Integrated Framework for Wildfire Risk, Detection and Recovery for WUI Area

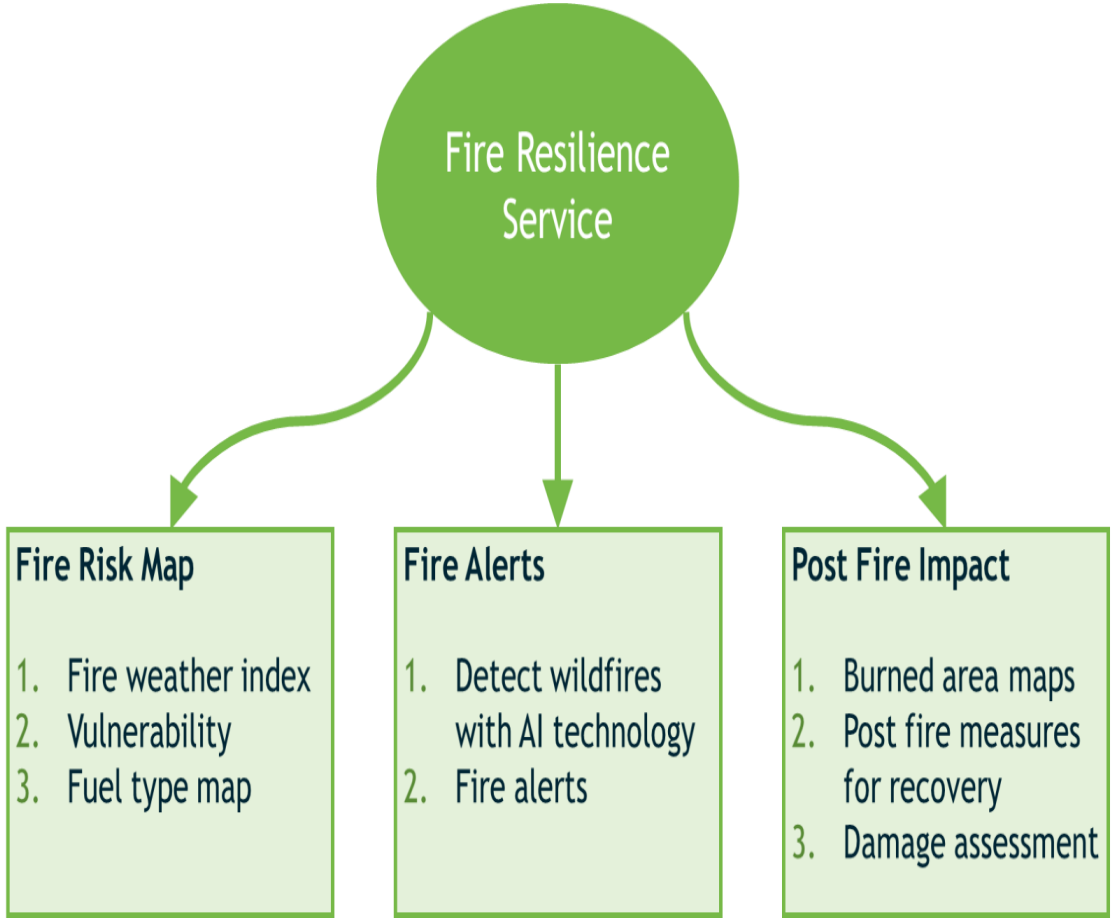
Project overview

- CLIMRES (Horizon Europe Project): Aims to enhance community resilience against fires, floods, and earthquakes using AI, IoT, and XR technologies.
- **Objective:** Support authorities and citizens in **preparedness, real-time response, and recovery** during climate-related emergencies.
  Main Services:
    - **Fire Resilience** 🔥
    - **Flood Resilience** 🌊
    - **Smart Evacuation**
    - **Decision Support Dashboard** 🧭

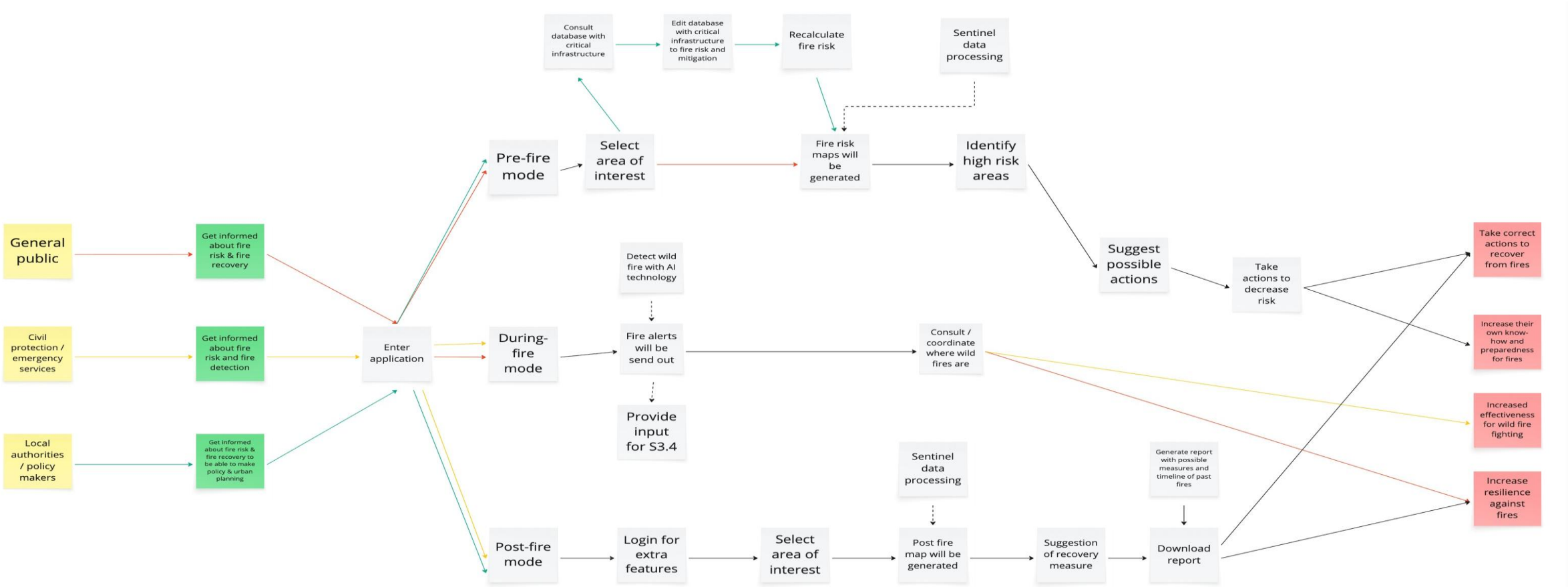
Framework Overview

🎯 **Goal**: Support early detection, risk mapping, and recovery planning to reduce wildfire impact in WUI areas.

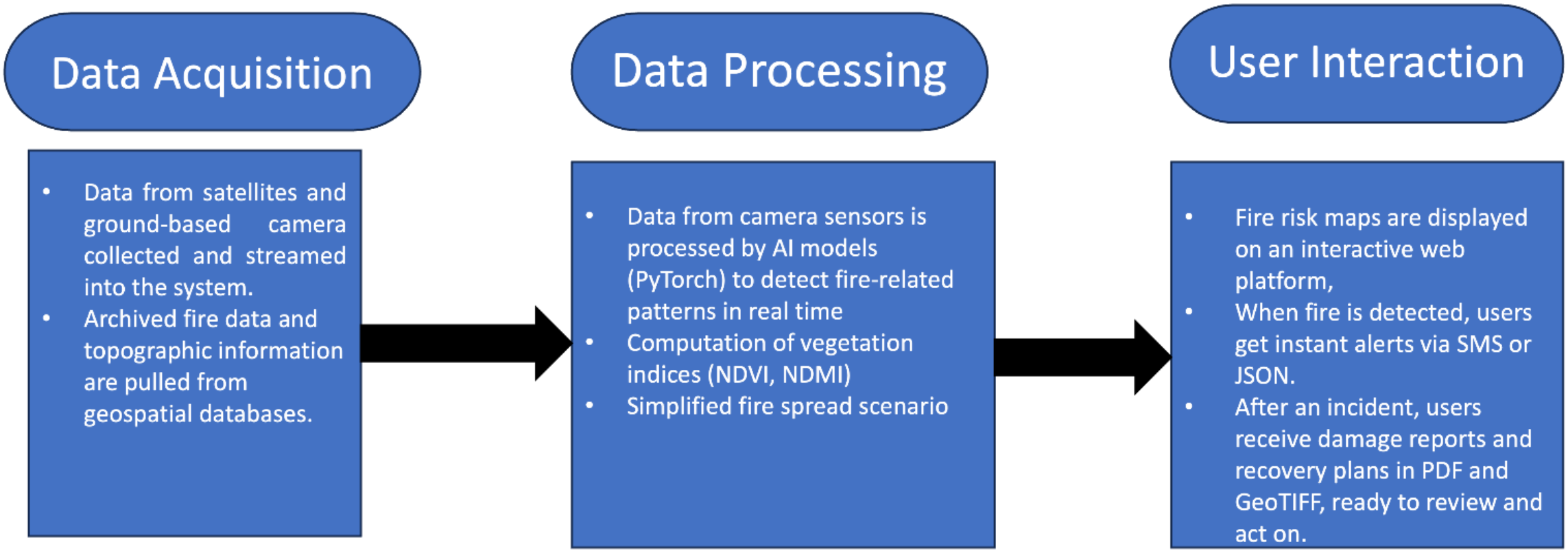
⛳ **Pilots**: Athens (LSP2)
Structured around three key pillars:
Fire risk Mapping: dynamic maps based on satellite data and risk indices
Fire alerts: AI-based detection using sensor inputs
Post-fire impact: damage assessment and recovery planning
Users: municipalities, civil protection, emergency responders, citizens, insurers



Framework flow

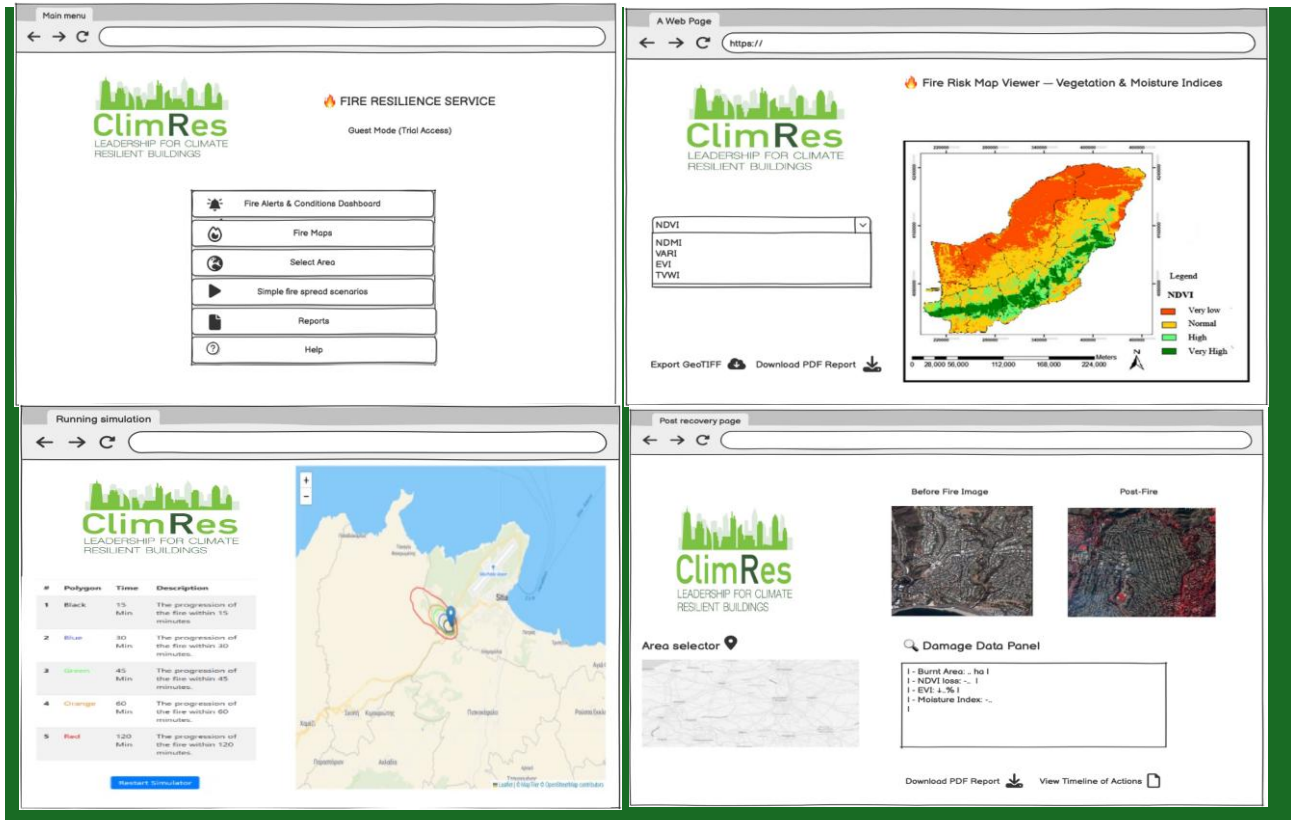


Technical Architecture



Wireframe

- ✓ Wireframes developed for user interface (fire risk map viewer, simulation, post-fire reports)



Next steps

- Risk mapping prototype completed (NDVI, NDMI, FWI, GIS maps)
- Fire detection model tested on video/sensor data
- Post-fire module under validation
- Next: integrate modules, pilot in Greece, enhance dashboards, expand to multi-risk use