

Co-Creating Cloud-Based Tools for Urban Climate-Resilience: The CLIMRES Project

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1. The Project

The CLIMRES project aims to promote “Leadership for Climate Resilient Buildings” by identifying **building vulnerabilities** and enhancing their **resilience to disruptive events and changing conditions caused by climate change**.



2. Concept

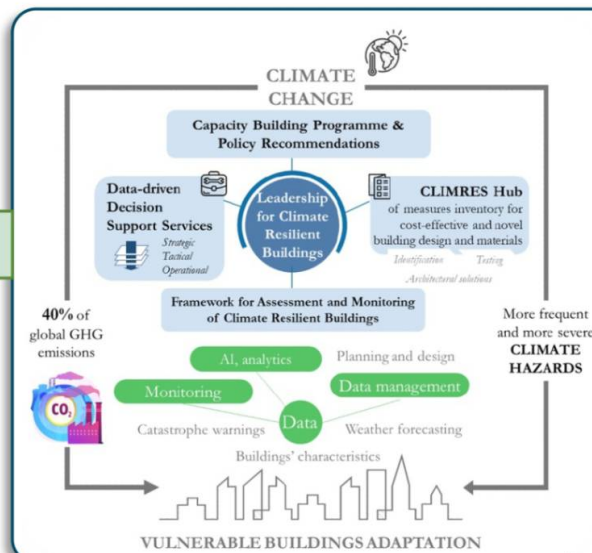
CLIMRES supports the adaptation of vulnerable buildings to climate change by providing:

1. **Vulnerability Assessment Methodologies and Tools** - i.e. integrated risk analysis and lifecycle modelling
2. **An Inventory Hub for Climate Resilient Buildings**, together with novel solutions integration, sustainable materials, prefabricated modules as well as blue-green infrastructure elements
3. **a Decision Support Toolkit** at different levels (**strategic, tactical, operational**), encompassing the following services:
 - i. **Data Management Platform** - data sources integration (Copernicus, DestinE, IoT, etc.) and access control
 - ii. **Strategic Level Decision Support System** - urban-scale resilience assessment and planning tool
 - iii. **Urban Heat Resilience Service** - heat risk mapping and adaptive response
 - iv. **Flood Resilience Service** - blue-green infrastructure modelling and risk mapping
 - v. **Structural and Seismic Resilience Service** - seismic risk mapping and automated analysis
 - vi. **Fire Resilience Service** - wildfire risk detection + mitigation and management planning
 - vii. **Smart Evacuation System** - addressing different emergencies, leveraging sensors + AR/VR training

3. Pilots

CLIMRES solutions will be tested in four **large-scale pilots** in **Spain, Greece, Italy, and Slovenia**, evaluating their efficacy against heatwaves, extreme flooding, fires, and earthquakes.

Additionally, there will be one **multi-hazard replication multiplier pilot** in **France**.



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