USAID/OFDA NATURAL AND TECHNOLOGICAL RISKS SECTOR UPDATE – October 2012

GEOLOGICAL HAZARDS SUBSECTOR

SECTOR OVERVIEW

Geological hazards—including volcanoes, earthquakes, and landslides—threaten millions of people worldwide and can devastate communities in a matter of seconds, 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

Following the 1985 eruption of Nevado del Ruiz volcano in Colombia, which resulted in approximately 23,000 deaths, USAID/OFDA and the U.S. Geological Survey (USGS) established the Volcano Disaster Assistance Program (VDAP)—the world's only volcano crisis response team. During the program's 26-year history, USAID/OFDA has provided more than $22 million to support VDAP, including more than $1.8 million in Fiscal Year (FY) 2012. To date, VDAP has responded to 26 major crises and helped to build capacity in 12 countries. VDAP scientific teams travel to restless volcanoes throughout the world at the request of host governments and, using mobile volcano monitoring equipment, work with counterparts to quickly assess hazards and generate eruption forecasts. In 2012, VDAP helped the Government of Indonesia's Center for Volcanology and Geological Hazard Mitigation to improve volcano monitoring at several volcanoes on Java and assisted with eruption forecasting at active volcanoes, which helped authorities determine if evacuations were warranted. In addition, a VDAP team returned to Nevado del Ruiz to support staff at the Colombian Institute for Geology and Mining to monitor volcanic unrest, while also assisting with data interpretation and repair of the volcanic mudflow monitoring system.

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, and Turkey. The scientific data produced from EDAT and local counterparts' assessments are used to help improve 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.

GLOBAL EARTHQUAKE MODEL

USAID/OFDA supports the Global Earthquake Model (GEM) Foundation—a public-private partnership that aims to establish uniform and accessible standards for calculating and communicating the risk that an earthquake could occur 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 works to produce 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.

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HYDROMETEOROLOGICAL SUBSECTOR

SECTOR OVERVIEW

Climate, weather, and water-induced disasters, such as floods, droughts, cyclones, and tsunamis, account for the largest number of natural disasters worldwide and affect more people than any other type of natural hazard. Extreme weather and climate events often have severe socioeconomic consequences, including loss of life, property, and livelihoods; scarcity of food, water, and energy; and adverse impacts on human health and the environment. USAID/OFDA-supported hydrometeorological DRR activities aim to reduce populations' vulnerability to climate and weather hazards through an integrated and multi-sectoral approach that addresses community needs while emphasizing locally sustainable and environmentally sensitive measures. USAID/OFDA works closely with vulnerable communities, as well as with national and local governments, international and regional organizations, universities, and non-governmental organizations (NGOs) to increase resilience to climate- and weather-induced disasters.

GLOBAL FLASH FLOOD GUIDANCE AND EARLY WARNING SYSTEM

USAID/OFDA, in partnership with the U.N. World Meteorological Organization (WMO), the National Oceanic and Atmospheric Administration (NOAA), the Hydrologic Research Center, and the national meteorological and hydrological services (NMHSs) of host countries, initiated a collaborative program in 2008 to assist NMHSs to monitor potential flash floods, thereby improving early warning lead time and enabling quick response. Complete regional systems are operational in southern Africa and Central America and implemented in the Middle East's Black Sea and Southeast Asia's lower Mekong Basin regions. The program has also established preliminary systems in Pakistan, Haiti, and the Dominican Republic. In FY 2013, the lower Mekong system will expand to include Burma, and regional systems will be implemented in Central Asia, South Asia, and southeastern Europe.

REGIONAL CLIMATE VARIABILITY AND PREDICTION WORKSHOPS

In response to increased demand for improved national and regional capacity to monitor and predict climate variability, USAID/OFDA and NOAA, in partnership with WMO and NMHSs, have organized a series of workshops throughout the world to establish and strengthen national preparedness for hydrometeorological events. The regional climate variability and prediction workshops, held annually since 2009, aim to address the transboundary nature of climate by encouraging cross-continental information exchange, including sharing lessons learned, among meteorologists. In addition, trainings seek to increase meteorologists' capacity to produce climate information for decision-makers to reduce the impact of climate fluctuations on local populations.

TOWARD RESILIENCE: A GUIDE TO DRR AND CCA

The USAID/OFDA-funded Emergency Capacity Building Project has developed a concise DRR and climate change adaptation (CCA) guide and training package. *Toward Resilience* is an introductory resource for development and humanitarian organization staff who work with communities vulnerable to disasters and climate change. The guide aims to fill existing gaps in available DRR–CCA resources and includes introductory DRR and CCA information, principles of effective practice, guidelines for action in a range of sectors and settings, case studies, and links to useful tools and resources.

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