

International collaboration towards a global analysis of volcanic hazards and risk

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Approximately 800 million people live within 100km of an active volcano and such environments are often subject to multiple natural hazards. Volcanic eruptions and related volcanic hazards are less frequent than many other natural hazards but when they occur they can have immediate and long-lived impacts so it is important that they are not overlooked in a multi-risk assessment.

Based on experiences to date, it's clear that natural hazards communities need to address a series of challenges in order to move to a multi-hazard approach to risk assessment. Firstly, the need to further develop synergies and coordination within our own communities at local to global scales. Secondly, we must collaborate and identify opportunities for harmonisation across natural hazards communities: for instance, by ensuring our databases are accessible and meet certain standards, a variety of users will be then able to contribute and access data. Thirdly, identifying the scale and breadth of multi-risk assessments needs to be co-defined with decision-makers, which will constrain the relevant potential cascading/compounding hazards to consider. Fourthly, and related to all previous points, multi-risk assessments require multi-risk knowledge, requiring interdisciplinary perspectives, as well as discipline specific expertise.

The Global Volcano Model network (GVM) is a growing international network of (public and private) institutions and organisations, which have the collective aim of identifying and reducing volcanic risks. GVM's values embody collaboration, scientific excellence, open-access (wherever possible) and, above all, public good. GVM highlights and builds on the best research available within the volcanological community, drawing on the work of IAVCEI Commissions and other research initiatives. It also builds on the local knowledge of volcano observatories and collaborating scientists, ensuring that global efforts are underpinned by local evidence.

Some of GVM's most successful achievements to date include (1) the mobilisation and coordination of >130 individuals to produce a substantial and collective contribution to the UNISDR's 2015 Global Assessment Report, including a relative global comparison of volcanic threat, (2) ongoing development of a series of relational databases with consideration of ontologies, standards, access and management, and (3) the first global assessment of ash fall hazard.