iResilience

Social innovations and smart city infrastructures for the resilient city of the future (iRes)

Project Description (short-version):

The project team members work together with local stakeholders to develop innovative solutions to the complex and dynamic challenges of climate change and sustainable development and test these solutions in living labs. Through a combination of different social procedures (neighbourhood-level living labs and integrated roadmapping) and technical innovations ("smart" (networked) urban infrastructures), the project seeks to work with local inhabitants as well as with local government actors to design processes and measures that contribute to a continuous improvement of urban climate resilience in the cities of Cologne and Dortmund. Only a combination of processes can support a comprehensive, integrated and resilient urban development. Therefore, we pursue the approach "iResilience - Social Innovations and smart urban Infrastructures for the Resilient City of the Future (iRes)".

Cooperation partner:

- Social Research Centre, Faculty of Social Sciences, TU Dortmund University
- German Institute of Urban Affairs (Difu), Environment Division
- Dr. Pecher AG, Erkrath
- Research Institute for Water and Waste Management at RWTH Aachen University (FiW) e. V.
- HafenCity University Hamburg, Architecture and Landscape
- City of Dortmund, "nordwärts" coordination office
- City of Cologne, Environmental and Consumer Protection Office
- Municipal Drainage Services Köln, AöR (Cologne Municipal Drainage Company)
- TU Dortmund, ie³ - Institute for Energy Systems, Energy Efficiency and Energy Economics

Project goals:

- Pilot development and testing of new practices and technologies to continuously improve urban resilience to climate change.

- Development and testing of innovative solutions to the complex, dynamic challenges of climate change and sustainable development.

- Developing targeted approaches to prepare, support, and monitor implementation of policies and processes using social innovation, co-creative planning processes, and digital applications and tools.

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Methodological approach:

The project focuses on the improvement of climate resilience in the partner cities of Cologne and Dortmund. This is achieved through a combination of integrated roadmapping as a social or system innovation, with "intelligent" (networked) urban infrastructures as technology innovations, taking place in collaborative living labs at the neighbourhood level. Through the participatory development of future visions as well as interactive data generation, for example using Citizen Science approaches, new approaches for networked smart infrastructure systems are developed, tested and implemented in a co-creative process in collaboration between researchers and citizens.

Project description (long-version):

The aim of the project is to design and test new practices and technologies to continuously improve urban resilience to climate change. The project team works together with local stakeholders to develop innovative solutions to the complex, dynamic challenges of climate change and sustainable development and tests these solutions in living labs.

The project focuses on living lab processes in Dortmund and Cologne and the cooperation between municipality and citizens with regards to concrete topics of urban resilience using a participatory approach. The objective in both cities is to combine flood prevention and heat prevention with a livable urban design.

iResilience broadens the scope for solutions on urban climate resilience by working out the potentials of social innovation and digital innovation in collaborative living lab processes and merging them at the process level into new socio-digital innovations. The concept of social innovation aims at an intentional targeted change of practices, and introduces an innovative aspect in the resilience discussion, which is often dominated by only technical measures. Social innovation opens up opportunities for different behaviours in dealing with the impact of a more climate-resilient city, such as shaded walkways on heat days, different mobility patterns, or working together for green areas in neighbourhoods. As such, social innovation goes beyond the inclusion of a higher degree of participation in planning processes, or providing the framework for the development of novel citizen ideas or a stronger commitment to a climate-resilient city.

Digital innovations open up opportunities and risks for transparency about urban planning and decision-making processes, as well as possibilities for broader, bidirectional communication between citizens and public administrations. iResilience will test how existing or prototyped apps can be used to inform about current vulnerability. Also, the project will show how digital visualization helps to support living lab processes with alternative planning solutions, and how multi-faceted communication can be used to raise awareness and create new pathways to a more climate-resilient city.