



## **Inside the volcanic boiler room: knowledge exchange among stakeholders of volcanic unrest**

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The knowledge of the causative links between subsurface processes, resulting monitoring signals and imminent eruption is incomplete. As a consequence, hazard assessment and risk mitigation strategies are subject to uncertainty. Discussion of unrest and pre-eruptive scenarios with uncertain outcomes are central during the discourse between a variety of stakeholders in volcanic unrest including scientists, emergency managers, policy makers and the public. Drawing from research within the EC FP7 VUELCO project, we argue that knowledge exchange amongst the different stakeholders of volcanic unrest evolves along three dimensions: 1) the identification of knowledge holders (including local communities) and their needs and expectations, 2) vehicles of communication and 3) trust.

In preparing products that feed into risk assessment and management, scientists need to ensure that their deliverables are timely, accurate, clear, understandable and cater to the expectations of emergency managers. The means and content of communication amongst stakeholders need to be defined and adhered to. Finally, efficient and effective interaction between stakeholders is ideally based on mutual trust between those that generate knowledge and those that receive knowledge. For scientists, this entails contextualising volcanic hazard and risk in the framework of environmental and social values.

Periods of volcanic quiescence are ideally suited to test established protocols of engagement between stakeholders in preparation for crises situations. The different roles of stakeholders and associated rules of engagement can be scrutinised and reviewed in antecessum rather than ad-hoc during a crisis situation to avoid issues related to distrust, loss of credibility and overall poor risk management.

We will discuss these themes drawing from exploitation of research results from Mexico and Ecuador.