

CASE STUDY

REPORT

How are UIA projects contributing to building resilient cities, adapting to the climate emergency?

PROJECT

GUARDIAN - Green Urban Actions for Resilient fire Defence of the Interface Area

📍 Riba-roja de Túria, Spain

TOPIC

Climate adaptation

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## GUARDIAN

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# Green Urban Actions for Resilient fire Defence of the Interface Area



The Wildland-Urban interface in the GUARDIAN project

The Wildland- Urban Interface (WUI) fires are defined as the fires that occur in the zone between the wilderness and the land occupied by human activity. Due to the impacts of climate change, such fires are now more frequent and extreme, representing a rising threat in Europe, especially for the countries in the Mediterranean basin. The GUARDIAN project addresses this increasing risk for peri-urban areas and aims to strengthen the resilience of the affected locations by reducing the fire risk and limiting its expansion to inhabited areas. The selected pilot area is situated between the cities of Riba-Roja and Paterna in the province of Valencia, Spain. These cities share the protected wildland zone “la Vallesa”, which is part of the Natural Park “Parc Natural del Túria”, located in a highly urbanized environment. This particular wildland-urban interface (WUI) zone that covers 2,000 hectares with 15.000 residents, is subject to significant fire risk, considering that only for the period 2000-2016, the Riba-Roja area experienced 40 forest fires, while that of Paterna recorded another 19 fires.

The GUARDIAN project is the largest firefighting system in Europe. It demonstrates an innovative model for the sustainable management of the natural environment, which aims to ensure the safety of the citizens of Riba-Roja while also contribute to the preservation of the Natural Park of Túria and La Vallesa. The project’s hydraulic

infrastructure supplies reclaimed water from the local wastewater treatment plant to the irrigation equipment (e.g. water tanks, sprinkle towers) at the pilot area. In particular, the project has developed a system to use reclaimed water for fire mitigation and protection, providing preventive, pre-defensive, and defensive irrigation based on a network of sensors. Additionally, this network is equipped with a monitoring and command system that calculates the amount and spatial distribution of irrigation to compensate soil moisture deficit in the area. The GUARDIAN utilizes valuable local resources, such as the existing wetland in the area (Vallesa pond) as an emergency reservoir to sufficiently support the new hydraulic infrastructure.

In order to effectively protect the local inhabitants, the GUARDIAN project prioritizes the necessity for community preparedness. Thus, the GUARDIAN partnership joined forces with the local wildfire research scientific community to coordinate engagement activities with local residents in an effort to raise awareness of the fire risk in the area as well as train the community for self-protection actions.

**Partnership:**

- Riba-roja de Túria
- Paterna
- Hidraqua - public water management company
- Medi XXI - SME
- Cetaqua - higher education and research institutes
- IIAMA, Polytechnic University of Valencia (UPV) - higher education and research institute
- University of Valencia - higher education and research institute

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