

Overview of Philippine Geohazards Programs

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Abstract

The Philippines is highly prone to various geologic hazards, including volcanic eruptions, earthquakes, tsunamis, landslides and flooding because of its geologic and geographic setting. For the past 400 years, ~170 eruptions, ~ 90 destructive earthquakes, ~ 40 tsunami events, and numerous flood and landslide events have affected the country. These events have caused significant losses in lives, properties, and the economy. These losses still happen despite the advances in science and engineering. Preparedness, mitigation and response efforts must be enhanced to significantly reduce the risk from various geologic hazards. Key to timely and proper efforts by various sectors of society is appropriate disaster imagination, where hazards and risk scenarios are defined for different scale of events, monitored and forecasted if possible, clearly communicated to all sectors, and appreciated and used in plans and actions at the individual, family, community, organization, local and national levels, that are aligned and complementary. Hazards assessment activities at scales of 1:50,000 to 1:10,000-1:5,000, in tandem with awareness and preparedness campaigns, have been conducted by the Philippine Institute of Volcanology and Seismology (PHIVOLCS), Mines and Geosciences Bureau, (MGB) and the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), and through academe-implemented projects as funded by the Department of Science and Technology (DOST). Risk assessments for extreme events like earthquake, flood and severe wind has been conducted for Metropolitan Manila and planned to be done in other urban areas in the country. Web portals and mobile applications have been developed to easily share hazards maps and data to the public. A hazards and risk assessment tool, the Rapid Earthquake Damage Assessment System (REDAS), has been developed by PHIVOLCS originally for earthquakes but loss estimation modules for flood and severe wind have been recently included. Monitoring systems for volcanic eruptions, earthquakes, tsunamis and deep-seated landslides have been established by PHIVOLCS, while flood monitoring systems have been developed for various river basins by PAGASA and DOST-supported projects. The various geohazards-related programs in the country need to be continued and strengthened to reduce the risks from the various natural hazards that the country faces.

Keywords: Hazards, risk, preparedness, mitigation, response