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



Misunderstandings in risk communication at long-quiet volcanoes

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Key obstacles to improving resilience against volcanic activity are poor economic resources and the fact that major hazards strike at intervals of several decades or more. As a result of poor resources, fewer than 15% of active volcanoes are being regularly monitored, while the repose intervals are long enough for the collective memory of previous events to have faded. Vulnerable areas thus remain unmonitored, while exposed communities lose knowledge of the threats they may face and scientific advisors lose experience in responding to an emergency. The loss of knowledge and experience promote misunderstandings when communicating advice - and misunderstandings can transform a crisis into a disaster. The Neapolitan Volcanic District is a classic area for investigating changing knowledge and experience after several generations without volcanic activity. The District contains two active mainland volcanoes, Vesuvius and Campi Flegrei, which last erupted in 1944 and 1538, respectively. We have conducted a preliminary study of the level of confidence in emergency communication among the local volcanological community. The results indicate that the community is confident in existing emergency plans, but consider difficulties in communication during an emergency to be inevitable. Primary concerns relate to a lack of scientific understanding amongst the authorities, and a confused public response influenced by expected sensationalism in the media. At the same time, the evaluation of eruption potential varied among volcanologists, with the same volcanoes being described as active or dormant, and with the expected warning times for eruption ranging by an order of magnitude. Such ambiguities in evaluation, or in the choice of jargon to use, may unconsciously favour mixed perceptions of the volcanic threat. Thus, although the volcanological community recognises loss of knowledge among the public during long intervals of repose, it may be less aware of simultaneously losing experience in communicating hazard information.