Workshop: Place-based sustainability strategies for urban climate change mitigation and adaptation. Science, data and society in the city

Hosted by: **Christiane Gebhardt,** Head Blue City - Integrated Urban Solutions

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Achieving a sustainable urban transformation is one of the most important challenges for humankind in the 21st century and, due to its complexity, requires a new scientific paradigm. The **Karlsruhe Institute of Technology (KIT), the Research University in the Helmholtz Association,** one of the biggest science institutions in Europe, tackles this development with highest priority. Societal challenges are being addressed using the very broad range of disciplines and competencies at KIT, including social sciences, architecture, civil engineering, energy, environment, mobility, as well as computer, space and data science. Furthermore, KIT cooperates with leading partners from science, industry, government, and civil society in Germany and in Europe. The KIT roadmap for this new transfer-oriented research is in line with the goals of the relevant EU Missions in "Horizon Europe".

D&S Integrated Urban Solutions is an Innovation department of D&S International. It offers a holistic process and method to realize climate resilient cites. We bundle our comprehensive expertise for the implementation of future-proof urban solutions. This includes taking economic, ecological, and social aspects into account. In implementing a smart, human-centered, and climate-resilient urban development, D&S fosters the intelligent use of the possibilities offered by digitization to ensure informed decision-making.

Workshop context:

Cities have become the focal points of solutions for sustainability issues, as climate changes pose a threat to vulnerable groups and critical infrastructure. Smart urban platforms, dashboards and digitalized urban planning, as well as geo-data driven scenario design provide solutions to design and alter urban systems. At the same time, paradigms on public services, ecosystem services, water, mobility and energy systems are changing.

Very often, these developments do not consider the connections of social systems and technological solutions. Innovative and sustainable approaches rely on data mining and data analytics , but need to be socially accepted and used as an enabler for human wellbeing. We discuss how data is generated and used for climate adaptation, citizen engagement and industry participation. We show how these developments also trigger socio-economic alterations using the Quadruple Helix model, that integrates science, industry, government, and society for integrated, accepted, inclusive, safe, and affordable urban solutions.

Scenario Problem statement:

Climate pressures, underutilization of scientific findings and outdated urban governance models are leading to risks and a decrease in the functionality and stability of the urban fabric and to a diminished attractiveness of cities. Stakeholder fragmentation, and insufficient activation of economic potentials as well as a unexploited self-organizing potential of citizens are dysfunctional for climate adaptation, risk prevention and disaster action plans.

Workshop Goals:

The participants will discuss how to activate underutilized potential including large-scale interventions like data platforms, satellite data, and urban real-world design labs for citizen and stakeholder participation. This approach holds potential for making a difference in providing future urban systems, that activate transformation towards an urban functioning for different societal groups, entrepreneurial universities, and industrial players and start-up service solution builders – improving wellbeing and attractivity of cities in terms of health and security.

Follow Up:

Prepare for the next workshop in Barcelona (7 – 10 June 2022).