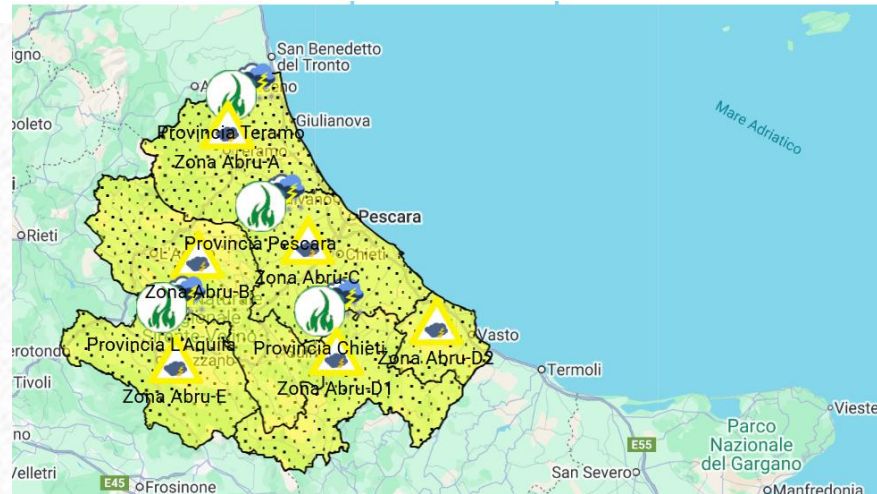# Integrated Forecasting and Warning System for Hydro-Meteorological Risk in Abruzzo ITALY

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1° FutureMed Workshop & Training School
October 1, 2025 Chania Greece

The Challenge of Mediterranean Areas

1) Increasing exposure of the Abruzzo region to hydro-meteorological risks (floods, landslides, extreme weather)

2) Need of Increased Responsiveness to extreme events

3) Need for integrated forecasting and early warning tools

4) Local Authorities needs support to cope with climate change emergency and develop adaptation strategies

Integrated Forecasting and Warning System
AllarMeteo

AllarMeteo is a technological infrastructure for social and private alert reporting.
Citizen can contribute by reporting issues to the relevant authorities and participating in resolving cases.

The Alarm meteo is composed of a multiwarning system:
Hydrologic
Wildfire
Avalanche
Meteo (wind, Temperature, rainfall, snowfall, storms)

The system is automised with local actors which receives in realtime SMS, emails, and institututional certified emails containing a brief text of the forecasted risk 24 hs before the event.
Additionally, the message is linked to a vademecum of good practices in case of extreme events.

30-09-2025 17:03 AVVISO DI CONDIZIONI METEOROLOGICHE AVVERSE DEL 30 SETTEMBRE 2025 PER PROVINCIA TERAMO

Mappa ▾ | Mappa di Criticità 01-10-2025 | Mappa di Criticità Domani 02-10-2025 | Bollettino MeteoMont | Bollettino Valanghe 08-05-2025

Provincia Teramo
Zona Abru-A

Provincia Pescara
Zona Abru-C

Zona Abru-B

Provincia L'Aquila

Provincia Chieti

Zona Abru-D2

Zona Abru-E

Zona Abru-D1

Legenda

- 🟩 Assenza di fenomeni significativi prevedibili / Nessuna Allerta
- 🟨 Ordinaria criticità per rischio idrogeologico localizzato / Allerta gialla
- 🟨 Ordinaria criticità per rischio idraulico diffuso / Allerta gialla
- 🟨 Ordinaria criticità per rischio Idrogeologico temporali / Allerta gialla
- 🟧 Moderata criticità per rischio idrogeologico localizzato / Allerta arancione
- 🟧 Moderata criticità per rischio idraulico diffuso / Allerta arancione
- 🟧 Moderata criticità per rischio Idrogeologico temporali / Allerta arancione
- 🟥 Elevata criticità per rischio idrogeologico localizzato / Allerta rossa
- 🟥 Elevata criticità per rischio idraulico diffuso / Allerta rossa

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Integrated Forecasting and Warning System
AllarMeteo

Forecasting: advanced meteorological and hydrological models

The sensor detection network is one of the oldest in Italy and since 1909 data series have been collected. The Hydrogeological annals allowed the improvement on the accuracy of the forecasting model

ADDITIONAL FUTURES

📢 Warning: multi-channel alert system (Civil Protection, local authorities, citizens)

🌍 Data Integration: monitoring networks and territorial databases.

⚒ Decision Support: operational tools for emergency planning and management.

Climate Resilience Impact from AllarMeteo application at Regional Level (2011-2025)

1.   Improved prevention and responsivenes to extreme events

2.   Improved Operational support for Civil Protection and local administrations

3.   Reduction of economic and social losses due to better forecasting of intervention

4.   Strengthening regional climate resilience as AllarMeteo can Monitor the event during its occurrence

5.   Downscaling of the intervention action at larger resolution scale through AlarmMeteo for rainfall events in correspondance to the severity of attention level.

6.   The region has been divided into 6 zones which are similar per precipitation hystorical and re-occurrence of extreme events

Climate Resilience Impact from AllarMeteo application at Regional Level (NEW 2026)
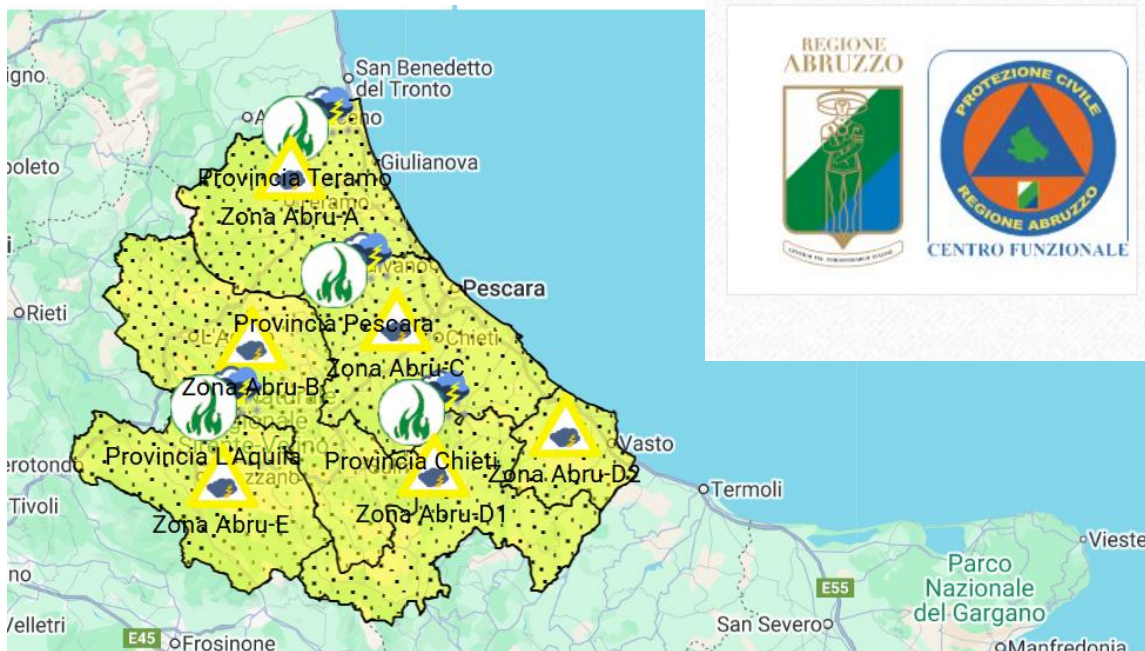

Climate change impacted the Regional Landscape of intervention and Forecasting for extreme Events.

From 2026 following the forecasting annual analysis:

!!!!! Zone (7)- Tirino will be excluded from the other zones and set a new ZONE definition

THANK YOU

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