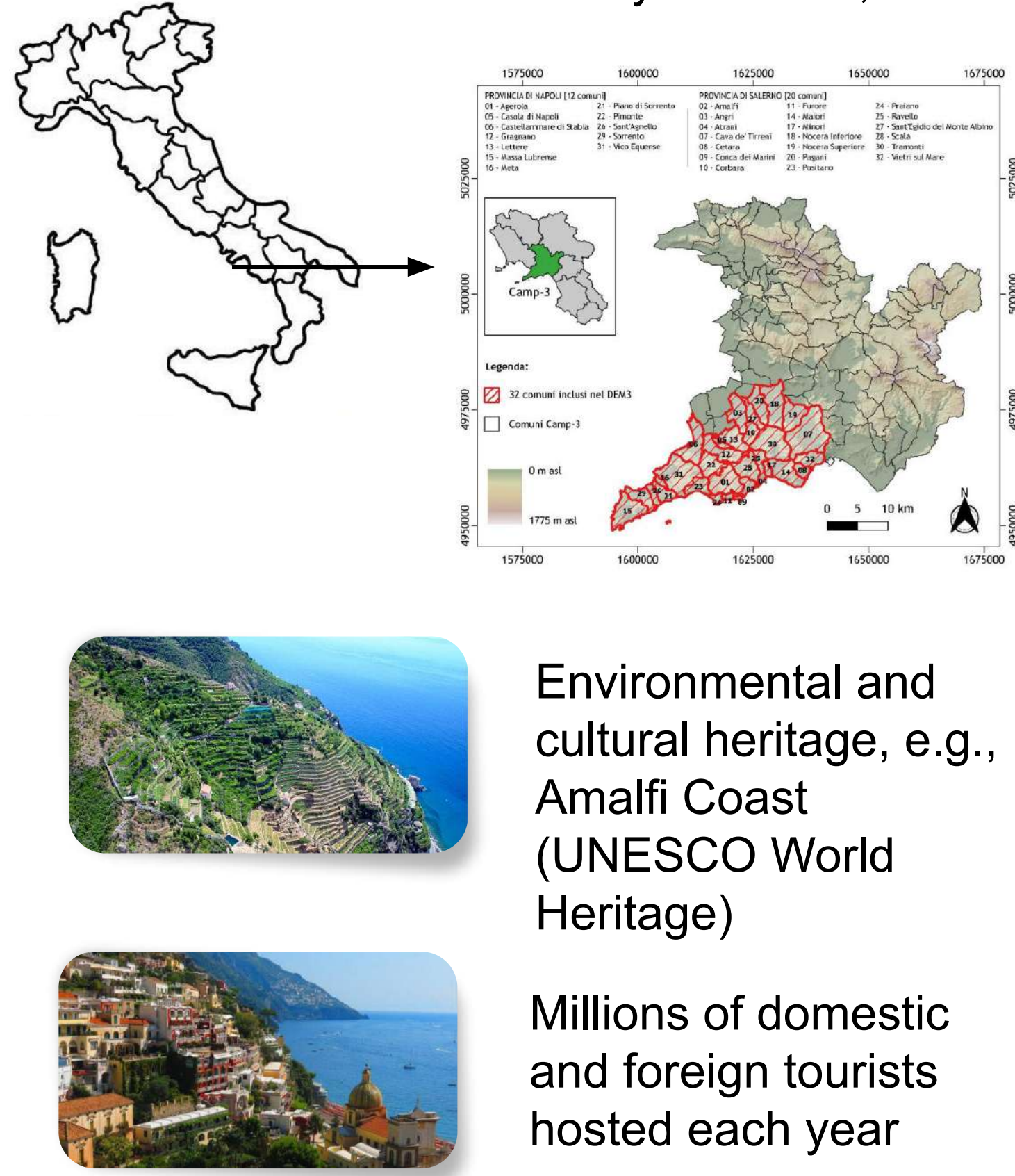
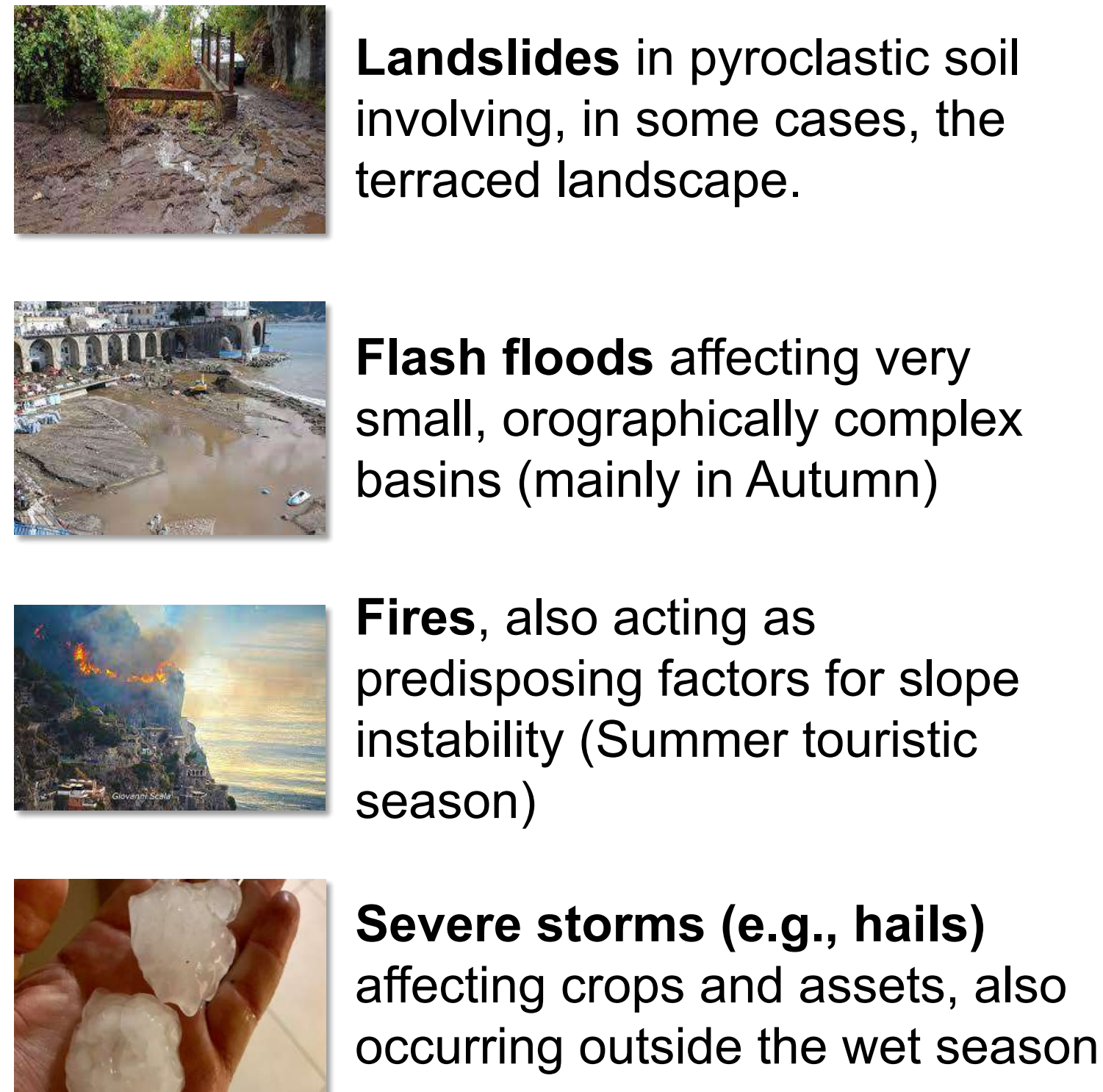


## The context

Southern Italy: 300 km<sup>2</sup>, 32 municipalities, about 450K inhabitants



## Main hazards tackled



## Main innovations developed

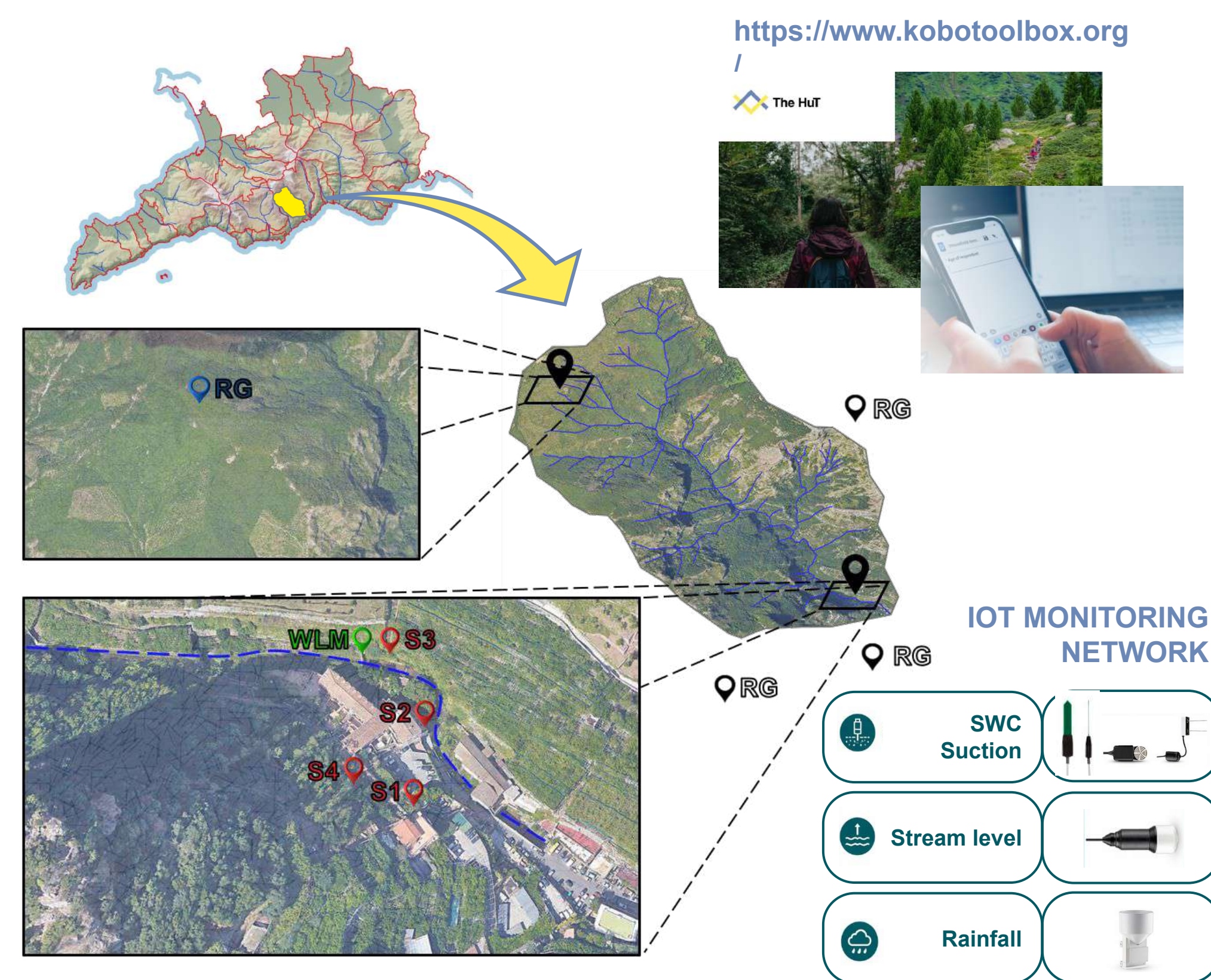
- ❑ **Decision support tool (dashboard & mobile App “The HuT IoT”)**: to support local administrators in managing weather-induced emergencies by providing monitoring data, asset and vulnerability mapping, and meteorological forecasts.
- ❑ **Community monitoring**: developed in the KoboToolbox environment for collecting reports from hikers and trekkers on potential hazards that are difficult to monitor in mountain areas.
- ❑ **IoT monitoring**: installation of low-cost sensors in areas insufficiently covered, or for variables not currently monitored, that regulate the occurrence of climate/weather-driven phenomena.
- ❑ **Serious Gaming**: to raise community awareness (targeting high school students) on landslide risk assessment and the identification of adaptation measures. It is complemented by educational material for in-class lessons.
- ❑ **Innovative insurance mechanisms**: prototype parametric insurance products (with payouts not subject to expert verification) designed to provide an initial compensation that covers immediate expenses in the aftermath of an event.
- ❑ **Climate proofing planning**: application of a reversal impact chain approach (from impacts back to drivers) to the design of weather-affected infrastructures (e.g. sewage systems), accounting for the potential effects of climate change.

## IoT monitoring and multi-platform decision support tool

### What

Field monitoring focuses on installing stations designed to measure volumetric water content and soil suction, alongside rainfall as the primary forcing variable and streamflow in small torrential watercourses.

In addition, community monitoring relies on a dedicated application developed within the KoboToolbox collaborative platform to collect georeferenced reports, photographs, and further descriptive information on hydrogeological events and their impacts.

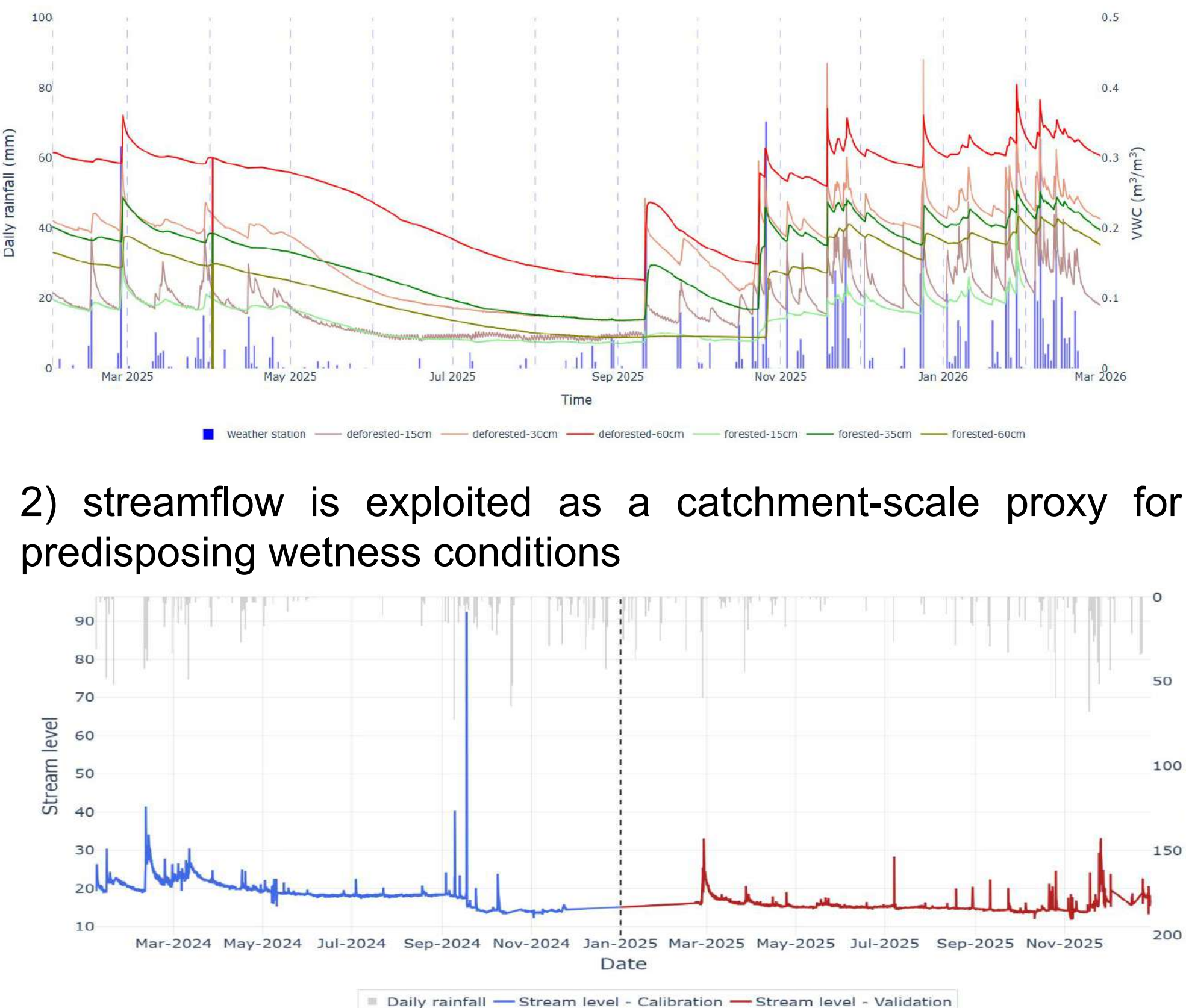


### Why

Field monitoring addresses two well-documented structural gaps: insufficient spatial coverage of observations of rainfall forcing; complete absence of soil moisture monitoring from the official regional network.

Two elements distinguish this approach as innovative:

- 1) measurements are not intended to provide absolute soil moisture values but to detect anomalies with respect to local conditions and climatological baselines
- 2) streamflow is exploited as a catchment-scale proxy for predisposing wetness conditions



### How

A dashboard accessible from both desktop and mobile devices is designed as a one-stop-shop for information management. It does not generate new data but rather optimizes access to existing information, particularly during the critical phases preceding or immediately following a potential geo-hydrological event. The technological development was led by one of the project partners, ARANTEC, which drew on experience gained from other decision-support tools.



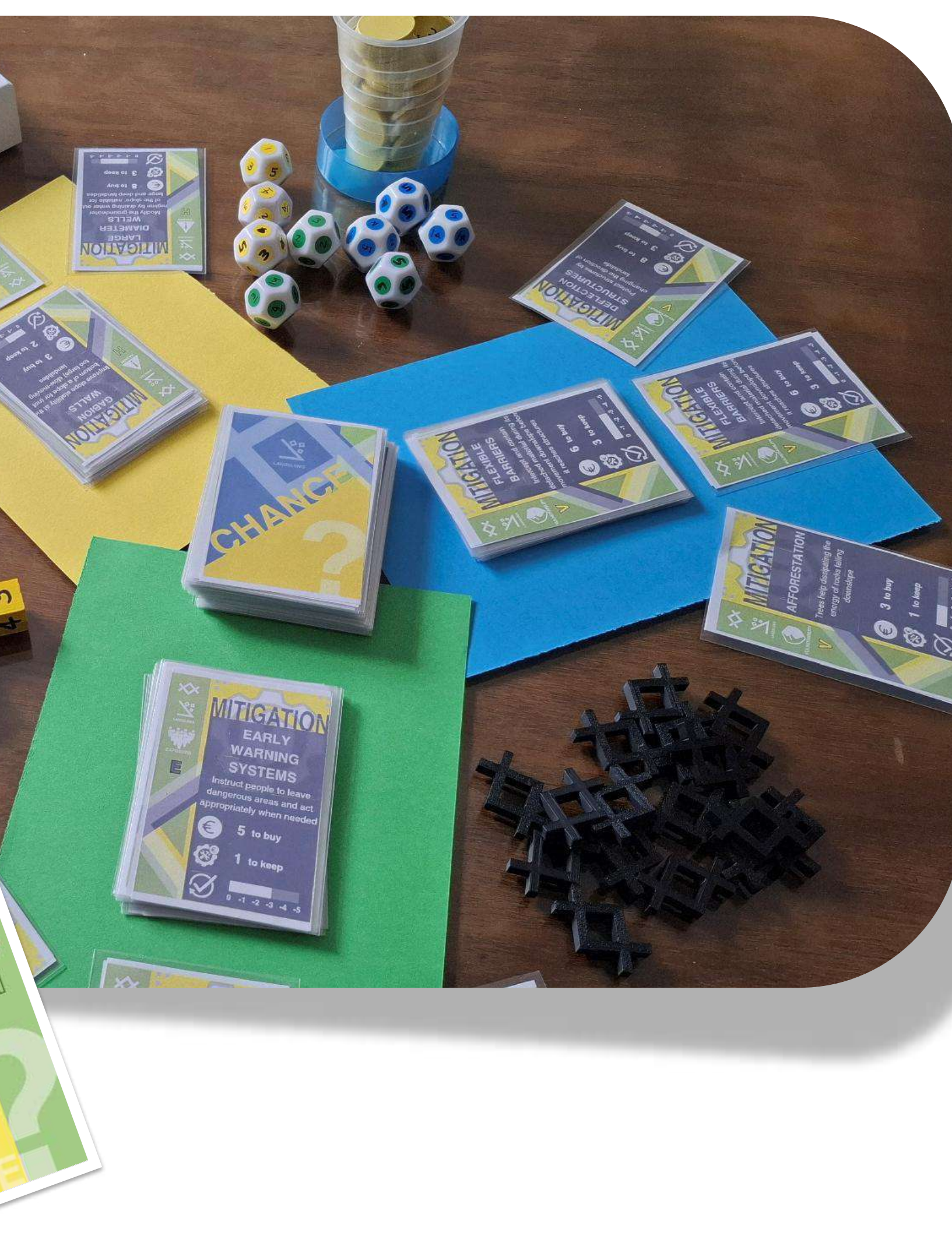
## Safe Haven “Landslides”

### What

Serious gaming has become an increasingly valuable approach for environmental and risk education, combining interactive simulations with real decision-making scenarios to support critical thinking and behavioural change. In this context, Safe Haven “Landslides”, a serious game designed for landslide risk communication, has been released both as a board game and as a mobile application, reaching as primary target high-school students and digital learning forms.

### Why

“Safe Haven – Landslides” also serves a broader purpose by supporting the improvement of disaster risk literacy, defined as “the ability of an individual to access, read, understand, and use the information necessary to make informed decisions and follow instructions in the context of mitigation, preparation, response, and recovery during a disaster.”



### How

“Safe Haven – Landslides” has undergone an extended testing phase with a variety of audiences (FuturoRemoto, EGU 2024 and 2025) to assess several key aspects of the game:

- ✓ scientific robustness;
- ✓ playability, i.e., how enjoyable and engaging the gameplay experience truly was;
- ✓ role of game master (if not playing with pre-set scenarios), in guiding and regulating game dynamics.

