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Tsunami Workshop Advances Rebuilding and Recovery Strategies

By Mark Fitzgerald

ASCE, working closely with the senior leadership of the U.S. Army Corps of Engineers, helped plan a workshop to discuss the relief, recovery, and reconstruction work in progress in the aftermath of the Indian Ocean tsunami. The workshop, which was hosted by The Infrastructure Security Partnership (TISP), was held on January 27 in Washington, D.C., at the National Academy of Engineering and brought together leaders of the American Red Cross, the U.S. Agency for International Development, the Corps of Engineers, the U.S. Department of State, and the World Bank, as well as representatives from a wide range of professional societies and international organizations. Focused on defining the role that the engineering, design, and construction professions will play in the countries affected by the tsunami, the workshop attempted to gain a clearer picture of the effects of the disaster and to assist in the planning work that will be needed before the physical infrastructure is repaired.

Alan McCurry, the chief operating officer for the American Red Cross, began the discussion by updating the audience on the current relief and recovery situation. “We’re still providing comfort and immediate aid to those who need it,” he said. “From tents and blankets to hygiene kits and cooking utensils—we’re flying these sorts of things in by the tens of thousands.”

Because of the generosity evinced by people around the world for the tsunami relief effort, the American Red Cross was recently able to halt fund-raising efforts and turn its attention to recovery efforts over the longer term. “The outpouring around the world supporting this recovery has just been phenomenal,” explained McCurry, who

noted that the International Federation of Red Cross and Red Crescent Societies was estimating that the donations for tsunami relief would exceed \$1 billion.

“The American Red Cross will be in the footprint of the disaster for the next three to five years,” he added, stressing the importance of food distribution, health care, psychological counseling, disease prevention, and the provision of clean water. “In [the aftermath of an event] like the tsunami, measles, malaria, and other diseases are real threat to those islands, so we are putting a lot of resources and money into expanding our measles program and working with other organizations to start an inoculation program.”

In a panel discussion that explored various ways of reducing the depredations of earthquakes, floods, and hurricanes, Curtis Barrett, a project manager for the National Oceanic and Atmospheric Administration’s National Weather Service, discussed the need for a reliable global tsunami warning system. Gauges for the deep-ocean assessment and reporting of tsunamis (DART) with detection software that estimates the amplitudes of pressure fluctuations within the tsunami frequency band, according to Barrett, are currently being deployed in strategic locations in oceans throughout the world. “These DARTs have passed the test and will eventually become primary sensors for a global tsunami warning system,” he said.

Because tsunamis—as demonstrated in the recent tragedy—can spread over vast distances and can move toward shorelines at speeds of about 800 km/h, the need for an immediate and effective warning and response system is of the utmost importance. “We have to figure out where in each country tsunami notification should go,” added Barrett. “How does that warning information get from the federal level to the state to the local community and to the coastal areas where these people are vulnerable? And after they get that information, what do they do? They have to do the right thing immediately; they have to go vertical or they have to get to high ground real quickly.”

Jim Dinegar, the chief operating officer for the American Institute of Architects (AIA), addressed the difficulty of prescribing a comprehensive role for engineers, designers, and constructors in recovery and reconstruction efforts following tsunamis. “This is uncharted territory as far as we’re concerned,” said Dinegar. “What we’re seeing in the rebuilding phase is that tsunami recovery is becoming compressed. I think part of this has to do with the amazing amounts of funds that are available, the outstanding communication that’s under way—because everybody in the world knows about this—and I also think technology has helped compress it. But we’re starting to see the expectations from the folks that were affected become more intense and more accelerated, and from AIA’s perspective, we’re not prepared for that.”

Dinegar went on to stress the importance of collaboration and the need to join forces with experts in other professional disciplines. “These people want to reestablish their lives, reestablish their livelihoods. to find out what’s there for them,” he said. “So we’re prepared to offer assistance, not independently of what else is being done, but in collaboration, because it’s a global community and we’re all world citizens.”

The final panel discussion focused on the challenges of global reconstruction. Steve Dice, an official with the World Bank's Department of Institutional Integrity, called upon the international community to "look at this disaster as an opportunity to intervene for real change." After acknowledging that most of the areas affected by the tsunami were impoverished before the disaster, Dice stressed that the World Bank wanted to focus on tactical rebuilding efforts that would be sensible over the long term. "While we want to intervene constructively, we also want to intervene strategically to really try to make a difference," Dice said. "That will take some careful involvement, both in terms of improving things like education and health systems, and making strategic decisions about rebuilding infrastructure."

Nancy Zucker Boswell, the managing director of the U.S. chapter of Transparency International (a Berlin—based organization that evaluates international transactions), continued the discussion by calling attention to the possibility of bribery and corruption in the reconstruction work that will be carried out. "The basic tension that we're all dealing with is what to do when you have sudden inflows of large amounts of money and the need for rapid disbursement," said Boswell. "You need to put on controls, but those take time and can slow down the process, so where do you draw the line?"

Because most of the countries in need of reconstruction have weak institutions and do not have the benefit of stringent law enforcement and oversight, they are susceptible to corruption and bribery, Boswell observed. "Historically, grand-scale corruption has been most visible where extensive reconstruction is necessary," she said. "That's where the big-ticket items are, and that's where particularly corrupt governments like to focus because that's where they can take the greatest amount of money off the top or under the table." (Curbing bribery and corruption is a major goal of ASCE's president, William P. Henry, P.E. As part of his initiative to formulate global principles for professional conduct, representatives of national and international groups attending the Society's 2004 annual conference, in Baltimore, helped draft a statement on business integrity.)

ASCE's executive director, Patrick J. Natale, P.E., moderated the closing discussion, which considered the next steps to be taken in the tsunami reconstruction effort. "We have agreements of cooperation with sixty-five countries around the world," said Natale. "So we sent letters to the affected regions offering our assistance and encouraged other countries to help—to join the team and work together."

Natale also pointed out that Engineers Week—a celebration of the profession that will take place February 20–26 and this year will place an emphasis on volunteerism—would provide an ideal opportunity for focusing efforts on tsunami recovery. In this vein he introduced Victoria Rockwell, a member of the American Society of Mechanical Engineers and the chair of this year's Engineers Week. "We need to develop an action plan that we can implement immediately," said Rockwell, who called upon the audience

to determine ways in which the engineering community could help with tsunami reconstruction.

Together with Engineers Without Borders-USA (a humanitarian organization focused on improving the quality of life in disadvantaged communities by implementing environmentally and economically sustainable engineering projects), the organizations participating in Engineers Week are asking engineers for assistance in designing and constructing shelters and water, wastewater, sanitation, and energy systems in developing regions, especially the communities recovering from the tsunami.

The Engineers Week steering committee “set boundaries and decided that whatever steps we agreed on had to be sustainable and appropriate . . . for building local capacity,” Rockwell added. The suggestions offered in the closing panel discussion included drawing up an international document that would summarize best practices and lessons learned from the tsunami recovery, preparing instructional “webinars” focused on reconstruction, developing effective long-term public and private response mechanisms, formulating standards and codes for buildings, and implementing effective management guidelines for projects carried out to realize the goals of sustainable development.