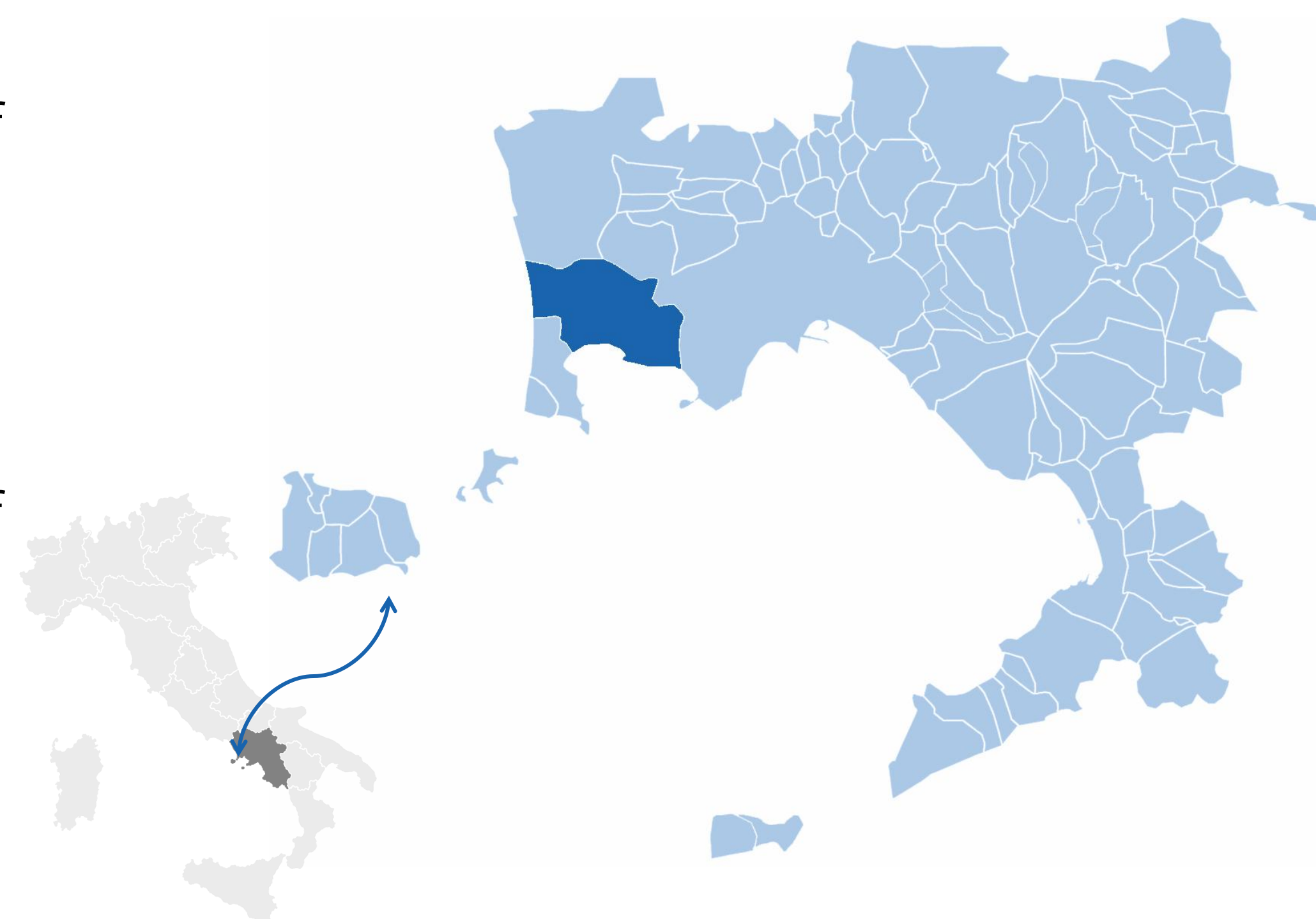


- Pozzuoli is located within the **Campi Flegrei caldera (Southern Italy)**, one of the most active volcanic areas in Europe.
- The area is affected by **seismicity, ground deformation (bradyseism) and volcanic activity**, with high exposure of urban areas.
- The current unrest phase includes:
 - Ground uplift of **+152.5 cm since 2005**
 - Increasing seismicity (**Mmax 4.6**)
 - **Damage to buildings and evacuations**



- Italy
- Campania Region
- Metropolitan City of Naples
- Pozzuoli



Earthquakes



Volcanic Eruptions

Main hazards addressed

Challenges

- Complex **multi-hazard environment**
- High uncertainty in volcanic evolution
- Need for **rapid impact-based information**
- High population exposure
- Limited operational resources
- Need to support **real-time decision-making**

GOBEYOND solution

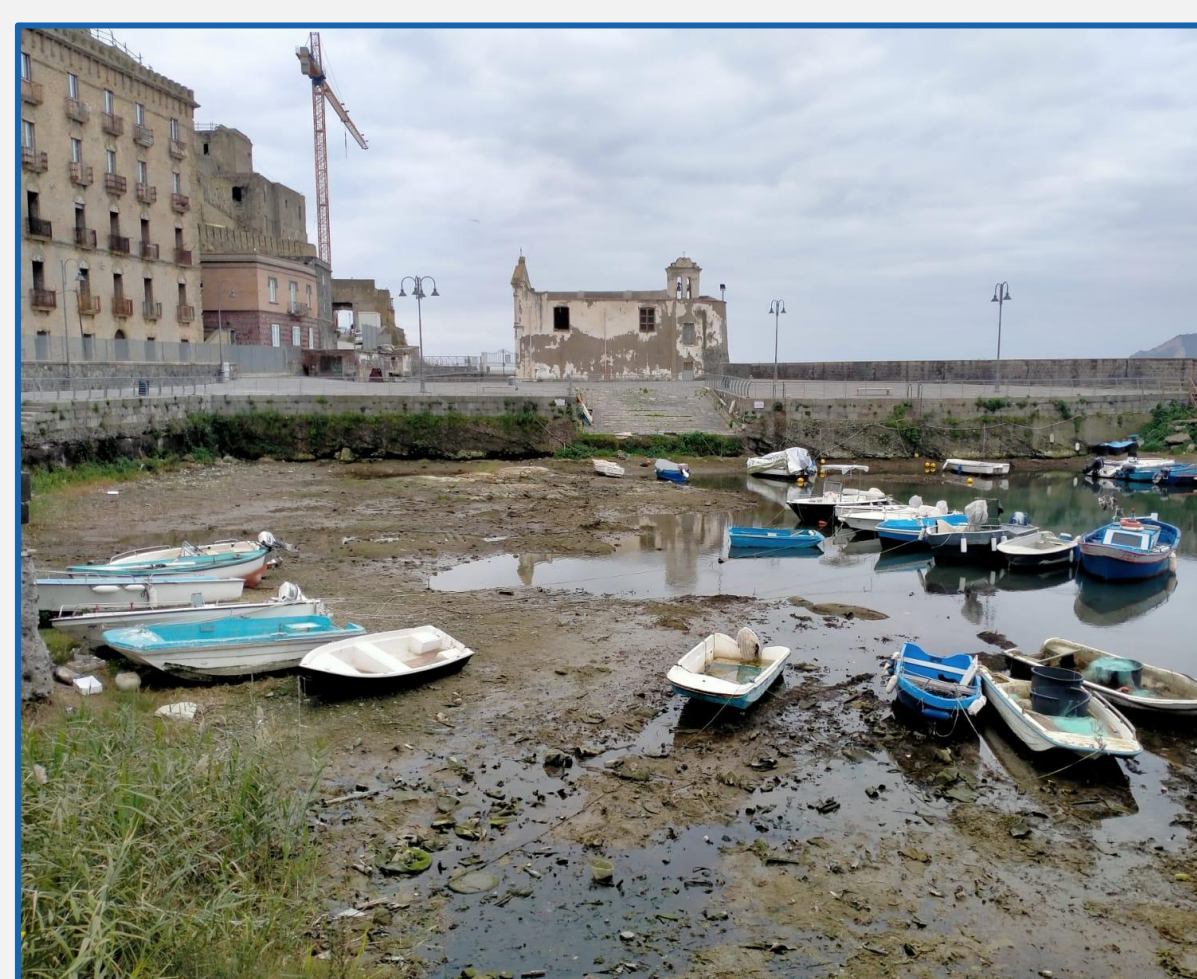
- The pilot implements an **impact-based decision-support system** integrating scientific models and monitoring data.
- Key functionalities:
 - Near real-time earthquake impact assessment
 - Scenario-based **ash fall impact estimation**
 - Integrated visualization of hazard and impact
- Outputs are provided on a **250×250 m grid**, enabling detailed spatial analysis to support emergency management.



Tempio di Serapide: 1930



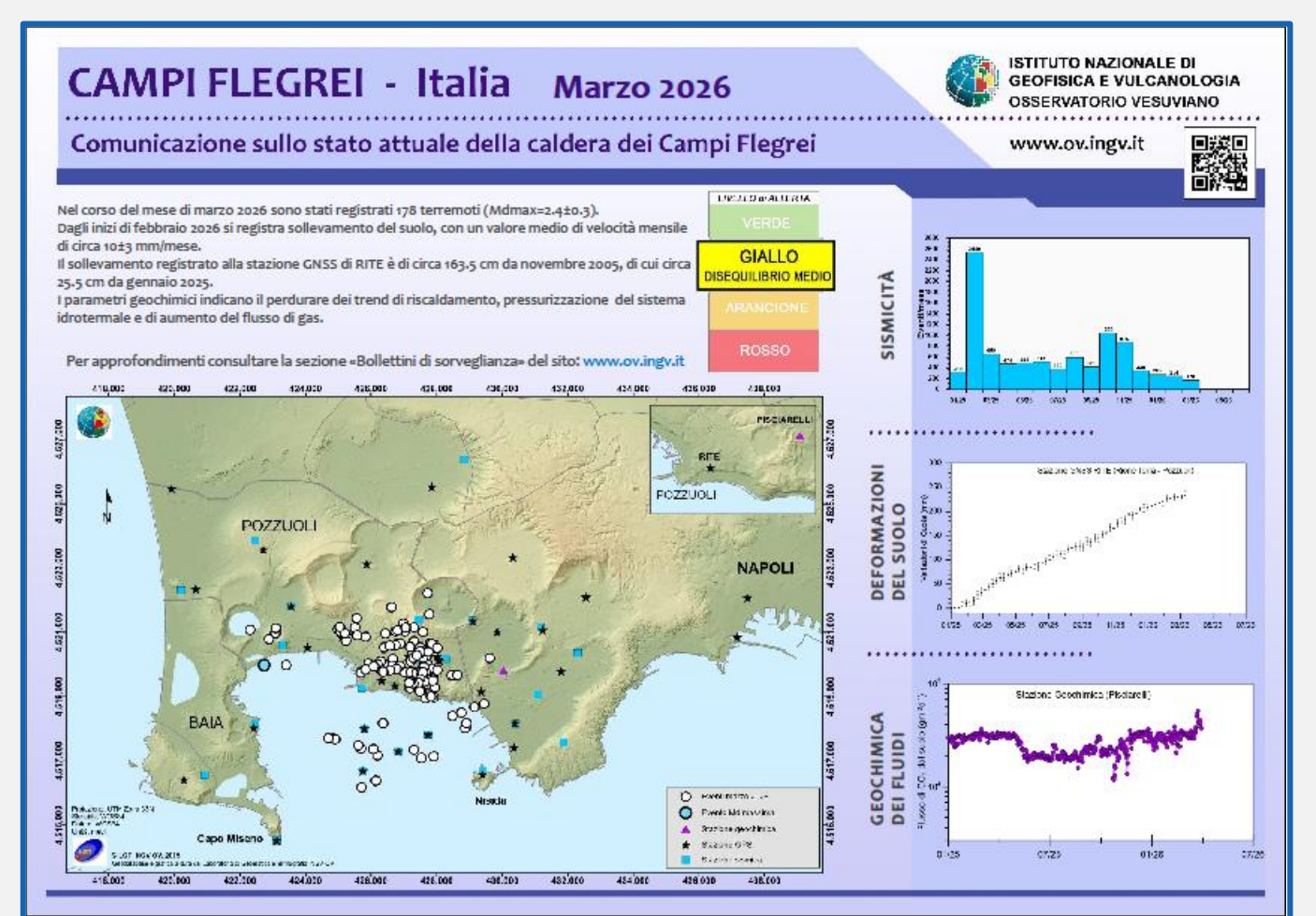
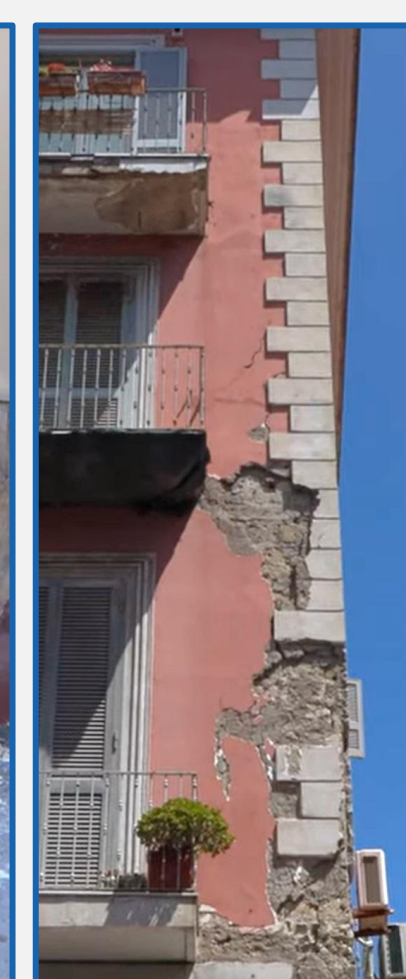
Tempio di Serapide: today



Darsena: today



Damage to buildings



Current state of the Campi Flegrei caldera

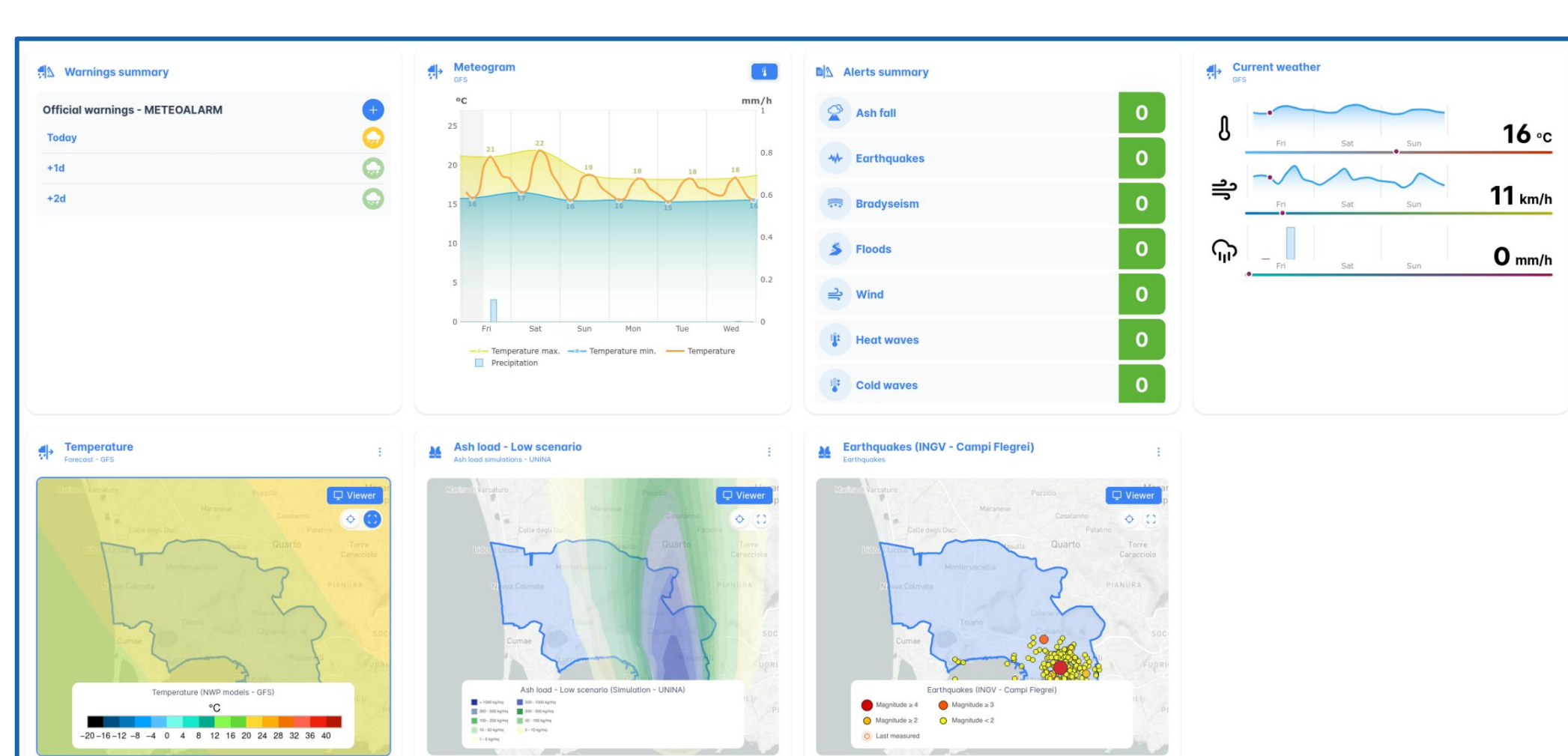
Use case & results

(Tested scenario: seismic events during volcanic unrest)

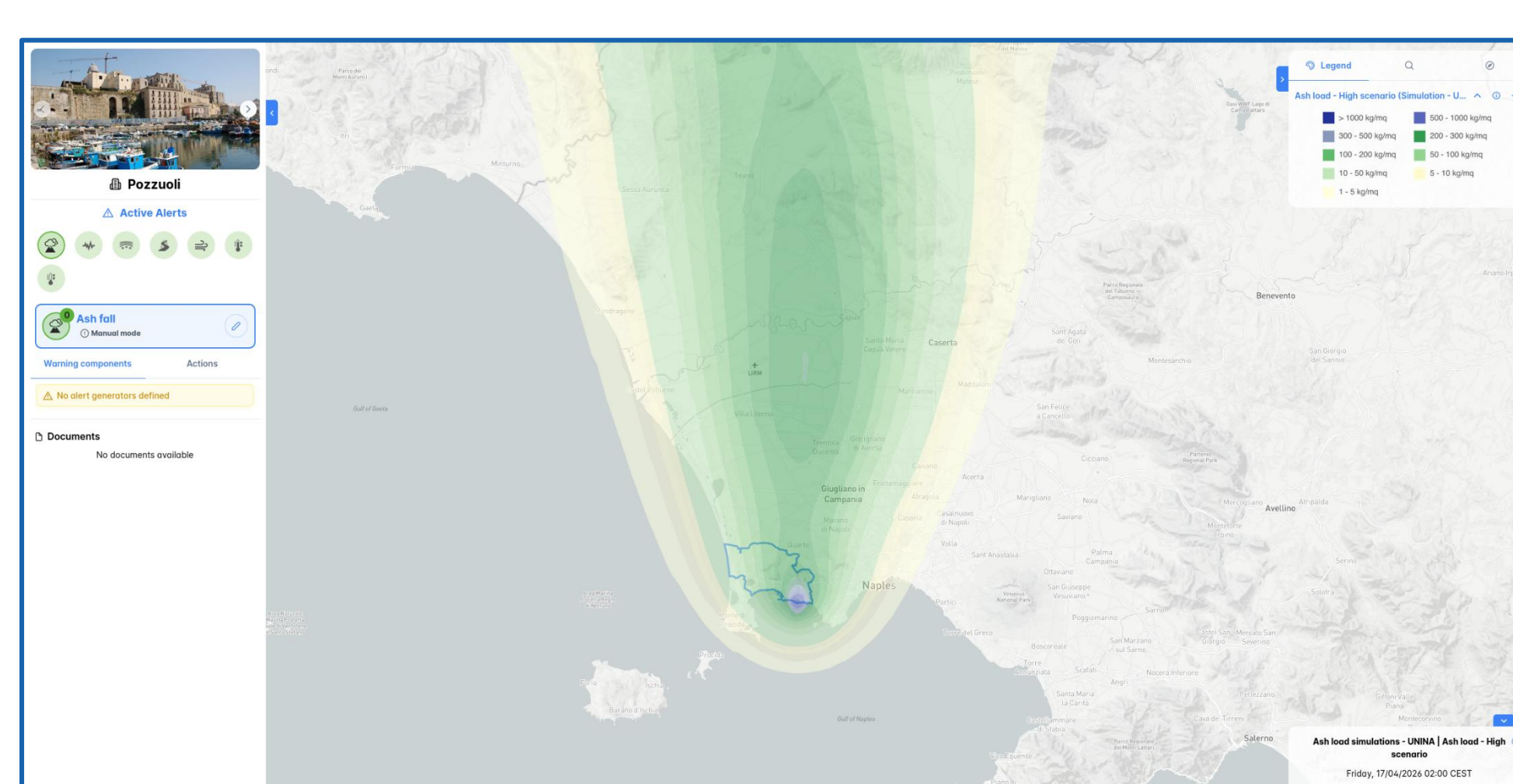
- Tested:** near real-time seismic data processing impact map generation operational visualization
- Results:** rapid identification of most affected areas improved situational awareness support to response prioritization
- Added value:** translating scientific data into actionable information for civil protection

Lessons learned

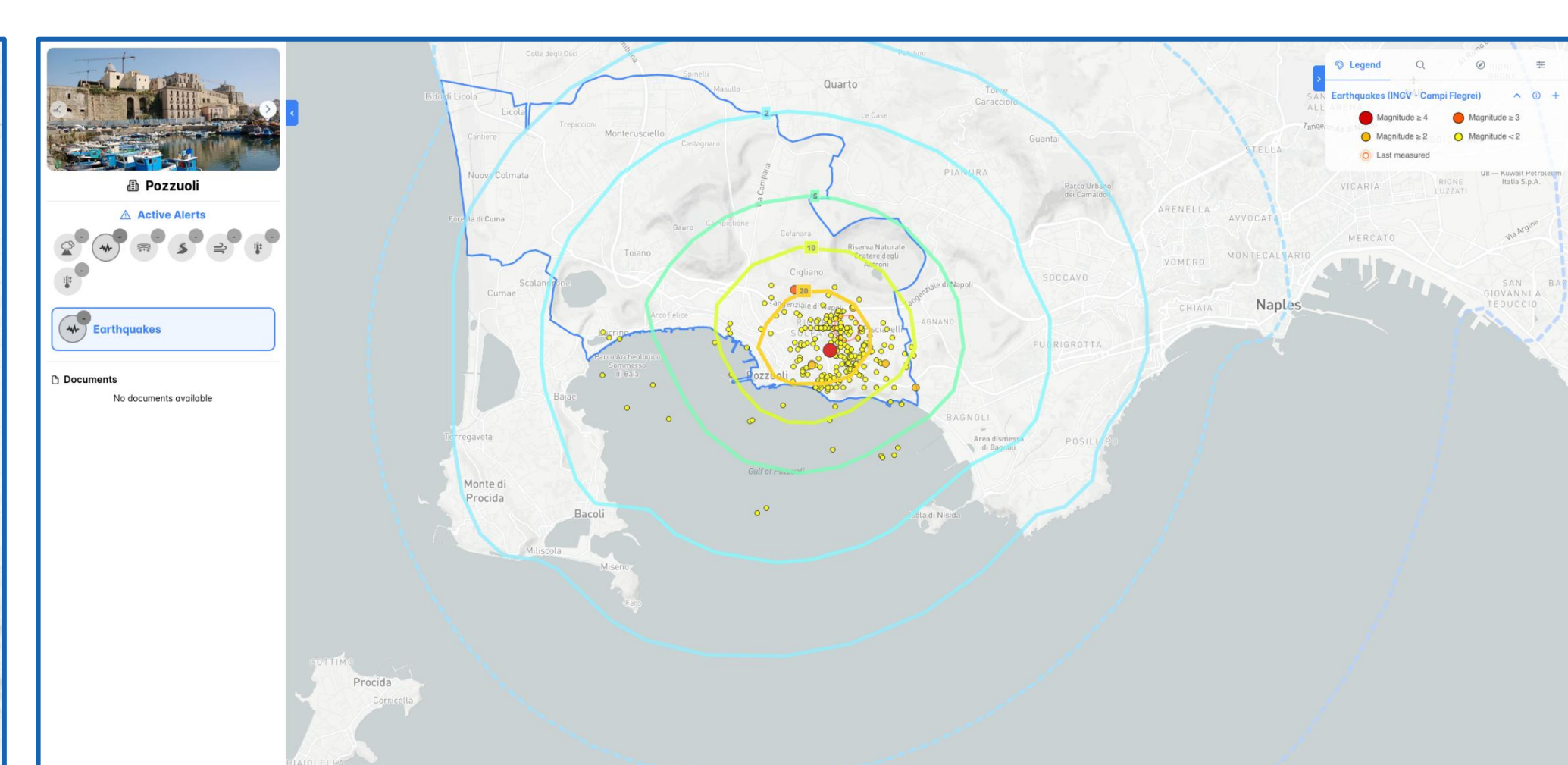
- Impact-based tools are essential in **complex multi-risk environments**
- Strong need for **integration of local data**
- User interaction is crucial for usability
- Continuous updates required for operational use
- Next steps:**
 - Improved ground motion modelling
 - Enhanced ash fall simulations
 - Further operational integration



Platform dashboard



Scenario ash fall



Earthquakes ShakeMap