LAMPRE

LAndslide Modelling and tools
for vulnerability assessment Preparedness
and REcovery management

Fostering Copernicus downstream services for landslide hazards through innovative research and technological developments.

Understanding vulnerability to landslides

The FP7 LAMPRE project executes innovative research and technological developments to cope with triggered landslide events and their consequences in Europe and elsewhere.

This two-years research project:

- Enhances landslide risk mitigation/preparedness efforts, post-event-landslide recovery and reconstruction activities in highly vulnerable geographic and geologic regions.
- Improves the ability to detect/map landslides, assess/forecast the impact of triggered landslide events on vulnerable elements, and model landscape changes caused by slope failures.
- Exploits and develops existing Earth Observation imagery to prepare event, seasonal and multi-temporal landslide maps.
- Improves the response capacity from Civil Protection Authorities through products for preparedness/mitigation & recovery reconstruction phases.
- Assesses the economic sustainability and facilitates the uptake of the LAMPRE downstream service.

### Innovative research and exploitation activities

LAMPRE pursues its goals by:

- Researching and developing new techniques and products to dynamically integrate satellite/airborne imagery.
- Designing and using intelligent image processing techniques.
- Modelling landslide-infrastructure interactions using advanced numerical modeling and ground based thematic information.
- Developing standards for landslide mapping, susceptibility zonation and image processing.

Products, services and knowledge to protect people, infrastructures and the environment

Products of LAMPRE, including geo-processing tools, landslide inventory/susceptibility maps, vulnerability/impact assessments, and standards and best practices can benefit a wide range of users:

- Civil Protection Authorities responsible for managing emergency and crisis situations posed by destructive natural events.
- Environmental, agricultural, forestry and ecology agencies, organizations managing transportation networks.
- Organizations responsible for managing emergency & crisis situations posed by destructive natural events.
- Public organizations and private companies managing, monitoring, and maintaining transportation networks.
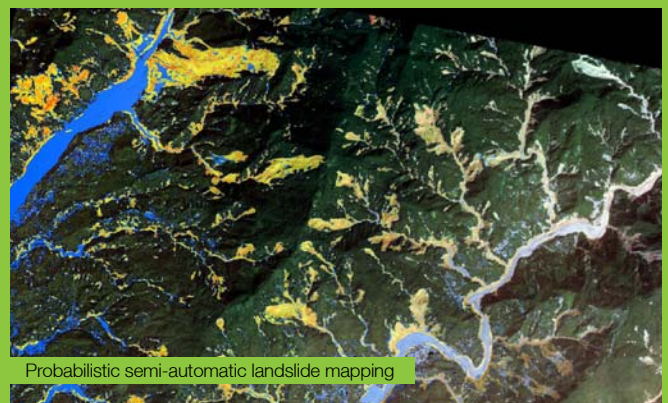
Probabilistic semi-automatic landslide mapping

A wide range of relevant test sites to guarantee worldwide impact

The products and services of LAMPRE are tested in different study areas selected to represent a wide range of physiographical and environmental settings, including:

1. Assisi and Collazzone, Umbria, Italy
2. Messina Province, Sicily, Italy
3. Liguria (Pogliaschina), Italy
4. Tramuntana Range, Palma de Mallorca, Spain
5. Zermatt and St. Moritz-Engadin Valley, Switzerland
6. Kaohsiung catchment, Taiwan
7. El Portalet, Pyrenees, Spain
8. Escazú, Costa Rica

Results and impacts with strategic European relevance

Results of LAMPRE contribute to:
- The EU strategy for the prevention, preparedness and response to natural hazards, and the protection of people, property, infrastructures and the environment.
- The EU Soil Thematic Strategy.
- The design of novel GMES landslide services based on data from the ESA Sentinel-2 satellites.

An international Stakeholder User Group (SUG)

composed of civil Protection authorities, technical and geological surveys, space agencies, image and service providers, core and downstream services in Europe and worldwide, gives strategic advice on the quality and usability of the products and services designed by LAMPRE.

If you are interested to receive more information, please contact the project coordinator:

Fausto Guzzetti *Consiglio Nazionale delle Ricerche, Istituto di Ricerca per la Protezione Idrogeologica*

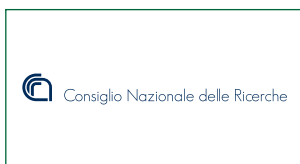**+39 075 501 4402 - project.office@lampre-project.eu**
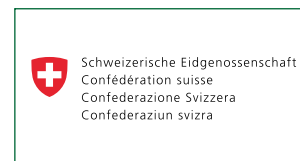
www.lampre-project.eu

A well-balanced consortium

The project is conducted by a consortium of 10 partners and coordinated by the Consiglio Nazionale delle Ricerche (CNR).

End-users

PROTEZIONE CIVILE
Presidenza del Consiglio dei Ministri
Dipartimento della Protezione Civile

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Research Organizations

Consiglio Nazionale delle Ricerche

KING'S College LONDON

MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD — Instituto Geológico y Minero de España

UNIVERSITÀ DEGLI STUDI FIRENZE — DST DIPARTIMENTO DI SCIENZE DELLA TERRA

Companies

ALTAMIRA INFORMATION

GEOMATRIX UAB — Extreme GEO-computing

strategy&
Formerly Booz & Company

UMBERTOPERNICE
managing collaborative innovation

Design by Arthos.it