



Co-designing communication and hazard preparedness strategies at Turrialba volcano, Costa Rica

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Globally volcanic activity results in huge human, social, environmental and economic losses. Disaster risk reduction (DRR) is the concept and systematic practice of reducing disaster risks and associated losses through a wide range of strategies, including efforts to increase knowledge through education and outreach. However, recent studies have shown a substantial gap between risk reduction actions taken at national and local levels, with national policies showing little change at the community level. Yet it is at local levels are where DRR efforts can have the biggest impact.

This research focuses on communicating hazard preparedness strategies at Turrialba volcano, Costa Rica. Located in the Central Cordillera just 35 km northeast of Costa Rica's capital city San Jose this 3,340 m high active stratovolcano looms over Costa Rica's Central Valley, the social and economic hub of the country. Following progressive increases in degassing and seismic activity Turrialba resumed activity in 1996 after more than 100 years of quiescence. Since 2007 it has continuously emitted gas and since 2010 intermittent phreatic explosions accompanied by ash emissions have occurred.

Despite high levels of hazard salience individuals and communities are not or under-prepared to deal with a volcanic eruption. In light of Turrialba's continued activity engaging local communities with disaster risk management is key. At the local levels culture (collective behaviours, interactions, cognitive constructs, and affective understanding) is an important factor in shaping peoples' views, understanding and response to natural phenomena. As such an increasing number of academic studies and intergovernmental organisations advocate for the incorporation of cultural context into disaster risk reduction strategies, which firstly requires documenting people's perception. Therefore approaching community disaster preparedness from a user-centred perspective, through an iterative and collaborative approach, is likely to result in DRR strategies that are considered more applicable and user-friendly by end users.

This work presents results of a disaster preparedness workshop held with local communities around Turrialba. The workshop engaged the community in ideation and designing of concepts to increase levels of hazard preparedness. The concepts resulting from the workshop will be used to develop, through further collaboration with the end-users, DRR strategies tailored to be more relevant and accessible to the public. The approach presented here can equally be applied to the communication of DRR strategies in relation to other (natural) hazards.