## Arbeitsgruppe für regionale Struktur- und Umweltforschung



# **Resilient Infrastructure**

**Ecological Uncertainties Social Uncertainties** Economic Uncertainties **Technological Uncertainties** 

> Resilience is the long-term capacity of a system to deal with change and continue to develop

Resilience in the theory of ecosystems

....implications for the design of

**Abstract: Resilience opens up new perspectives, taking into** account the social and institutional aspects of adaptation and the interdependencies between the infrastructure sectors. The research analyzes these complex challenges and develops the concept for an urban living lab. This approach is a suitable framework for testing the transformation towards a resilient system under real conditions in a participatory process.



Investment decisions in infrastructures take place against the background of environmental, social, economic and technological uncertainties. The discussion on the adaptability of infrastructures has, so far, been carried out mainly in isolation with the individual sectors focusing on purely technical solutions. The concept of resilience opens up new perspectives, taking into account the social and institutional aspects of adaptation and the interdependencies between the infrastructure sectors. In practical terms, there is a need for new planning, implementation and operation concepts to make infrastructure systems climate resilient. The research analyzes these complex challenges and develops a concept for an urban living lab. Living labs are platforms for research and innovation within real societal contexts (e.g. cities, districts, regions) and issues (climate change, demographic change etc.) applied to the cocreation of policies, technologies, economical, socio-cultural as well as ecological solutions. It provides an institutionalized framework for transdisciplinary working between different actors (e.g. residents, users, policy makers, local citizens, industry representatives as well as academics) with various concerns. The actors aim the development of solutions, reasonable for the society, respective present and future contexts.



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## Fields of activity

- Energy policy
- Water management
- Regional policy

•A Living Lab should be organized and operated publicly •A Living Lab should be **long term- oriented** •Funding should be secured in the long term •Development of a Living Lab should build on existing structures and institutions •A Living Lab should be meticulously planned and prepared

•The fundament of a Living Lab is the identification of all relevant stakeholders

 Close cooperation between the actors already during the planning phase

•Clear and realistic definition of research goals, visions and **responsibilities** 

#### Infrastructure policy

### **Regular lectures**

Environmental policy

SCHEELE, U., E. SCHÄFER (2013): Urban Living Labs: Ein Ansatz zum Umgang mit Unsicherheit bei Innovationen in Infrastruktursystemen?: InfrastrukturRecht; 10. Jg., Nr. 11, S. 319-322.

SCHAFER, E., U. SCHEELE (2014): Bridging the transformation gap with "living labs". International Conference "Urban Regions under Change: towards social-ecological resilience" HafenCity University Hamburg 27.May 2014.

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