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U.S. Contribution to the Indian Ocean Tsunami Warning System

November 2007

US IOTWS Program Update

SPECIAL ISSUE: SMALL GRANTS PROGRAM

US Indian Ocean Tsunami Warning System (IOTWS) Program
from advanced technologies to resilient communities

A Special Focus on the US IOTWS Small Grants Program

This month's Program Update provides a closer look at some of achievements completed through the US Indian Ocean Tsunami Warning System (IOTWS) Small Grants Program. The US IOTWS Program has funded 17 small grants in India, Indonesia, Sri Lanka, and Thailand as part of its $16.6 million two-year effort to support the development of an end-to-end warning system in the region. The grants program promoted pilot activities that contribute to community and bottom-up results in disaster mitigation, preparedness, and response. Some highlights of these small grants are provided as follows.

Using the Past to Predict the Future

Chulalongkorn University, Thailand

Teachers viewing images of Pakarang Cape after the 2004 tsunami

To support the tsunami early warning system in Thailand, the Department of Geology at Chulalongkorn University conducted four workshops targeting elementary and high-school teachers from over 70 schools throughout Phang Nga province. The project provided training on earthquakes, tsunamis, and the appropriate actions to take in case of a tsunami warning. As respected members of their communities and playing a significant role in shaping young minds, these 200 teachers now have a wider array of tools and knowledge to help strengthen local capacity and enhance resilience against disasters. The Department of Geology will adapt these materials for use in university lectures and make them publicly available on the Chulalongkorn website. Further development of these tools and the standardization of a national tsunami education curriculum is the clear next step in achieving sustained knowledge of tsunami hazards for the critical "last kilometer". *For more information contact Kruawan Jankaew at kjankaew@yahoo.co.uk.*

Making Safety the Law

Indonesian Society for Disaster Management (MPBI), Indonesia

MPBI used grant funding to critically analyze and document the process of drafting Indonesia's Disaster Management Bill in order to distill the findings into a guidebook for local governments in coastal areas to develop their own disaster management regulations based on the new national policy. With the keen participation and commitment from the government, the project also facilitated the process by which local policymakers can draft their own legal reforms and action plans to suit the needs of their communities. MPBI also prepared a case study, *Knitting the Sense of Togetherness* on the development of the national Disaster Management Bill, as well as a guidebook, *Creating Legal Reform (PERDA) in Disaster Management at the Provincial and District Level*, that can continue to facilitate progress towards greater coastal risk reduction. Building from this small grant, MPBI plans to use its extensive network, in partnership with donors such as GTZ and Oxfam, to support the formation of local disaster management laws starting in the cities of Ende, Alor, Semarang, and Jogjakarta. MPBI is also implementing an advocacy support program, which runs until at least 2010, involving

local governments in Makasar, Lampung, West Java, Jogjakarta, Padang, Surabaya, Bandung, Nusa Tenggara Timor, Aceh, Semarang, and East Kalimantan. *For more information, contact Hening Parlan at info@mpbi.org.*

Natural Barriers Reduce Tsunami Risk

University of Moratuwa, Sri Lanka

Scientists at the University of Moratuwa studied tsunami impacts, response, and recovery along the southern and western coast of Sri Lanka by modeling tsunami wave propagation and investigating countermeasures to minimize wave damage. Physical modeling studies increased understanding of the performance of physical countermeasures during a tsunami, such as coral reefs, coastal vegetation, and coastal structures. The project more accurately identified communities at risk and potential means for saving lives. By taking a multi-disciplinary approach, the local knowledge of risks and vulnerabilities in the community was successfully integrated with scientific input. Collaboration with Geoscience Australia, University of Arizona, Ports and Airport Research Institute, and United Nations University will help to ensure continued capacity building. The establishment of a Centre for Disaster Risk Reduction will provide a platform for collaborative research with stakeholders, including the Disaster Management Centre and Coast Conservation Department. *For more information contact S.S.L. Hettiarachchi at sslh@civil.mrt.ac.lk or S.P. Samarawickrama at samans@civil.mrt.ac.lk.*

National Policies Go Local

Asian Institute of Technology, Thailand

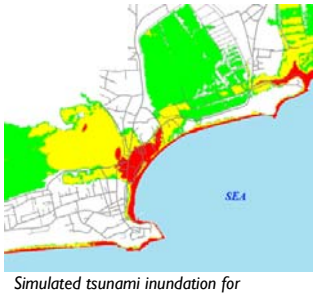
Hand-made drawings for the Local Disaster Preparedness Manual

Researchers from the Asian Institute of Technology (AIT) investigated how national disaster management policies support local institutions in providing preparedness and post-disaster services. Approximately 100 participants, including women, the disabled, and the elderly, contributed to the development of a disaster preparedness manual. The manual incorporates local knowledge on disaster management and outlines how local institutions can increase their effectiveness on community preparedness, relief, and rehabilitation. Grassroots organizations with strong linkages in Nagapattinam, India and Hambantota, Sri Lanka, will carry on efforts launched under the program, and AIT is collaborating with local organizations on applied research for disaster risk reduction. *For more information contact Mokbul Morshed Ahmad at AIT at morshed@ait.ac.th.*

Mapping the Threat

University of Peradeniya, Sri Lanka

The University of Peradeniya, in collaboration with Cornell University College of Engineering, developed tsunami hazard maps for five cities on the coastal belt of Sri Lanka by constructing state-of-the-art computer models of tsunami inundation. These maps were provided to Sri Lanka's Disaster Management Center (DMC) to support evacuation planning and public awareness activities. Project researchers shared experiences on the methodologies of tsunami inundation modeling and hazard mapping with 45 participants of the Master's Degree Program in Disaster Management, as well as with 60 final-year engineering students. The University of Peradeniya will explore the establishment of a center dedicated to coastal hazard modeling and mapping to ensure long-term continuation of tsunami risk assessment for vulnerable areas along Sri Lanka's coastal belt. *For more information contact Janaka Wijetunga at janakaw@pdn.ac.lk.*



Simulated tsunami inundation for Hambantota, Sri Lanka

Natural Tsunami Warnings: Reading the Signs

Save Andaman Network, Thailand, and East Tennessee State University, USA

Save Andaman Network (SAN) and East Tennessee State University (ETSU) jointly analyzed information from interviews on warning and evacuation in Thailand's tsunami-affected provinces. SAN and ETSU then built the capacity of communities to detect, recognize, and effectively respond to disaster warnings. Through the grant, the grant partners trained 380 community residents and local government officials and developed a

comprehensive set of educational materials, including a summary booklet, a DVD, cartoons, and posters. Warning systems often focus on technical components, to the neglect of considering social aspects, informal notification mechanisms, and natural environmental alerts. Studies have shown that tsunami education may not increase preparedness unless it also addresses how communities evaluate risk and the need for personal responsibility. Taking this into account, the research team identified an effective model for warning systems that integrates social as well as technical components. Working with key partners throughout 2008, SAN will pilot a sample curriculum in a local school and continue to provide technical support to government agencies and other organizations. *For more information contact Parkpoom Witantirawat at SAN at saveandaman@yahoo.com and Chris Gregg at ETSU at gregg@mail.etsu.edu.*

Road Map for Preparedness

Asian Institute of Technology, Thailand

The Asian Institute of Technology (AIT) initiated this multi-disciplinary project to build the coastal mitigation capacity of local leaders from Kapoe District in Ranong Province, Thailand. The project drew on sustainable natural resource concepts, such as the importance of mangrove and coral reef ecosystems as a cornerstone of building resilient livelihoods for coastal communities. Training covered the role of communities, local government agencies, and NGOs in coastal mitigation; integrated coastal zone management; and coastal protection infrastructure. Coastal mitigation plans for communities in Muang Kluang Sub-district are being developed through the leadership of the NGO Raks Thai and with input from participants. The multi-disciplinary approach and the training materials developed during the project will be used in training programs through links already established by AIT, short-term programs, and degree courses in the Integrated Coastal Management curriculum. *For more information contact Wenresti Gallardo at AIT at gallardo@ait.ac.th.*

Risk in the Community "Big Picture"

SEEDS, India

Participants in a CBDM workshop, Wandoor, Andaman and Nicobar Islands

SEEDS trained 250 community members on the Andaman and Nicobar Islands on developing maps to identify vulnerable areas, emergency management procedures, and preparing village disaster management plans. Fifteen panchyats (blocks) in one sub-district were mapped, and SEEDS worked with local leaders to form emergency task forces and provide training on early warning, shelter management, search and rescue, and evacuation. The village disaster management plans were distributed throughout the Panchyats, clearly showing the vulnerabilities, resources, and responsibilities of task force members. Villagers now have a clearer understanding of natural hazards, impacts, and the importance of being prepared. Local government authorities will now ensure that the disaster risk reduction process continues. In addition, SEEDS is implementing a strong advocacy program to replicate this model across all panchyats on the Andaman and Nicobar Islands. It is also creating a Citizens' Resource Center, at Port Blair. *For more information, contact SEEDS India at info@seedsindia.org.*

UPCOMING US IOTWS PROGRAM AND RELATED ACTIVITIES

Study Tour on Disaster Management, January 12-19, 2008
San Francisco and Sacramento, California, USA. For more information contact S.H.M. Fakhruddin at fakhruddin@adpc.net

Cross-Training Workshop on Media and Disaster Early Warning Systems, January 14, 2008
Jakarta, Indonesia. For more information contact S.H.M. Fakhruddin at fakhruddin@adpc.net

Local Tsunami Early Warning Systems Workshop, January 16-18, 2008
West Timor, Indonesia. For more information contact S.H.M. Fakhruddin at fakhruddin@adpc.net

About the US Indian Ocean Tsunami Warning System (IOTWS) Program

The US IOTWS Program is part of the international effort to develop tsunami warning system capabilities in the Indian Ocean following the December 2004 tsunami disaster. The US program adopts an "end-to-end" approach—addressing regional, national, and local aspects of a truly functional warning system—along with multiple other hazards that threaten communities in the region. In partnership with the international community, national governments, and other partners, the US program offers technology transfer, training, and information resources to strengthen the tsunami warning and preparedness capabilities of national and local stakeholders in the region.
For more information please visit **www.us-iotws.gov**.