

ABSTRACTS VOLUME

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failures, and prior to new upcoming even more severe volcanic activities, the newly elected government decided to reduce Ecuador's volcanic vulnerability in several ways. The national civil defense will be enforced with their own, centralized volcanic monitoring as they obtained data and their interpretation of second hand and usually to late. A second step includes the installation of human decision-independent, early alert systems for lahars and the construction of economically useful mitigation structures (sabo dams etc.) close to active volcanoes. Another important step is dedicated to the permanent education of the public and especially of the children and last but not least the most difficult step, the re-location of public of high-risk areas. The last step incorporates micro-credits for the investment of a new house and/or farm for the re-located families as part of the re-compensation of their economic losses. How past mistakes led to the new policy of Ecuador's volcanic disaster management and how scientists of the CGVG-USFQ together with the authorities progress in this program will be demonstrated.

21a-P-08

Explosive Activity at Ubinas Volcano (Peru) During March 2006 to April 2007

Marco Rivera¹, Jersy Marino¹, Nicole C. Lautze², Lourdes Cacya¹, Vicentina Cruz¹, Jean-Claude Thouret³

1. Instituto Geologico Minero y Metalurgico [INGEMMET] / Peru
 2. U.S. Geological Survey / USA
 3. Laboratoire Magmas et Volcans, Universite Blaise-Pascal et CNRS / France
- e-mail: nlautze@usgs.gov

Ubinas is considered the most active volcano in southern Peru during historical times, with 24 episodes of high fumarolic activity since the 16th century. Approximately 5000 people live in 6 towns located near the volcano. The onset of explosive activity in March 2006 was preceded by ~8 months of increased fumarolic activity. On 27 March 2006 a mild explosion caused ash fall in Querapi village (4 km SE of the volcano). On 14 April the first notable explosion produced a gray, ash-laden eruptive column to 800 m above the volcano's summit. On the 19th, a 60-m-diameter incandescent lava body was observed in the summit crater, and at 10:50 on 20 April an explosion propelled a column of gas and ash to 3 km above the crater rim. Products emitted from 14 to 23 April 2006 consisted of hydrothermally altered blocks up to 70 cm in diameter within the caldera rim, and significant ash. From May through July 2006, activity consisted of persistent degassing with 2-3 major explosions per month. Explosions emitted ash to heights of 3 to 4 km and distances up to 40 km. There was one major explosion in both August and September, with slightly shorter column height and ash fallout distances. From November 2006 until the middle of March 2007, Ubinas showed decreasing activity characterized by gas emission to ~500 m above the crater rim. Activity picked up from 29 March through April 2007 with ash emissions to 2 km.

The ash emitted over the course of the eruption is fine, gray, and forms layers that are up to ~10 cm thick within the caldera, and ~2 cm thick at a distance of 6 km. This ash has and continues to affect residents, livestock, water supplies and crop cultivation within an area ~100 km² of the volcano.

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Scientific and Social Response to 2006-07 Activity at Ubinas Volcano, Southern Peru

Nicole Lautze¹, Marco Rivera², Jersy Marino², Lourdes Cacya², Vicentina Cruz, Jean-Claude Thouret³

1. U.S. Geological Survey / USA
 2. Instituto Geologico Minero y Metalurgico [INGEMMET] / Peru
 3. Laboratoire Magmas et Volcans, Universite Blaise-Pascal et CNRS / France
- e-mail: nlautze@usgs.gov

Ubinas is a stratovolcano in the regional district of Moquegua, southern Peru (16° 22' S, 70° 54' O; 5672 masl). Explosive activity began at Ubinas on 27 March 2006, following approximately 8 months of heightened gas emissions. Activity continues to present day as continuous degassing with intermittent Vulcanian explosions that have ejected blocks up to 40 cm to distances of 2 km from the vent. Ash columns rise to 4 km above the crater rim and disperse to distances of 80 km.

Initial explosions spread ashfall within 7 km of the volcano, and in April led the Comité Regional de Defensa Civil de Moquegua (CRDMC) to order the evacuation of >150 people living in the village of Querapi (~4 km from the volcano) to Anascapa (Refugio I, ~8 km from the volcano). Due to substantial increases in volcanic activity through April and May, an integrated scientific committee (with members from Instituto Geologico Minero y Metalurgico [INGEMMET], Instituto Geofisico del Peru [IGP], and the Universidad Nacional San Agustin de Arequipa [IG-UNSA]) recommended that CRDMC increase the level of alert and implement a previously established evacuation plan for five villages in a valley within ~12 km of Ubinas. CRDMC issued the evacuation order, and between June 9-11 approximately 1000 people relocated to a shelter in Chacchagen (Refugio II, ~20 km from the volcano). Though volcanic activity persisted, after ~8 months in Chacchagen, over 85% of evacuees had returned to their places of origin, citing difficult living conditions and lack of productive capacity as their reasons for returning. This presentation will sequentially detail highlights of volcanic activity alongside the key scientific and social responses.

21a-P-10

Volcanic Hazard In Mexico City

Ana Lillian Martin¹, Mauro Valdes¹, Fabiola Mendiola¹

1. Instituto de Geofisica, Universidad Nacional Autonoma de Mexico / Mexico
- e-mail: analil@geofisica.unam.mx

Popocatepetl Volcano, 60 km to the east of Mexico City, which is the political and economic center of the country where over 20 million people live, has been erupting since December 1994. Some of these small eruptions have produced ash fall in the city and caused the airport to be shut once for hours and the second time for several minutes. Ash fall from the June 30, 1997 and July 19, 2003 eruptions, which had plumes 8 and 5 km high above the volcano (13,500 and 10,500 masl), caused traffic congestion, problems with communications and increased pollution. Grain-size analyses shows ash was fine-grained, and although respiratory effects were noted,