

Natural and Technological Risks: Geological Hazards Update

HIGHLIGHTS OF FISCAL YEAR (FY) 2014 ACTIVITIES | OCTOBER 2014

GEOLOGICAL HAZARDS SUBSECTOR OVERVIEW

Geological hazards—including earthquakes, landslides, and volcanoes—threaten millions of people worldwide and can devastate communities in a matter of seconds by destroying homes, causing water and food shortages, adversely affecting health, and disrupting livelihoods. Although geological hazards cannot be prevented, proper mitigation and preparedness efforts can minimize the effects of these disasters and promote resilience, potentially saving lives and reducing the negative economic effects of a geological crisis. USAID’s Office of U.S. Foreign Disaster Assistance (USAID/OFDA) supports geological hazard disaster risk reduction (DRR) programs, which emphasize an “end-to-end” approach that ranges from identifying hazards to informing communities and households how to reduce the impact of geological disasters.

USAID/OFDA geological hazard DRR activities include monitoring events, supporting early warning systems, and educating at-risk populations and community leaders on proper response processes.

VOLCANO DISASTER ASSISTANCE PROGRAM: A VOLCANO CRISIS RAPID RESPONSE TEAM



Two observers from CVGHM climb a radio mast to service antennas used to receive seismic data during the October–November 2010 eruptions of Indonesia’s Mt. Merapi volcano. (Courtesy of CVGHM)

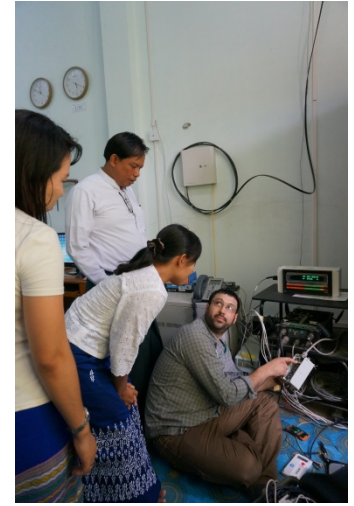
Following the 1985 eruption of Nevado del Ruiz Volcano in Colombia, which resulted in an estimated 23,000 deaths, USAID/OFDA and the U.S. Geological Survey (USGS) established the Volcano Disaster Assistance Program (VDAP)—the world’s only international volcano crisis response team. Since 1985, USAID/OFDA has provided nearly \$28 million to support VDAP, including more than \$3.5 million in FY 2014. To date, VDAP has responded to 27 major crises and helped to build response capacity in 12 countries. VDAP scientific teams travel to restless volcanoes throughout the world at the request of host governments and, using volcano-monitoring equipment, work with counterparts to quickly assess hazards and generate eruption forecasts. In FY 2014, VDAP and the Government of Indonesia’s Center for Volcanology and Geological Hazard Mitigation (CVGHM) monitored repeated eruptive activity from Mt. Sinabung prior to its February 1 eruption, following continuous volcanic activity since September 13, 2013 in Indonesia’s North Sumatra Province. VDAP provided four monitoring stations, interpreted satellite imagery and seismic data, and deployed a team of three USGS volcanologists to Indonesia to collaborate with CVGHM. For more information about VDAP:

<http://volcanoes.usgs.gov/vdap/>

REDUCING RISKS THROUGH EARTHQUAKE DISASTER ASSISTANCE TEAMS

USAID/OFDA works with USGS to reduce risks posed by earthquakes through Earthquake Disaster Assistance Teams (EDATs), comprising seismologists, geologists, and tsunami and landslide experts, as appropriate. EDAT members have collaborated with scientists in countries such as China, Haiti, Indonesia, Malawi, Turkey, and the Comoros. The scientific data produced from EDAT and local counterparts' assessments help to improve the understanding of seismic hazards and serve as the basis for the creation, adoption, and implementation of appropriate building codes and land-use plans by local and national governments in affected countries, ultimately reducing the adverse impacts of earthquakes.

In response to a magnitude 6.6 earthquake in Nicaragua on April 11 2014, the *Instituto Nicaragense de Estudios Territoriales* (INETER) and U.S. Ambassador to Nicaragua, Phyllis M. Powers, requested the technical expertise of the USGS to evaluate seismic monitoring operations in Nicaragua and provide recommendations to INETER to strengthen their ability to monitor earthquakes. Building on this collaboration, a four-person EDAT travelled to Nicaragua in early June and met with scientists from INETER to identify opportunities for future joint projects.



With USAID support, the USGS is now working with Burma's Department of Meteorology and Hydrology DMH on a major upgrade of the earthquake monitoring network. Photo by Susan Hough/USGS.

PROTECTIVE ACTION GUIDANCE FOR EARTHQUAKE-PRONE DEVELOPING COUNTRIES

Beginning in FY 2013, USAID/OFDA provided support to a program through GeoHazards International (GHI) to enhance safety procedures during earthquakes in developing countries. The initiative provides guidance on how to craft appropriate, effective, and accurate public safety messages in earthquake-prone low- and middle-income areas. As a part of the program, GHI connects professionals responsible for delivering earthquake-related safety messages in developing countries with a variety of technical specialists to discuss appropriate safety measures. GHI also develops and disseminates guidance outlining criteria and processes for developing local, context-specific messages on protective actions. Through the project, USAID/OFDA and GHI hope to reduce injury and loss of life—particularly among vulnerable populations—due to earthquake hazards.

PUBLIC-PRIVATE PARTNERSHIPS ENCOURAGE EARTHQUAKE RISK REDUCTION

In FY 2014, USAID/OFDA continued support for Working Program I of the Global Earthquake Model Foundation (GEM)—a public-private partnership that aims to establish uniform and accessible standards for calculating and communicating the risk of an earthquake occurring in a particular area. GEM's mission is to encourage the design, development, and deployment of state-of-the-art tools for earthquake risk assessment. GEM produces decision-making models that allow users—ranging from government officials to homeowners—to process earthquake risk information, inform decision-making, and reduce potential loss of life and damage to livelihoods and economies. For more information about GEM: <http://www.globalquakemodel.org/>

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