



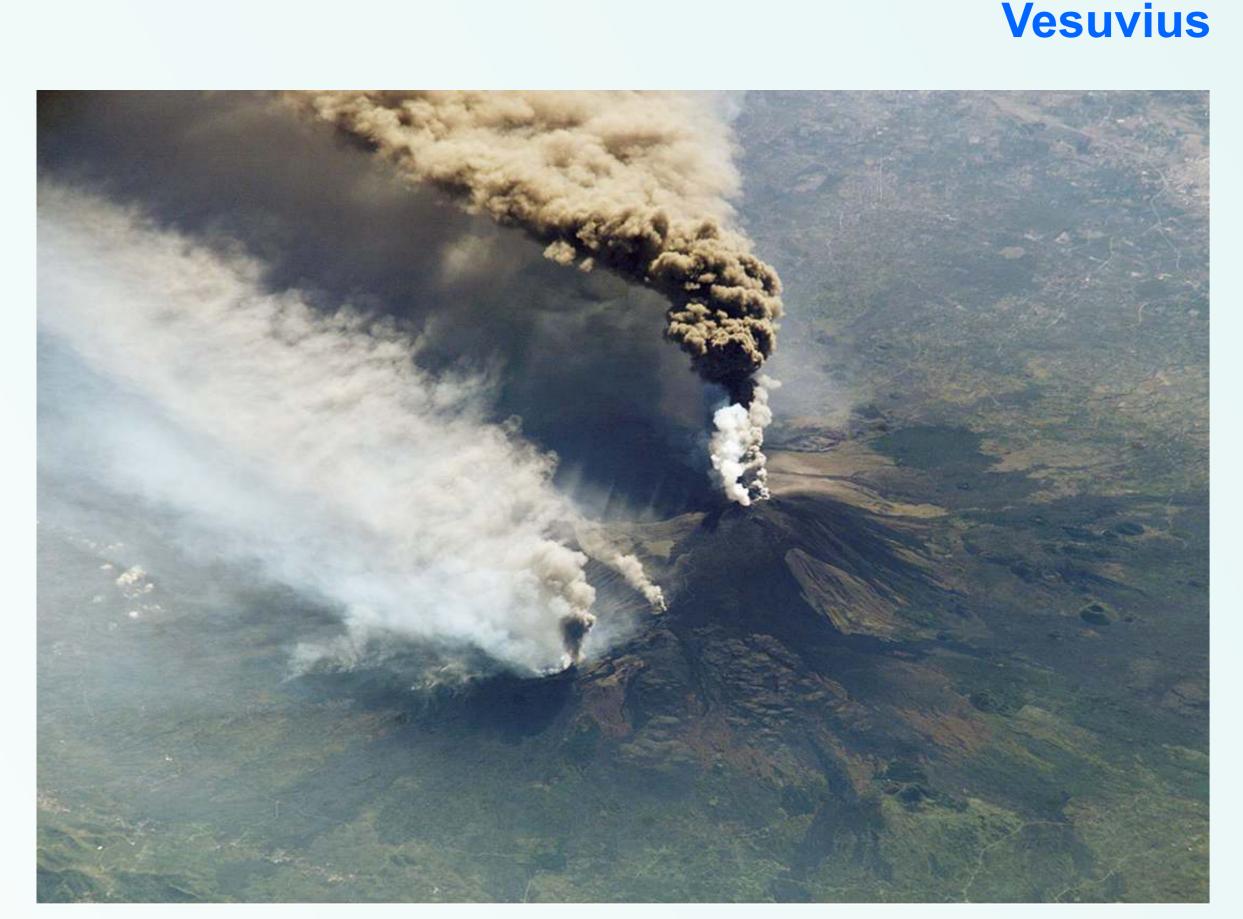
#### A Collaborative EC-FP7 project Submitted to the call: ENV.2012.6.42 Long-term monitoring experiment in geologically active regions of Europe prone to natural hazards: the Supersite concept. **Duration: 3 years**

Starting date: 1 June 2013 Costs: 6 M€ Web-Site: http://med-suv.eu/



Campi Flegrei





## The MEDiterranean SUpersite Volcanoes (MED-SUV) Project: an overview **Giuseppe Puglisi (INGV) and MED-SUV Team Objectives of the project** MED-SUV applies the rationale of the Supersite GEO initiative to Campi Flegrei/Vesuvius and Mt. Etna to reduce the volcanic risk, improving the understanding of the underlying geophysical processes by integration and sharing of in-situ and Earth Observation (EO) data sets and implementation of new instrumentation and volcano monitoring systems. **ITALIAN VOLCANOES:** Earth Observations and In-situ data GEO GROUP ON EARTH OBSERVATIONS - Extremely high hazard and risk - Long-term high quality data sets - Variability of volcanic structures/ Eurasia Plate **Supersite Initiative** behaviours/hazards **High Hazard and Risk**



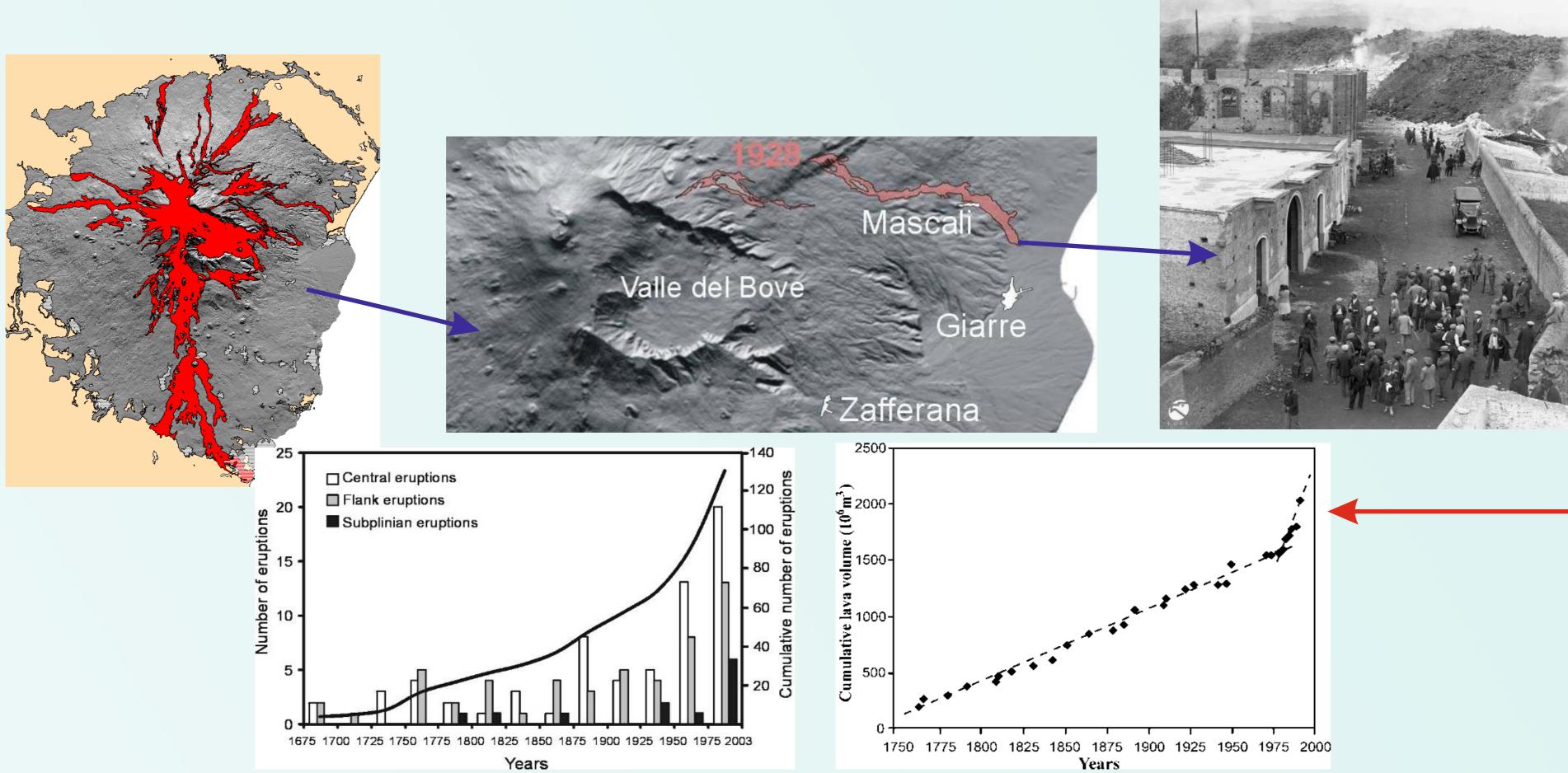
The MED-SUV project will exploit the large remarkable and unique data set on the Cluster of Italian Supersites to gain new insights into the internal dynamics of the volcanoes, and provide answers to the following questions:

- signals?

- Event?

# **Project activities:**

- **1.** Development of the next generation of geomonitoring/ observing systems (WP2, WP3),
- **2.** Characterisation of the volcanic processes by cutting-edge
- data analysis and modelling (WP4, WP5), 3. Strategies for volcanic disaster preparedness and mitigation
- (WP 6),



Mt Etna

Campi Flegrei, Vesuvius and Mt. Etna can be considered, altogether, a Cluster of Supersites in the centre of the Mediterranean area

1- Are the current EO and In-situ observations detailed and accurate enough to capture signals which reflect the internal dynamics and/or eruptive phenomena? How is it possible to improve the quality of these

2-What are the expected effects of magma ascent on the stress/strain field (and vice versa)? 3- How well can we predict the place and time of an eruption or volcanic unrest? 4- How may we optimise the functioning of the chain from observations to end-users during an eruptive

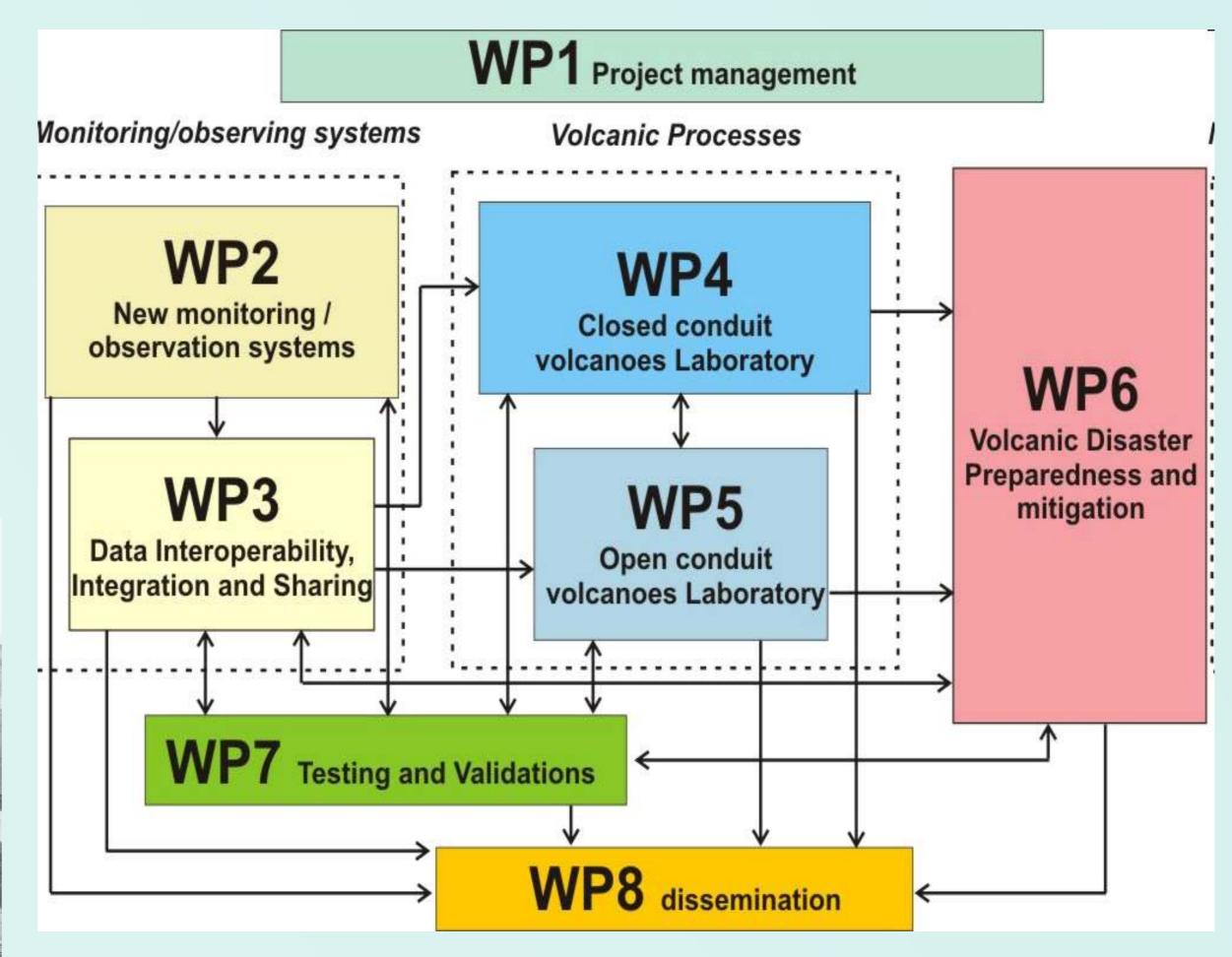
5- How are the project outcomes "exportable" to other active volcanoes?

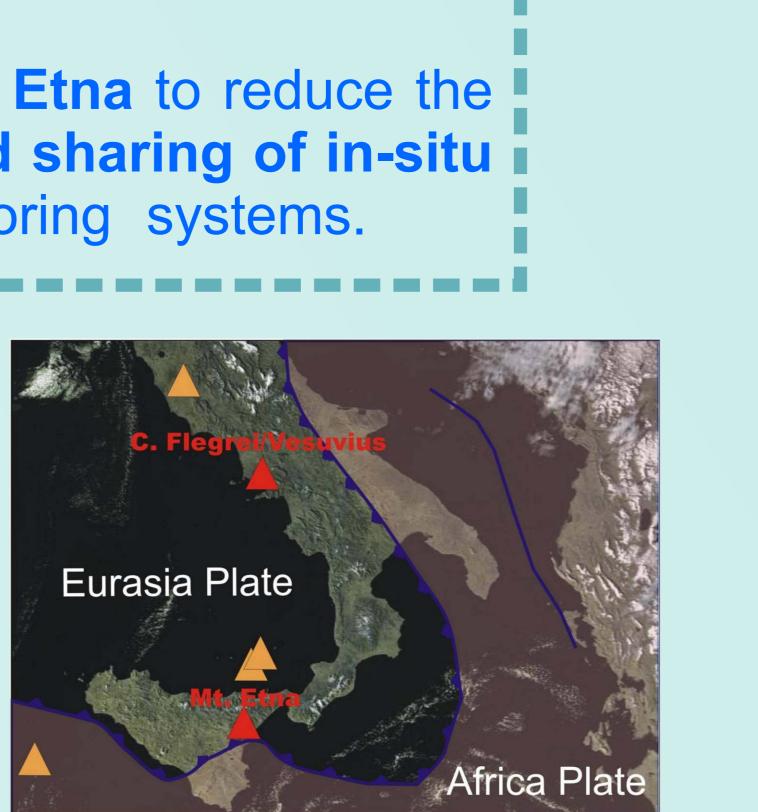
**4.** Test and validation of the project outcomes (WP7), **5.** Dissemination (WP8).











This complex geodynamic context of the central Mediterranean reflects in two different eruptive behaviours: - open conduit (Mt. Etna) - close conduit (Vesuvius and campi Flegrei) The eruptive behaviours encompass almost the entire spectrum of threatening volcanic phenomena; The long-term available monitoring data sets, both In-situ and EO, relevant to pre-, syn- and post-eruptive phases guarantee that the outcomes of the project will be applicable demonstrators for other European/worldwide volcanic areas; The presence of populated areas foster the development of cutting-edges In-situ monitoring systems and background EO missions for a long time (since the

## Main Outcomes:

<b>WP1</b> .	Data Po
<b>NP2.</b>	Prototyp
	system
<b>NP3</b> .	New me
	SO <sub>2</sub> flux
<b>NP4</b> .	Parame
	models
<b>NP5</b> .	Parame
	experim
<b>NP6</b> .	Short-te
	prepare
<b>WP7</b> .	Pilot pha
	de la Fo
<b>NP8.</b>	Web-Sit



### Interaction between volcanoes and society

Example of Mt. Etna flank eruptions: 58 lava flows since 1669

Example of bradyseism at campi Flegrei

Serapeo; 1950





merican Geophysical Union - Fall Meeting 2014 an Francisco (USA), 9-13 Dec 2013 N: NH007, Geohazard Supersites and Natural Laboratorie

Country

Participant legal Name	Country	
Istituto Nazionale di Geofisica e Vulcanologia (INGV) - Coordinator	IT	
Consiglio Nazionale delle Ricerche (CNR)	IT	
Analisi e Monitoraggio del Rschio Ambientale – (AMRA) S.C.A R.L	IT	
Dipartimento di Protezione Civile (DPC)	IT	
Universtià di Milano (UMIL)	IT	
Deutsches Zentrum für Luft- und Raumfahrt (DLR)	DE	
Ludwig-Maximilians-University Munich (LMU)	DE	
Helmholtz-Zentrum Potsdam Deutsches GeoForschungsZentrum (GFZ)	DE	
Durham University (UNIVDUR)	UK	
University of Bristol (UNIBRIS)	UK	
Centre national de la recherche scientifique (CNRS)	FR	
Bureau de Recherches Géologiques et Minières (BRGM)	FR	
Université "Blaise Pascal" de Clermont-Ferrand (UBP)	FR	
European Space Agency (ESA)	FR	
Agencia Estatal Consejo Superior de Investigaciones Científicas (CSIC)	ES	
University of Granada (UGR)	ES	
Universidade dos Açores (UAc)	PT	
University of Malta (UoM)	MT	
University of Western Ontario (UNIWO)	CA	
United States Geological Survey – Hawaiian Volcano Observatory (USGS-HVO)	US	
DeltaG – SME	IT	
Surveylab - SME	IT	
Marwan Technology (MATEC) - SME	IT	
Terradue (T2) - SME	UK	
A CNRS MRII: Institut de Physique du Globe de Paris (IPGP): Institut des Sciences de la terre		

rticinant logal Name

d'Orléans (ISTO); Laboratoire de Géologie de l'Ecole Normale Supérieure (ENS); Institut des Sciences de la terr Sciences de la Terre (ISTerre).

olicy, Strategies for long-term sustainability

pes of an automated TSX system; FBG sensors; data-logger; for optimization and image processing

ethods for integrating EO and in-situ data (ground deformations, x, etc.); E-Infrastructure for data sharing,

etrization of geochemical/geophysical signals, cutting edge of interacion between magmatic and hydrothermal systems strization of geochemical/geophysical signals, TOMO-Etna nent, global and local-scale cutting-edge models.

erm hazard assesment tools; guidelines for hazard edness and awaredness

nase on Supersite volcanoes; transfer to/from Azores and Piton ournaise.

ite, videos

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Serapeo; 2007

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INGV Osservatorio Etnec