



EUROPEAN UNION



# EU MISSIONS

ADAPTATION TO CLIMATE CHANGE



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## Adapting to climate change through spatial planning

Integrating climate change mitigation and adaptation measures into spatial plans supports local authorities in achieving climate change resilience.

*Cities and regions are at the forefront of the battle against climate change. Although they have a great responsibility in this context, they often lack the tools to implement solutions. Integrated energy, climate and spatial planning offers a potential tool for ambitious climate action.*

### Key Learnings

- **Planning vs implementation:** Cities and regions have strong capacities in terms of planning (either directly or via energy, climate, and development agencies). However, they often lack options to support and facilitate implementation.
- **Spatial planning:** Spatial plans are not only planning but also executive documents. Those can be used to mandate the implementation of ambitious climate change adaptation measures that align with the territory's overall aims.
- **Cooperation and harmonisation:** This process requires cooperation between key actors like local and regional governments, energy and climate planning experts, and urban and spatial planners. It is also necessary to harmonise plans and strategies such as development plans, Sustainable Energy and Climate Action Plans, climate change adaptation and resilience plans, etc.

## About the region

North-West Croatia

## Climate Hazards

Extreme heat, urban flooding, landslides

## Sector

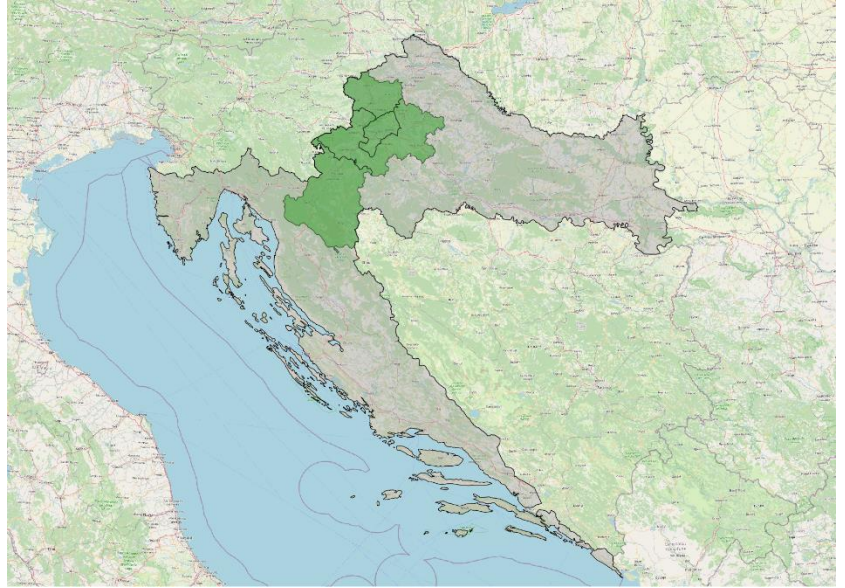
Urban and rural

## Key system

Infrastructure

Health and Wellbeing

Ecosystem and Nature-based Solutions



## Climate Threats

North-West Croatia consists of the country's capital, the City of Zagreb, and three counties (Zagreb, Karlovac and Krapina-Zagorje Counties). The region harbours a large variety of urban and rural areas as well as geographical morphologies. Due to this, the region experiences a broad range of climate change impacts and is affected by several climate hazards. The most severe ones include extreme heat and flooding (urban and pluvial flooding) and landslides that are often caused by excessive rainfall, inadequate water management and management of green infrastructure, extreme weather events, and sustained periods of drought.

## Challenges for local and regional climate action

Although Europe's cities and regions stand at the forefront of the battle against climate change, they often lack the necessary tools to act on this responsibility adequately. They have the capacity to develop a variety of plans and strategies but lack the required mechanisms to enforce them, as laws and standards for construction are mostly decided at the national level. The local and regional levels are often left with minimal tools, such as voluntary schemes and limited incentives, to motivate investors and citizens to take action to mitigate the effects of climate change. These circumstances are not sufficient to address the challenges ahead.

Energy and Climate Plans are developed independently across governance levels and sectors with little to no communication or coordination among them. This results in disjointed policies, contradictions, and inefficiencies, creating additional barriers to implementing key measures. Additionally, resources are not adequately assigned to these plans as budgetary planning often does not follow the identified needs.

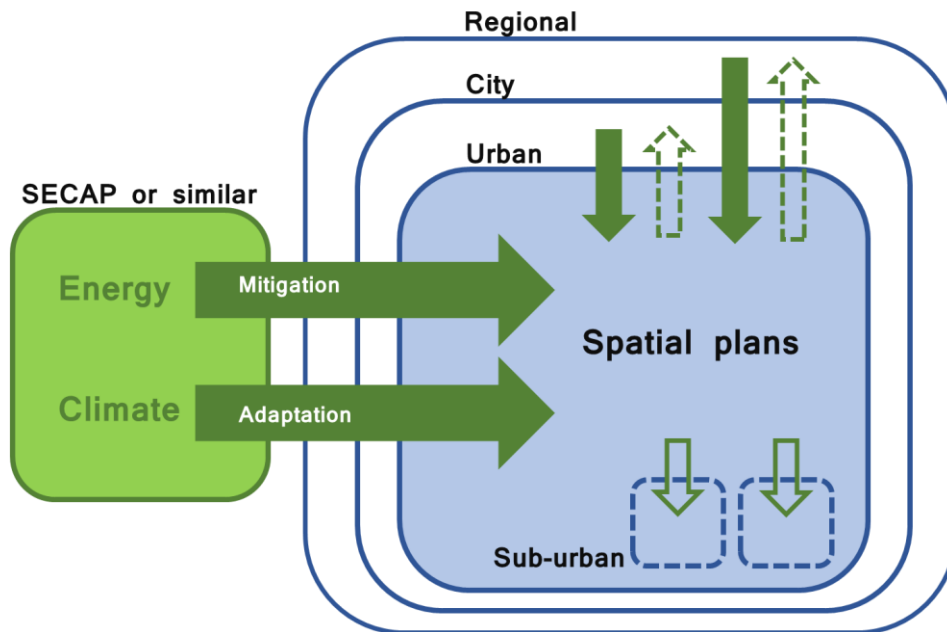
## Spatial planning to increase effectiveness

Spatial plans are powerful planning and executive tools. Their main purpose is to define the spatial development of a territory, including the definition of land use categories, infrastructure placement, and special construction and development requirements. Spatial planning has a long European tradition and is practised globally. Municipalities, cities, and regions across Europe develop and implement spatial plans. Those plans are inherently multidisciplinary and are developed at national, regional, municipal, and sub-municipal levels.

**Unlike other planning processes, spatial plans are enforceable at the level they are created.** Essentially, buildings under construction, or in some cases reconstructions, require permits, which in turn call for the alignment of the proposed projects and the relevant spatial plan. This stipulation empowers spatial plans to mandate and enforce the implementation of key measures. Thus, it enables local and regional governments to take ownership of their development and facilitate the implementation of key measures to ensure climate change adaptation and resilience.

## Integrating spatial, climate and energy planning

Although spatial plans are a multidisciplinary tool that covers most, if not all, aspects of development in an area, they are not widely used to enforce energy and climate ambitions beyond the implementation of underlying national construction standards. **By expanding their use and including key elements to fulfil local or regional energy and climate goals, spatial plans can become a great lever of change.**



*Figure 1: Integration of energy and climate plans into spatial planning*

Depending on national legislation and planning practices, spatial plans can include a variety of measures to help facilitate climate change adaptation. For instance, spatial plans can require more green areas within properties in a particular zone or across an entire area. They can involve natural rainwater retention zones and water management solutions at a building level, such as rainwater utilisation, or foresee nature-based solutions, such as green roofs and facades in certain areas or for certain building types.

As an example, the City of Karlovac has launched a call for an ambitious spatial plan covering a brownfield within the city's urban limits. After public consultation and official adoption, the resulting plan includes several highly ambitious climate change adaptation and mitigation measures.

- First, the plan requires higher standards for implementing green infrastructure and preserving existing natural areas in the zone.
- Second, the plan does not foresee local use of fossil fuels for heat production. The only options for heat supply within the area are the city's district heating system or local heat production from renewable sources. This requirement exceeds the national standard for Nearly Zero Energy Buildings.

A similar plan has also been implemented in a sub-municipal zone within the country's Capital, Zagreb. A spatial plan covering several city blocks includes strict regulations on greenhouse gas emissions, water management requirements, and nature-based solutions.

These examples are still at the pilot action level and aim to demonstrate the practices local and regional governments can adopt to protect their environment and build resilience bottom-up. The principles discussed in this story and demonstrated in the pilot actions described can be transferred to higher-level plans that cover larger areas. By developing and enforcing integrated spatial, energy and climate plans, cities and regions will be able to ensure long-term climate change resilience and create a clean, healthy, and people-centred environment.

*“Among all my projects, I am especially proud that, together with REGEA, we are developing a Green Spatial and Zoning Plan for the City of Karlovac. We are a green and smart city. Our energy transition has already begun.”*

*Damir Mandić – Mayor of Karlovac*

## Summary

Like all regions, North-West Croatia experiences various climate change impacts. However, the implementation of solutions is hampered by a lack of instruments at the local level, leaving cities and regions with voluntary plans and limited incentives. Coordination issues between governance and sectorial planning levels contribute to disjointed policies and inefficiencies.

Spatial planning is a powerful tool to address the challenges of both coordinating and implementation. Spatial plans are enforceable at the level at which they are drawn up and can, therefore, mandate and enforce key measures to support local and regional governments in climate change adaptation.

## Further information

- LIFE funded IN-PLAN project: <https://fedarene.org/project/in-plan/>

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