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Session 2: Hazard and Risk Modeling Applications

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Applied Science and Technology supporting Risk Assessment, Hazard Monitoring, and Early Warning around the Globe

Abstract

Since 1996, the Pacific Disaster Center (PDC) has been applying information, science and technology for the assessment of risk and the establishment of hazard monitoring and early warning decision support systems around the globe. PDC's web-based, GIS-based DisasterAWARE platform integrates baseline information with hazard models and real-time observations to provide effective and timely situational awareness and warning for numerous hazards including typhoons, earthquakes, tsunamis, floods, and wildfires. PDC hosts the "Emergency Operations" (EMOPS) version of DisasterAWARE which is used by widely by disaster management and humanitarian assistance organizations around the world including FEMA, USAID, UN agencies, NGOs/IOs, and national disaster management offices in the Asia Pacific (AP) and Latin American and Caribbean (LAC) regions. Over the past 10 years, customized versions have been delivered to Thailand and Vietnam supporting their national disaster management activities as well. And in early 2013 the ASEAN AHA Centre's DisasterAWARE-based Disaster Monitoring and Response System (DMRS) became operational. Similar versions in other countries are in the planning stages. A mobile version of DisasterAWARE, called Disaster Alert, is used by more than 1.5 million people around the world on their iOS and Android devices, allowing them to receive alerts and warnings for hazards which may impact them and their families.

Supporting DisasterAWARE are several key components including hazard models which allow disaster management professionals to understand and assess potential impacts from hazards to lives, property, and other critical societal resources and structures. These models typically "translate" a physical phenomenon (i.e., the shaking caused by an earthquake) into estimates of damage to man-made structures and the people who rely upon them. In turn, these estimates are used to gauge the need for, and the likely scale of, disaster responses and humanitarian assistance missions.

This presentation will provide a brief overview of Pacific Disaster Center and its mission, the DisasterAWARE decision support application, and some of its underlying models and real-time data feeds.