



**BUREAU FOR DEMOCRACY, CONFLICT, AND HUMANITARIAN ASSISTANCE (DCHA)
OFFICE OF U.S. FOREIGN DISASTER ASSISTANCE (OFDA)**

NATURAL AND TECHNOLOGICAL RISKS SECTOR UPDATE – May 2010

GEOLOGICAL HAZARDS SUBSECTOR

SECTOR OVERVIEW

Geological hazards, including volcanoes, earthquakes, and landslides, threaten millions of people worldwide, most of whom reside in densely populated urban centers in developing countries. In addition to severe shaking, earthquakes can cause landslides, tsunamis, and fires. Volcanic eruptions can threaten populated areas with ashfall, deadly gases, landslides, tsunamis, and mudflows. Geological hazards can potentially devastate communities in a matter of seconds—destroying homes, causing water and food shortages, adversely affecting human health, and disrupting livelihoods. Although geological hazards cannot be prevented, proper mitigation and preparedness efforts can minimize the effects of these hazards, potentially saving lives and reducing the economic effects of a disaster. In response, USAID/OFDA supports geological hazard disaster risk reduction (DRR) programs, which emphasize an “end-to-end” approach that focuses on identifying needs in existing systems and increasing resilience to geological disasters through targeted capacity building. USAID/OFDA geological hazard DRR programs include monitoring of events, issuance of early warnings, and education of at-risk populations and community leaders on proper response mechanisms.

VOLCANO DISASTER ASSISTANCE PROGRAM (VDAP)

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. Between 1986 and 2009, USAID/OFDA has provided approximately \$16.7 million to support VDAP, including nearly \$1.6 million in Fiscal Year 2009.

VDAP scientific teams travel to volcanic areas throughout the world at the request of host governments, using mobile volcano monitoring equipment to quickly assess hazards and generate eruption forecasts. The early warning forecasts allow local authorities to evacuate high-risk areas before a disaster occurs, reducing fatalities and economic loss. VDAP programs also include training and technical assistance for local geologists to enhance preparedness and response for future volcanic events. VDAP programs are primarily focused on East Asia and the Pacific and Latin America and the Caribbean, where many of the most potentially dangerous volcanoes are located. To date, VDAP has responded to 25 major crises throughout the world and worked to build capacity in 12 others. The success of VDAP in preventing or reducing fatalities and economic loss underscores the value of preparedness and mitigation efforts, including the establishment and maintenance of national monitoring networks.

HAITI EARTHQUAKE DISASTER ASSISTANCE TEAM

In response to the magnitude 7.0 earthquake that struck southern Haiti on January 12, 2010, a USAID/OFDA and USGS Earthquake Disaster Assistance Team (EDAT) composed of seismologists and geologists deployed to Haiti in February to obtain scientific data needed to assess the short- and long-term seismic hazards facing Haiti following the earthquake. The team is also working to create and deliver an initial suite of hazard map products, forming the basis for development of seismic provisions which will guide the rebuilding of habitation and infrastructure in Haiti.

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HYDROMETEOROLOGICAL SUBSECTOR

SECTOR OVERVIEW

Climate and weather-induced disasters such as floods, droughts, cyclones and extreme temperatures account for the largest number of natural disasters and affect more people than any other type of natural hazard. Extreme weather and climate events cause severe socioeconomic impacts, such as loss of lives and livelihoods; food, water, and energy scarcity; and adverse impacts on human health and the environment. USAID/OFDA-supported hydrometeorological DRR activities are aimed at reducing vulnerabilities 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. USAID/OFDA DRR programs emphasize an “end-to-end” approach that identifies needs in existing systems and increases resilience to climate-induced disasters through targeted capacity building. Hydrometeorological DRR activities also have strong linkages to natural resource management, building resilience to support sustainable development.

RADIO AND INTERNET FOR THE COMMUNICATION OF HYDRO-METEOROLOGICAL AND CLIMATE RELATED INFORMATION

Radio and Internet for the Communication of Hydro-Meteorological and Climate Related Information (RANET) is a collaboration of national meteorological and hydrological services, or similar national and regional entities, working to make climate, weather, hydrological, and other related information more accessible to remote populations. The program is designed to aid in day-to-day resource decisions and preparation against natural hazards. RANET is funded and supported by USAID/OFDA, the National Oceanic and Atmospheric Administration (NOAA), National Meteorological and Hydrological Services (NMHSs), other donors, and NGO partners.

RANET initially utilized FM radio and internet capacities to disseminate information to remote communities. However with the advent of technology, RANET has used various platforms in broadcast satellite, satellite telephony, FM, HF digital e-mail, mobile phone, and advance internet applications to meet criteria for rural information dissemination. Since its inception in 2000, RANET has expanded to 16 African countries, with ongoing pilot activities in Asia and the Pacific. A common experience from Uganda to Niger is that communities with communication tools become engaged, which often leads to interest in meteorological observation, as well as partnerships with national agencies. In Uganda, community outreach efforts led to the development of a network of hydrometeorological observation stations, which report data via mobile phones. In Mozambique, the success of a few FM stations in warning against cyclones led to a network expansion supported by local NGOs.

GLOBAL FLASH FLOOD GUIDANCE AND EARLY WARNING SYSTEM

In 2008, USAID/OFDA, in partnership with the World Meteorological Organization, NOAA, and the Hydrologic Research Center initiated a program to help develop global infrastructure and regional implementation of technology, training, protocols, and procedures to lessen the impacts of flash floods. The program also provides rapid assessments of potential flash floods, improving early warning lead time and allowing for quick response. Two regions have been selected for demonstration of the system, including Southern Africa and the Middle East.

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