A conceptual framework for addressing complexity and unfolding transition dynamics when developing sustainable adaptation strategies in urban water management.

To achieve a successful and sustainable adaptation to climate change we need to transform the way we think about change. Much water management research has focused on technical innovation with a range of new solutions developed to achieve a ‘more sustainable and integrated urban water management cycle’. But Danish municipalities and utility companies are struggling to bring such solutions into practice. ‘Green infrastructure’, for example, requires the consideration of a larger range of aspects related to the urban context than the traditional urban water system optimization. There is the need for standardized methods and guidelines to organize transdisciplinary processes where different types of knowledge and perspectives are taken into account. On the basis of the macro-meso-micro pattern inspired by complexity science and transition theory, we developed a conceptual framework to organize processes addressing the complexity characterizing urban water management in the context of climate change. In this paper the framework is used to organize a research process aiming at understanding and unfolding urban dynamics for sustainable transition. The final goal is to enable local authorities and utilities to create the basis for managing and catalysing the technical and organizational innovation necessary for a sustainable transition towards climate change adaptation in urban areas.