

Volcanic risk in Santorini Island and first assessment of buildings vulnerability

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ABSTRACT

Recently, in Santorini Island (Greece), different geophysical phenomena have been registered (seismicity, uplift, increased of CO₂ flow). They signal to a possible reactivation of the eruptive phenomena. The expected phenomena are volcanic earthquakes and ash fall.

Santorini is one of the main travel destination in Greece and has a daily presence of around 120,000 visitors in summer, compared with a resident population of approximately 15,000 inhabitants.

The environmental and economic value of Aegean island induced the authors to introduce the analysis of crisis scenario due to volcanic eruption in Santorini, as a case study of European project SNOWBALL (EU FP7, 2014- 2017, 'Lower the impact of aggravating factors in crisis situations thanks to adaptative foresight and decision-support tools').

In this paper, the first activities of study and research developed are illustrated.

They refer to a preliminary identification of the most common typologies of buildings which characterize Santorini Island. They have been identified through surveys in situ conducted on the basis of a protocol identified by the author thanks to their previous experience gained during the process of volcanic risk analyses of Vesuvius and Campi Flegrei areas (Italy).

The whole territory of the island has been analyzed. Seven main typologies and their geographical distribution have been identified.

Through examination of collected data, vulnerability classes concerning the phenomena expected in the case of reactivation of the volcano (earthquake and ash fall) have been assigned for each typology identified.

Preliminary results and remarks are reported in the paper. Further developments of the research and programme steps will be outlined.