advice for emergency restoration of damaged facilities, including landslides, sewerage facilities, dams, bridges, and houses. The reconnaissance teams also conducted field survey of the damage in the areas.

Two typical damages are described in the below.

Landslides triggered by this earthquake crushed structures, buried people, cut off road traffic, and isolated local communities. Mud from landslides dammed up rivers that created 15 major landslide dams. Among these the largest landslide took place at Aratozawa (see Figure 1), located upstream of the Aratozawa Dam. The landslide area was 1400 m in length, 810 m in width and the estimated landslide volume was 45 million cubic meters.

The 95 m Maturube Oh-hashi Bridge collapsed due to sliding movement of the slope supporting one of the abutments (see Figure 2). The movement of the slope supporting abutment A1 and pier P1 resulted in a dislocation of about 10 m, and the lateral force caused by the sliding pushed through the bridge girder's opposite side of abutment A2. The girder buckled downward and pier P2 broke into three pieces.

Contact: Mr. Osamu Matsuo, Research Coordinator for Earthquake Engineering, PWRI, matsuo@pwri.go.jp



Figure 1. Landslide at Aratozawa

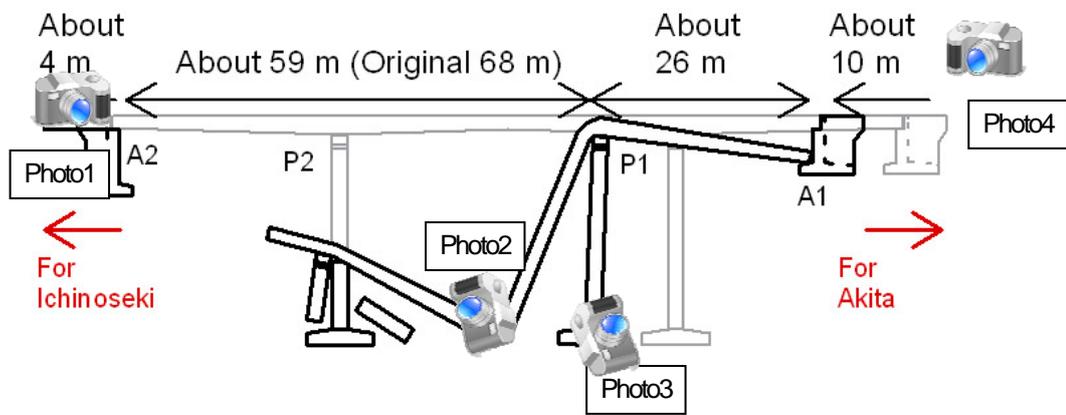


Figure 2. Collapse of Maturube Oh-hash Bridge