

Comunicación y divulgación volcanológica para la Gestión del Riesgo de Desastre (GRD)

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Uno de los grandes desafíos de la volcanología es cómo comunicar de manera efectiva sus alcances a la comunidad y a las autoridades para fortalecer la resiliencia de la población frente a los desastres volcánicos. Desafíos que incluye explicar de forma simple procesos y efectos de la actividad volcánica, mantener el interés de la comunidad, autoridades y prensa en periodos sin actividad volcánica, y evitar el sensacionalismo durante las crisis. En este trabajo presentamos las diversas acciones e instrumentos llevados a cabo por el Instituto Milenio de Investigación en Riesgo Volcánico - Ckelar Volcanes, para mejorar la forma en que se comunica la volcanología a la ciudadanía y autoridades. Entre ellas cursos de capacitación a comunidades indígenas aledañas a volcanes en el Desierto de Atacama, charlas de divulgación, ferias científicas, apariciones en prensa, reportajes científicos en TV, columnas de opinión, una fuerte campaña en redes sociales, y mesas de trabajo con autoridades. Estas acciones han permitido: establecer una relación cercana con comunidades vecinas a volcanes activos con transferencia de información científica y observaciones locales, al mismo tiempo, que la incorporación del conocimiento local en nuestro quehacer como instituto; mejorar el conocimiento de volcanología en centros urbanos lejanos a volcanes activos; mantener el interés de la comunidad por la actividad volcánica; incrementar las apariciones en prensa especialmente durante crisis volcánicas con un lenguaje simple y alejado del sensacionalismo periodístico e integrar comités de emergencia regionales durante crisis volcánicas.

Altering perspectives to enhance the efficacy of volcanic hazard communication for decision-makers: Novel approaches in Montserrat, West Indies.

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After an assessment of volcanic hazard has been made, the key next step is the development of an effective communication strategy. The audience for this communication covers people with a wide range of backgrounds. It is therefore necessary to tailor the communication style and strategy to the target audience. This can be done by variations in the language used as well as different methods of representing information.

We have identified a need to enhance our communication strategies with decision makers. This will help us provide information in a form that best supports their ability to make well-informed decisions based on solid evidence. We have sought to focus communication around the objectives and needs of decision makers with the volcano hazard information formulated in a way which best aligns with the concerns and constraints of decision makers.

Through a series of meetings conducted in Montserrat, more effective communication strategies are being investigated and developed. In this innovative approach, the volcanic hazard is repositioned as a background information layer, integrated with other datasets related to other factors of importance to decision makers.

These integrated data are then leveraged as a framework for deliberations regarding prospective developments in areas potentially threatened by volcanic hazards.

In pursuing this strategy, we have established several key objectives:

- Promotion of risk comprehension as a complementary approach to risk calculation.
- Empowering decision makers to integrate relevant information.
- Development of complementary tools to enhance the management of the volcanic hazard information.

Let us know! Have we captured the most important considerations for communicating hazard and uncertainty on maps?

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Volcanic hazard maps are visual, geospatial depictions of the areas that could be impacted by volcanic phenomena before, during, or after an eruption. They are developed to communicate a complex array of hazard information and can be useful tools for conveying challenging information. When they are developed, communicated, and used appropriately for a given volcanic setting and cultural and political context, hazard maps can help guide mitigation measures such as evacuation and land use planning. The IAVCEI Working Group on Hazard Mapping has undertaken a comprehensive review of past and current volcanic hazard mapping practices and associated lessons learned through a series of workshops and related initiatives with volcanologists and stakeholders interested in volcanic hazard maps. These initiatives reveal a rich diversity in volcanic hazard maps and hazard mapping approaches around the world, as well as a wide range in the use and effectiveness of hazard maps. Our insights are now being consolidated into a book, the *IAVCEI Companion to Volcanic Hazard Maps and Map Making*, in which we identify and categorise a suite of good practices and considerations for making volcanic hazard maps. We hope the *Companion* will provide some clarity and documented consensus for the development process, content, design, and format of maps. Our initiative has highlighted the value of sharing volcanic hazard mapping practice. In this poster we present draft excerpts from the *Companion*, and we invite you to let us know if we have captured the most important considerations for communicating hazard and uncertainty on maps.

Scientists as Story-tellers: the explanatory power of stories told about volcanic crises

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We demonstrate how storytelling functions to share and to shape knowledge, particularly when scientific knowledge is uncertain. This is not about sharing the 'story' of research findings relevant to volcanic eruptions but about the sharing of experience, and how that process creates important knowledge about managing and coping with volcanic crises.

Using the example of the Soufrière Hills volcanic eruption (Montserrat), and scientists' experiences of the events during that time, we explore how storytelling (the process) and stories (or narratives) involving scientists can make better sense of volcanic crises, where conditions change rapidly and natural, social, and scientific systems collide. 37 stories were gathered from 7 semi-structured interviews and one group interview (5 scientists). In our example storytelling and stories are used in several ways: (1) evidencing the value of robust long-term monitoring strategies during crises; (2) exploring the current limits of scientific rationality, and the role of instinct in a crisis and (3) examination of the interactions and outcomes of wide-ranging drivers of population risk. More broadly these stories allowed for the emotional intensity of these experiences to be acknowledged and discussed. The process of storytelling and its outcomes are also important.

Thus, through our analysis of the value these stories bring to volcanic risk reduction we argue that scientists create and transmit important knowledge about risk reduction through the stories they tell one another and suggest how storytelling frameworks could be better harnessed in volcanic contexts.

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Communicating low-probability, high-consequence volcano hazards by comparing relative eruptive histories to support community planning for volcano risk management

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Clackamas County, Oregon has a volcano problem in that many residents and visitors do not understand that Mt Hood is an active volcano. That is a problem for local emergency managers who are trying to promote community planning for a low-probability, high-consequence volcano crisis. Local emergency managers rely on the U.S. Geological Survey's Cascades Volcano Observatory for the most effective means to assess the hazards and analyze the risk for the sake of emergency planning and community engagement.

Mt Hood has a moderate amount of population and development exposure and even a minimal level of unrest would be disastrous for Clackamas County. During the past 2,000 years, growth and destruction of Mt Hood's earlier lava domes at the site of Crater Rock have produced hundreds of pyroclastic flows down the southwest flank of the mountain. This broad, smooth side of the mountain is the home of our County's ski resorts, a historical lodge, and a state highway in near proximity, and with residential areas scattered along the river drainages.

One approach to illuminate Mt Hood's recent history of lava dome-building eruptions is to compare the 2004-08 low-impact eruptive episode of nearby Mt Saint Helens to a similar scenario on Mt Hood. While this recent unrest on Mt Saint Helens was benign because there was no near-field development, a similar scale of 36 months of extrusion of semi-solid lava from Mt Hood's Crater Rock area would be catastrophic. Emergency managers can utilize deterministic scenarios such as this for community planning.