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



Challenges and implications of international borders for volcano risk management and science diplomacy

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This paper presents results from a recent project that examined the challenge of managing eruptions that affect multiple countries. It initially focusses on the eruption of Puyehue Cordon Caulle in 2011-12, and then considers implications for other contexts using examples (Nabro, 2011; Mount Paektu/Changbaishan). The results suggest that volcanoes are complex social objects as well as scientific ones: they participate in the economic, political and cultural dynamics of a region in locally specific ways, and this is significantly complicated by the presence of an international border. The management of volcanic hazards tends to be organised at national or sub-national level, with volcano observatories providing information to civil defence institutions and governments. However, critical aspects of volcano monitoring undertaken by observatories, such as seismic networks, have to be located on the volcano itself. This creates significant complexities if the volcano is close to an international border, because data sharing arrangements between nations are frequently challenging. While there are many emerging methods that are satellite-based, the importance of a seismic network is widely recognised. Furthermore, alert level systems tend to be nationally specific. These issues and other can be important when an eruption occurs, because they affect the transmission of information to vulnerable communities. In addition, vulnerability itself is a product of institutional, cultural economic and social practices that vary significantly between nations. This paper uses examples to suggest several important factors that affect risk management when multiple nations are involved. It argues that in order to reduce risk in this context, collaboration between nations both in the region and beyond can be critical, and that research that deals with the social, cultural and political aspects of volcanic risk can provide important context during a crisis.