



Volcanic Supersites as cross-disciplinary laboratories

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Volcanic Supersites, defined in the frame of the GEO-GSNL Initiative, are usually considered mainly for their geohazard and geological characteristics. However, volcanoes are extremely challenging areas from many other points of view, including environmental and climatic properties, ecosystems, hydrology, soil properties and biogeochemical cycling. Possibly, volcanoes are closer to early Earth conditions than most other types of environment. During FP7, EC effectively fostered the implementation of the European volcano Supersites (Mt. Etna, Campi Flegrei/Vesuvius and Iceland) through the MED-SUV and FUTUREVOLC projects. Currently, the large H2020 project ECOPOTENTIAL (2015-2019, 47 partners, <http://www.ecopotential-project.eu/>) contributes to GEO/GEOSS and to the GEO ECO Initiative, and it is devoted to making best use of remote sensing and in situ data to improve future ecosystem benefits, focusing on a network of Protected Areas of international relevance. In ECOPOTENTIAL, remote sensing and in situ data are collected, processed and used for a better understanding of the ecosystem dynamics, analysing and modelling the effects of global changes on ecosystem functions and services, over an array of different ecosystem types, including mountain, marine, coastal, arid and semi-arid ecosystems, and also areas of volcanic origin such as the Canary and La Reunion Islands. Here, we propose to extend the network of the ECOPOTENTIAL project to include active Volcanic Supersites, such as Mount Etna and other volcanic Protected Areas, and we discuss how they can be included in the framework of the ECOPO-TENTIAL workflow. A coordinated and cross-disciplinary set of studies at these sites should include geological, biological, ecological, biogeochemical, climatic and biogeographical aspects, as well as their relationship with the antropogenic impact on the environment, and aim at the global analysis of the volcanic Earth Critical Zone - namely, the upper layer of the Earth surface between the top of the vegetation and the rock matrix in active volcanic areas and Volcanic Supersites.