# SMART MATURE RESILIENCE

## POLICY BRIEF: CITY RESILIENCE

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| | Policy brief: city resilience |
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# EXECUTIVE SUMMARY

The first SMR policy brief summarizes the key points to be articulated to policymakers to follow from the Smart Mature Resilience project. The policy brief presents the following main issue statements:

- **European cities need to become more resilient**

- **Holistic assessment and decision-making in cities can enhance resilience in Europe**

The document provides a definition of resilience, the policy context, activities to build resilience in cities and demonstrates how the tools produced by the SMR project support those activities. The activities described are: **Assessing resilience maturity, Identifying and implementing resilience-strengthening strategies, Understanding risk systemicity** and **Enhancing stakeholder engagement.** The document notes three standards central to resilience development and concludes with the recommendation that cities and policy makers continue to work on fostering and mainstreaming resilience globally and through local action.

# POLICY BRIEF

## STATEMENT OF ISSUE

**European cities need to become more resilient**

European cities are changing socially and populations are ageing. This means that a larger proportion of the society is more vulnerable and likely to be affected by the increasing frequency and intensity of hazards. This is exacerbated by climate change, which increases weather events such as storms, floods and heat waves. Cities need to become more resilient to these challenges. Resilience relies on adaptive critical infrastructures and dynamic social interactions.

**Holistic assessment and decision-making in cities can enhance resilience in Europe**

As resilience and risk involve and affect a broad range of city stakeholders, a holistic approach is crucial. The SMR project is developing tools for use as part of multi-sectoral approaches to assess and build cities' resilience. These tools can advise and support holistic decision-making towards enhanced resilience with a particular focus on critical infrastructure, climate change and social dynamics.

## RESILIENCE DEFINITION

A review of 119 worldwide and approx. 170 European research articles showed that the concept of resilience is very general. The SMR project has defined city resilience as:

**"the ability of a city or region to resist, absorb, adapt to and recover from acute shocks and chronic stresses to keep critical services functioning, and to monitor and learn from on-going processes through city and cross-regional collaboration, to increase adaptive abilities and strengthen preparedness by anticipating and appropriately responding to future challenges".**

## POLICY CONTEXT

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| **The EU Adaptation Strategy brought the concept of resilience beyond vulnerability** | Prior to the 2013 EU "Adaptation Strategy to Climate Change", resilience was commonly defined in relation to vulnerability, where vulnerability was viewed as the "lack of resilience". Following this Strategy, use of the term resilience encompassed broader aspects, transforming 'resilience' into a more central concept. |
| **Resilience encompasses critical infrastructures' interdependencies** | In the field of critical infrastructure, resilience is primarily used interchangeably or together with protection concepts. However, the essential role of interdependencies and cascading effects are being increasingly recognized. |
| **Climate change has shown the importance of adaptive critical infrastructure** | In relation to climate change, the link between adaptive capacity and critical infrastructure is increasingly being recognized. Adaptive capacity is the degree to which a system is capable of self-organization in order to cope with the unexpected and to adjust to novel conditions of operation. |

**More action is needed on city resilience**

Widespread operationalization and assessment of city resilience is still lacking. Similarly, in the area of social dynamics and resilience, there are not many practical examples of implementation and operationalization.

## STAGES OF RESILIENCE MATURITY

Different cities have different needs and priorities for effective resilience-building. The SMR project has defined five stages of resilience maturity:

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| **Starting** | Defining resilience action plan |
| **Moderate** | Implementing resilience action plan |
| **Advanced** | Carry out resilience action plan |
| **Robust** | Internationalising resilience |
| **VerTebrate** | Leading resilient city |

## ACTIVITIES TO BUILD RESILIENCE IN CITIES

Several tools have been developed in a co-creation process involving cities and researchers as part of the SMR project. These tools can be applied to assess, plan and implement resilience polices at city level. The tools support the following activities:

**Assessing resilience maturity**

The Resilience Maturity Model enables cities to self-assess their resilience maturity stage and provides them with a set of policy recommendations and indicators for rolling out resilience in their cities. The tool allows users to understand resilience as a multidimensional objective, and guides cities via concrete suggestions and policy recommendations across the following four dimensions:


Leadership & Governance


Infrastructure & Resources


Preparedness


Cooperation

**Identifying and implementing resilience-strengthening strategies**

The Resilience Maturity Model is a strategic tool that provides a roadmap depicting how the resilience process may take shape through the policies defined in each stage. The Maturity Model enables, from a strategic level, the identification of areas that need to be improved in each city and reflects these in the policymaking and planning. Once the city has identified its weaknesses, the city should identify its priorities and develop the resilience-strengthening policies, which would aid the implementation process using the proposed indicators.

**Understanding risk systemicity**

Cities need to facilitate discussion and exchange across departments and stakeholder groups in order to assess not only risk but the interrelationships or 'systemicity' of risk in their cities. The Risk Systemicity Questionnaire is a discussion guidance and facilitation method that can bring topically different departments together and focus their discussion to share their knowledge of risk from different municipal departments (or stakeholders' perception of risk, e.g. citizens). It complements the existing resilience tools and methods in cities. It additionally updates and compliments the existing EU guidelines with respect to Risk Assessment and Disaster Management (European Commission, 2010).

## Enhancing stakeholder engagement

The use of the Maturity Model facilitates a continuous process of discussion and participation amongst city stakeholders, thereby increasing their awareness, engagement and commitment to the resilience building process. A further tool, the Resilience Information Portal, aims to facilitate awareness and engagement among key partners in resilience building by enabling cities to improve their own IT systems. It is provided as a toolbox and is based on the following design principles:

1. Information sharing: A physical service centre for citizens should be provided and information-sharing platforms (websites, social media and internal systems) implemented
2. Establish a communication structure with stakeholders
3. Citizen engagement and raising awareness
4. Knowledge sharing (local, national, European): Share best practices towards city resilience
5. Information sovereignty: Keeping public information consistent and accurate builds citizens' trust
6. Usability: Information technologies cannot reach everyone with whom cities should communicate. Finding the right balance between technologies and disadvantaged people should be considered.

## Conclusion and recommendations

We face global challenges pertaining to climate change, critical infrastructure and social dynamics, and cities are increasingly being seen as 'global players' for sustainable development integrated in the overarching sustainability objectives at all levels (SDG 11, Urban Agenda, and European Urban Agenda). Reliable procedures and supporting instruments are needed to help cities implement their commitments effectively and efficiently and to assess performance. SMR supports the **dissemination and mainstreaming** of resilience by engaging in standardization activities with DIN to create a standard for resilience management. Standards relevant for resilient cities are for example:

- ***ISO 37101*:** aims at helping cities and communities to better coordinate participatory development and implementation of a local sustainability programme. The standard supports good governance by describing a coherent, community-based management approach. A practical guidance for cities on practical implementation is under development (ISO/AWI 37104).
- ***ISO 37120:*** recommends a selection of indicators for local reporting on life-quality. The selection is voluntary and based on local priorities.
- ***ISO/TR 37150:*** provides a reference framework for "smart community infrastructures".

With this awareness of the interconnectedness of urban development issues, cities and policy makers should continue to work on fostering and mainstreaming resilience globally and through local action.

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