

## **Volcanic activity and environment: Impacts on agriculture and use of geological data to improve recovery processes**

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Volcanic eruptions are dramatic events that can significantly affect the livelihood of surrounding populations, in particular since the fertility of volcanic soils results in them often being used for agricultural purposes. Therefore, when volcanic crises occur, the livelihood of farmers can be strongly affected. The actions taken both by farmers and the authorities during recovery phase from a volcanic eruption are important and will have a strong influence on the ability of local population to regain their financial equilibrium and independence. This study evaluates factors that are critical in the improvement of recovery processes for agricultural areas affected by natural hazards, and in particular volcanic activity. Work was carried on the basis of sites visits, focusing on interviewing scientists involved in the crises and/or local residents and authorities, as well as documentary reviews of past case histories of the handling of natural hazard crises. Four main field visits were carried out: Mts. Pinatubo and Mayon (Philippines), Mt. Unzen (Japan), Mt. Taranaki and heavy snowfalls of 2006 in South Canterbury (New Zealand) and Volcan de Turrialba (Costa Rica). The study reveals that scientists collect information throughout a volcanic crisis that can be used effectively to improve recovery response times in agricultural areas. In order to contribute positively to the recovery of an area, the information supplied needs to be relevant to the area affected which implies a pre-existing knowledge of the specifics of the region depending on the type of crops or animals being raised, as well as of the climatic and seasonal components. In addition, it is important to have already established trusted communication channels between scientists, authorities and local communities through which this information can be transmitted to ensure efficient exchanges of this information. The case studies also show that communities that are organised around a strong support network achieve higher levels of resilience and thereby fare better not only throughout the emergency phase but also at recovery stage.