



FUTUREVOLC: A European volcanological supersite in Iceland, a monitoring system and network for the future

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FUTUREVOLC is a collaborative project funded through the FP7 Environment call, encompassing 26 partners in 10 countries. The main objectives of FUTUREVOLC are to establish an integrated volcanological monitoring procedure through European collaboration, develop new methods to evaluate volcanic crises, increase scientific understanding of magmatic processes and improve delivery of relevant information to civil protection and authorities. To reach these objectives the project combines broad European expertise in seismology, volcano deformation, volcanic gas and geochemistry, infrasound, eruption monitoring, physical volcanology, satellite studies of plumes, meteorology, ash dispersal forecasting, and civil protection. This European consortium leads the way for multi-national volcanological collaboration with the aim of mitigating the effects of major eruptions that pose cross-border hazards. Iceland is selected as a laboratory supersite area for demonstration because of (i) the relatively high rate of large eruptions with potential for long ranging effects, and (ii) Iceland's capability to produce the near full spectrum of volcano processes at its many different volcano types. Based on present monitoring networks and ongoing research, the project will bridge gaps and combine efforts for a coherent close to-real-time evaluation of the state of Icelandic volcanoes and their unrest. The project will provide timely information on magma movements from combined interpretation of earthquake sources relocated in three-dimensional velocity models, magma sources inferred from ground and space geodetic data, and measurements of volcanic volatiles. For better response during eruptions, the project will develop operational models of magma discharge rate, contributing directly to improved forecasts of ash dispersion. They will help to minimise economic disruption on a European scale during eruptions. By integrating a Volcanic Ash Advisory Centre and a civil protection unit into the project, European citizens will benefit directly from the scientific work of FUTUREVOLC.