

# Urban planning for resilience

*EUKN Policy Lab for Slovenia, 24 October 2023*  
*Report*



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## About the EUKN

The European Urban Knowledge Network (EUKN) EGTC is the only independent EU Member State driven network in the field of urban policy, research and practice. As a strategic knowledge partner, it supports its members through tailor-made services such as Policy Labs on contemporary urban topics. The EUKN has been closely involved in the establishment of the Urban Agenda for the EU and the global New Urban Agenda, and has been actively supporting further development of these strategic agendas through events, research, and expert analysis. The EUKN Secretariat, located in The Hague, is responsible for the overall coordination and operations of the network.

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# Background

The concept of resilience has become a buzzword in public discourse and urban strategy documents. Resilience can refer to the ability of an (urban) system to ‘bounce back’ to its original state following a shock, crisis, or disturbance. Resilience can also refer to a situation of shock absorption and adaptation, enlarging the tolerance boundaries of a system. Thirdly, resilience can be understood as ‘positive adaptability’ in anticipation of or response to shocks and transformation – to ‘bounce forward’.

The floodings<sup>1</sup> that happened in Slovenia in August 2023, described as the worst natural disaster that ever hit the country, emphasised the urgency to continuously integrate resilience into spatial and urban planning.

Acknowledging these recent developments and gaps in the field of ‘planning for urban resilience’, the Policy Lab aimed at activating the urban practitioners’ community. It provided an overview of existing tools to inspire future interventions and served as a platform for urban practitioners to share struggles in the implementation of resilience measures, identifying what is needed to overcome them.

[Read more](#)

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<sup>1</sup>In early August 2023, Slovenia faced a severe weather disaster with heavy rain, floods, and landslides. About two-thirds of the country suffered from the extensive and devastating impacts. For more information, see: <https://www.efas.eu/en/news/flooding-slovenia-august-2023#:~:text=In%20early%20August%202023%2C%20Slovenia%20was%20gripped%20by,consequences%20for%20approximately%20two-thirds%20of%20the%20country%27s%20territory>

## Welcome address by Tomaž Miklavčič, Slovenian Ministry of Natural Resources and Spatial Planning

This Policy Labs addresses resilience of urban spaces and the role of urban planning. With the floodings during this summer, we witnessed a catastrophic event. Those of us dealing with spatial planning know that we need to act quickly because we are facing a changed situation. Slovenia is giving high priority to this topic.

The National Assembly recently approved the country’s planning strategy for the period until 2030. The document underlines the need to adapt to changes. It also defines what resilience is understood as: physical adaptation, adaptation of the use of space, but also resilience of administration and decision-makers equipping them to recognise challenges and opportunities in spatial development.

We need to integrate participatory processes in resilience planning even better. We also need to strengthen education and training of spatial planners in all areas where new skills are required. Lastly, we are revising how we manage our resources and pay more attention to measures allowing us to adapt to climate change.

Improving resilience is not just physical adaptation but also improving the capacity, knowledge, and skills of all stakeholders to act timely.

# Pathways to resilience

## Keynote by Prof. Lorenzo Chelleri

Chair of Urban International Resilience Research Network & Director Master of City Resilience Design and Management, International University of Catalonia

### Different approaches

The resilience concept has been introduced to our societies in a rather simplistic way, often illustrated by images and developed in policy discourses. Whether it is about recovering from natural hazards or social stresses, finding solutions to these challenges means 'achieving resilience'. Resilience might seem an easy concept to grasp if understood as disaster responses that are quick and easy to implement. But if these responses are not based on people-centred approaches nor targeting long-term solutions, they can lead to negative consequences.

The existing definitions of urban resilience, as well as its applications, are manifold. Acknowledging this diversity, academic research has analysed and clustered the existing definitions to identify three categories of resilience implementation:

- **Functional:** Here, reducing the number of stresses and disturbances is key, aiming to recover quickly and 'bouncing back' to the original state.
- **Adaptive:** This approach is about recovering quickly, but also managing risks as much as possible (e.g. barriers to protect against high tides like the MOSE system in Venice).
- **Dynamic & transformative:** The objective is to coexist with risks, changing lifestyles to adapt - 'bouncing forward'. This is a long-term implementation approach.

The Netherlands is an interesting example of how these different approaches can be applied. With a profound expertise in water management, the country has moved from an adaptive approach – building

protective dikes (figure 1) – to coexisting measures such as floating houses and enlarged river basins and flooding areas. Protecting against these risks would not have been a good solution in the long term because the risks increase as they are managed and controlled.



Figure 1. Floating houses in the Netherlands.

### Key messages to policymakers

The objective of the keynote was to translate research and evidence from academia into implementable key messages for policymakers. These were presented as follows.

#### 1) Understand the different approaches to resilience implementation and manage them synergistically to avoid lock-ins.

Working only on adaptive measures means disregarding needed progress on socio- technological changes in society. Instead, it means relying too much on coping infrastructures.

## **2) Resilience and sustainability are not the same.**

If a system (such as a city) is highly unsustainable, but its resilience capacity is strengthened, it will remain unsustainable but with an enhanced capacity to adapt. It is therefore important to distinguish the two concepts and ask the question which (and whose) behaviour is being made more resilient (see next point).

## **3) Reflect on what you are making resilient and for whom.**

Communities have an important role in increasing urban resilience. As such, they need to be considered in resilience-building processes to avoid cases of ‘unwanted resilience’. An example is when neighbourhoods become more expensive due to resilient plans, which generate ‘green gentrification’ or comparable phenomena.

Research shows<sup>2</sup> that urban climate adaptation plans in Europe are on average of poor quality and not consistent (based on a sample of 800 climate plans). The same research has also highlighted how plans focus more on impacts on vulnerable sectors and industries than on vulnerable people and communities.

## **4) Cities do not lack tools but skills and human resources to understand, choose, and apply these tools in a consistent way. They often also lack the expertise to write bankable projects for accessing funding.**

The perception of resilience among academics and local government practitioners is very different.

Research was undertaken to assess the understanding of urban resilience meanings and principles among resilience scholars as well as municipal resilience officers in the EU<sup>3</sup>. The results show that the theoretical understanding is good – with resilience officers acknowledging the need to work on both transformation and recovery – but implementation is problematic. Most officers refer to adaptive and protective measures, but not sufficiently to transformative actions.

The number of tools released to support implementation is impressive. Therefore, cities do not lack tools but skills and capacity to use tools consistently. This mismatch between theory and practice comes from a lack of guidance.

## **Acute shocks & chronic stresses**

Disasters generate urgency to act, thus the chance to mobilise and create change. At the same time, acting fast might create lock-ins.

Under the urgency of act, solutions with long-term effects are taken quickly. This can ‘lock’ from the capacity to adapt in the future. Also, infrastructures are built to respond to ‘average’ disasters, not the extreme events happening increasingly nowadays because of climate change. The capacity to deal with the disasters needs to be strengthened.

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<sup>2</sup>Reckien D., Buzasi A., Olazabal M., et al. – Quality of urban climate adaptation plans over time – 2023. See: <https://doi.org/10.1038/s42949-023-00085-1>

<sup>3</sup>Chelleri L. & Baravikova A. – Understandings of urban resilience meanings and principles across Europe – 2021. See: <https://doi.org/10.1016/j.cities.2020.102985>

# Experiences on the ground



## Celje, Slovenia: Regional planning for resilience

Miran Gajšek, Head of the Environment and Spatial Planning Department of Celje

*'We need to ask: Who has to be resilient and when to start (now!)?'*

By Slovenian constitution, the state and 212 local communities are responsible for urban planning. However, the main spatial and resilience planning issues in Slovenia (transport, natural areas, rivers, etc.) exceed the scale of municipalities. Instead, they often unfold at NUTS 3 level<sup>4</sup> and need to be addressed there (see figure 2).

A change in the spatial planning order is underway to address this issue: a proposal has been sent to parliament to change the spatial planning law, article 77, giving regional development agencies the responsibility for drafting regional plans. In the case of water management and flooding, this would better

allow the integration of hydro-engineering solutions, which go beyond the scale of municipalities and otherwise could not be planned.

For the moment, municipalities are responsible for land-use plans while regional authorities manage strategic plans. The role of the state is to detail and manage some aspects of the regional strategic plans. In the case of Celje, the strategic planning will integrate elements related to the protections against environmental hazards.

From the Slovene experience, messages for resilient planning are:

- Identify the functional territory for resilience, which in the case of Celje is the water catchment area of the Savinja river and its tributaries.
- Urban planning at local level is not enough to achieve resilience, and it needs to be integrated with regional planning.
- In case a disaster happens, policymakers and professionals need to cooperate and jointly take actions.
- Policymakers should change their approach and influence societies to do the same: from react to act, and from change to adapt.

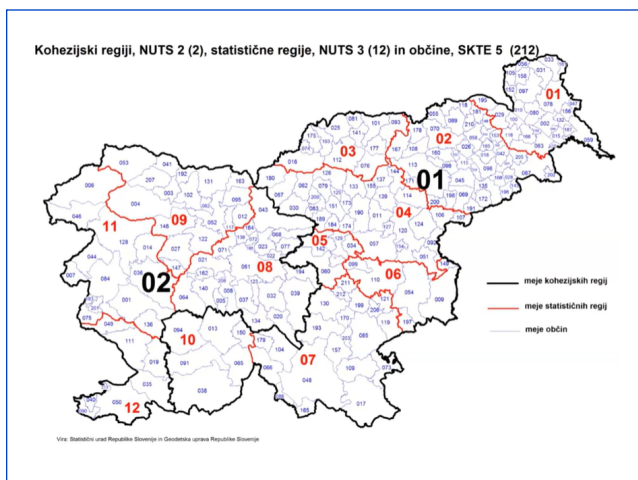


Figure 2. NUTS 2 (2) and NUTS 3 (12) levels as well as municipalities (212) in Slovenia.

<sup>4</sup>NUTS stands for 'Nomenclature of territorial units for statistics', an EU-wide unified classification system; NUTS 3 refers to 'small regions

for specific diagnoses'. See: <https://ec.europa.eu/eurostat/web/nuts/background>



## Zagreb, Croatia: Disasters as an opportunity

Nikša Bošić, Director of the Institute for Spatial Planning of the City of Zagreb

*'We are all aware that we live in constant crisis and transition, also due to climate change. We need to adapt to these changes.'*

Zagreb, the capital of Croatia, has a history of major earthquakes. The one of 9 November 1880 was turned into an opportunity to modernise Zagreb's building stock. The most recent ones, in March and December 2020, also triggered a mindset shift: recovery should no longer be about reconstructing the city into its previous state but about 'building it back better'.

After 2020, the historic centre of Zagreb went through a comprehensive renovation – for its residents as well as the wider population of Zagreb, for which the historic urban core has great value. The objective of the 'Comprehensive Renovation Program' was for Zagreb to become a green centre by 2050. Rather than focusing on building reconstruction only, it was an opportunity to facilitate a more radical renewal of the city centre.

Besides earthquakes in the past (figure 3), Zagreb received other wake-up calls to strengthen resilience: pluvial floods in 2020 as well as extreme weather conditions and high water levels of Sava river in 2023. Learnings from these events are now being integrated in the spatial plan of Zagreb and the master plan, both currently being amended. These documents will incorporate measures strengthening urban resilience such as Nature-Based Solutions (NBS) that will help Zagreb become greener and more resilient.

To support the amendment process, the city of Zagreb used participatory approaches to involve local communities and other experts. Many of them mentioned the treatment of small water streams

that flow into Sava river, using them as NBS and as a potential pathway for the future. The idea of improving infrastructure networks via NBS thus grew both top-down and bottom-up. This shows how public opinion around grey and green infrastructures and NBS is changing. At the same time, Zagreb is not yet in the implementation phase of the new plans, which means challenges cannot be ruled out for the future.

The institute for spatial planning in Zagreb developed guidelines for spatial and urban plans resulting from the EU-funded project proGIreg (productive Green Infrastructure for post-industrial urban regeneration). Spatial planning documents support the implementation of climate and other sectoral policies. Zagreb, and other project cities, host Living Labs where nature-based solutions are developed, tested and implemented.<sup>5</sup> Local communities of the Living Labs are central and are involved at all stages from design to implementation.



Figure 3. Historic photo of the 1880 Zagreb earthquake.

<sup>5</sup>Living Lab Zagreb, Croatia. See: <https://progireg.eu/zagreb/>





## Brussels, Belgium: The city as a sponge

Maarten De Backer, Urban Policy Officer European and International Affairs,  
Perspective Brussels

*‘Resilience is the ability to cope with future challenges, bouncing back or bouncing forward as a society, without leaving anyone behind.’*

In Belgium, spatial planning is a competence of the three regions: the Brussels-Capital, Flemish, and Walloon Regions. Brussels as a city-region is thus responsible for its own spatial policy.

The Senne is the main river in Brussels and, until the 19th century, was part of the city’s urban life. With industrialisation and population rise, however, the water became very polluted. Brussels ‘engineered its way out’ of the problem, creating underground infrastructures to let the river flow far away from the inhabitants. That solution generated negative effects in the long term though. The infrastructure has created resilience risks for the city and affected its vulnerability, mainly because:

- Surface water is not accessible, and people cannot interact with it.
- The public space is dominated by hard and impermeable surfaces. This facilitates the urban heat island effect, does not allow people to cool down with water, and makes the city more vulnerable to floods.
- The Senne river is too small to recover from the total population stress (wastewater) combined with intensified rains caused by climate change, resulting in reduced water quality.

To work on the roots of the problem, and transform Brussels into a sponge city, Perspective Brussels is using both technical and social data. It is important to

monitor where people have real issues and where water accessibility is low. Combining technical and social data is done with two objectives in mind:

- Improve water quality (e.g., absorb rainwater runoff, give more space to the river, improve the link between water and urban planning),
- Make water accessible to people.

Concretely, Brussels tries to achieve this via three types of projects:

- Bring water back into the city, e.g. with swimming infrastructures,
- Look at the land use to redesign and redistribute the public space, increasing greenery and open soil to absorb the rainwater,
- Technical solutions such as rain gardens or restoring riverbanks to create more open spaces.

All projects are also targeting an increased quality of public space. The general direction is reversing the over-engineered system.

When it comes to tools for resilience, Brussels uses several strategic official tools that are mandatory and stated by the law. Next to those, the responsible agencies in Brussels are also embracing more flexible and innovative instruments. Those are often more user-friendly and citizen centred. Digitalisation has streamlined participatory processes.



## Venice, Italy: Resilience as a community effort

Jane da Mosto, Executive Director at We are here Venice

*‘There are gaps between policy and what happens on the ground. Resilience is the ability to engage communities to ensure social resilience, not only physical resilience.’*

We are here Venice (WahV) was established to advocate for Venice to remain a living city, to think about the future of Venice. The third-sector organisation is very aware of the need to connect scientific research with communities of people.

The media attention that Venice often receives comes with a certain responsibility, something WahV considers in their work. Venice, a lagoon city dealing with important sustainability and liveability challenges, is a unique context to explore and act on policy of resilience.

WahV’s work is divided into three areas of action:

- Bringing more attention to the connection between Venice and the lagoon, as two elements of the same reality.
- Languages of value, looking at the things we do not know, and trying to understand them better.
- Exchange of knowledge as ‘two-way traffic’ between communities and policy.

Venice’s threatened reality is governed by tensions, (over-)tourism, and the vulnerability of the lagoon. Despite this, WahV wants to create solutions. A lot of the work is about raising awareness rather than just information sharing. WahV has unusual messaging channels, such as municipality billboards (figure 4).



Figure 4. Billboards of We are here Venice.

The ‘cruise ship problem’ of Venice was addressed this way, among others. These campaigns are about making people more aware, but also about giving a louder voice to the community; letting decision-makers know what the community already knows.

Next to this, WahV organises workshops that bring in social and cultural values to inform new policies and scenarios to restore the lagoon in the future. Human resources are key in increasing knowledge and developing future-proof resilience strategies.

As part of the EU-funded Horizon 2020 project WaterLANDS for restoring wetlands, Venice is one of the action sites and one of the initiatives on community engagement.<sup>6</sup> WahV as project partner is developing a scenario on how to restore the lagoon in the future.

<sup>6</sup>See: <https://waterlands.eu/project-sites/venice-lagoon/>

# Key takeaways

## **Build resilient societies for resilient territories**

Resilience and sustainability are different things. Resilience of the wrong developments can even decrease or threaten long-term sustainability. Urban and spatial planning needs to work on both to build societies that are sustainable, resilient and just, with communities at the core of policies.

## **Work on fit-for-purpose integrated planning approaches**

Spatial and regional planning systems can support resilience efforts. At the same time, intervention areas, competence allocation and funding streams can complexify these efforts. Harmonised and integrated strategic and spatial planning is therefore an important ongoing task.

## **Increase capacities and useability of planning tools**

There are abundant tools, toolkits and instruments for resilience planning. Tools developed as part of EU-funded projects or programmes, for instance, can be either too generic or too technical to be sensibly linked to local contexts. Using and adapting them to local situations often requires external consultancy or increased local capacity.

## **Bring nature back into cities**

Countless cities and regions, with their planning professionals, are embracing nature-based solutions and green & blue infrastructures to increase resilience as well as accessibility and quality of public spaces. Those are understood as important additions to the existing 'grey' infrastructure. Shocks and crises such as natural hazards can provide windows of opportunity for a reframing of the development paradigm of a place.

## **Embrace digitalisation for enhanced resilience**

In the realm of urban planning for resilience, digital tools and instruments can help transform certain processes. They alone are not the solution though; the entire process needs to follow a holistic and well-informed approach. For that reason, professionals must take the lead in deciding on the right instruments and how to integrate them effectively. This way, digital tools can enhance participatory processes in urban planning, assist in harmonising data, facilitate communication and improve overall efficiency of planning efforts.

