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New funding programs related to urban climate and urban adaptation

We will present two funding programs of the German Federal Ministry of Education and Research, supported by the German Aerospace Center (DLR) addressing the regional and urban dimension of climate change.

Developing a new Urban Climate Model – City Climate Change

Urban areas are highly sensitive to changes in climate like extended heat waves, severe storms or floods. The consequence: Cities must already prepare for climate change. Cities are a place of conflicting goals such as between the increasing population pressures on the one hand and the necessary adjustments to the impacts of climate change on the other. Despite this dilemma, a precautionary city planning must respond to the anticipated specific changes in the urban climate adequately.

The bases for future planning decisions in cities are powerful city climate models. However, to date there are no such models that are able to give clearly defined statements on climate change and on climatological interconnections, that could be applied towards sustainable urban development in a further step.

The aim of the funding measure "city climate change" is the development of an innovative urban climate model. This urban climate model should be able to simulate cities the size of Stuttgart to Berlin in a resolution better than 10 m grid cell width to simulate micro-climatic processes. With the help of such a model multidisciplinary analyzes can be carried out and measures, for example, to ensure and improve the urban climate and air pollution, could be planned. This also includes the integration of data on climate change with social or demographic and social data. The model results should help to support decision-making. Addressees of the results, which shall be provided as a usable tool, are users in urban planning or urban climate protection.

Climate adaptation in cities

The planned funding program "Climate Action in Cities and Regions" aims at strengthening regional climate resilience through transdisciplinary research. The program will support actors from science and practice (e.g. local administration, business, civil society) that jointly develop innovative and workable solutions for regional challenges caused by climate change. While the focus is on climate change adaptation, also mitigation and/or other fields of sustainable development have to be addressed. Concretely, the funds will be directed to research aiming at

- Socio-political conditions for climate resilient cities and regions;
- Technical innovations protecting against climate change impacts;
- Preservation of ecological services and adapted use of ecosystems;
- Economic innovations to reduce the vulnerabilities of businesses and regions;
- Preservation and improvement of health and quality of life.

The funding modalities are designed in a way that facilitates applied research and the transdisciplinary co-production of knowledge. Among others, the funding scheme is structured in three phases:

- Definition (one year): The transdisciplinary research consortium is built up and the concrete aims and working packages are defined.
- Research and development (up to three years): Main phase for researching, developing and evaluating measures to reach the planned aims.
- Implementation (up to two years): Optional phase for implementation and institutionalization of the developed concepts.

We will also describe how the program relates to other initiatives and how it contributes to climate change adaptation policies.