



Cities on Volcanoes 9
November 20-25, 2016
Puerto Varas, Chile

'Understanding volcanoes and society: the key for risk mitigation'



Implementation of an Early Warning System in Ecuador: Chiles – Cerro Negro Volcanic Complex

Fernanda Naranjo¹, Pedro Espín¹, Patricia Mothes¹, Javier Jaramillo¹, Javier Santo¹, Edwin Villareal¹, Mario Ruíz¹, Daniel Sierra¹, Edwin Telenchana¹, Marjorie Encalada¹ y Marco Córdova¹

¹ALVO

Key words: Risk management, Ecuadorian border, vigías, early warning system, Chiles and Cerro Negro volcanoes

The Chiles - Cerro Negro volcanic complex (CCNVC) is located on the Ecuador-Colombia border. Starting in May 2014, this volcanic complex and the surrounding area experienced a swarm of thousands of earthquakes. In October 2014, members of the Instituto Geofísico (IG-EPN) visited the area and recognized the need for an increase in the monitoring of the volcanoes and the education of local residents and authorities. Between 2014 and 2016 the IG-EPN enlarged the monitoring network and began providing training to local authorities and, especially inhabitants, through explanation of hazard maps and the recognition of superficial volcanic activity. Furthermore a new network of “vigías” was formed to report any volcanic activity and form a link between the local residents and the scientific community. Due to the success of the vigía network at Tungurahua volcano, the IG-EPN decided that it would be useful to implement the successful work of the Tungurahua “Vigías Network” (local volunteers who report observations about surface volcano activity to the IG) in the town of Tufiño, Carchi Province. However, the population of this town did not consider the possibility of any eruptive activity at Chiles/Cerro Negro volcanoes because there have been no historical eruption at this complex. For this reason, we implemented a series of workshops based on personal cooperation between scientists and a small group of volunteers from the community of Tufiño. The workshops covered aspects about volcanic phenomena, a discussion of the different perceptions of volcanic eruptions with people from Tungurahua and, different techniques of communication via a UHF radio system about how to communicate visual observations of volcanoes accurately. Through participation in these workshops the population acquired the knowledge about volcanic phenomena, enabling them to understand the state of volcanic activity and worked to change their pre-perceptions about potential future volcanic activity in the area.