

Sustainability Living Lab for Food – Water – Energy in Urban Environments



Documentation of Stakeholder and Expert Workshops in Amman, Jordan



FUSE in a nutshell

FUSE (Food-water-energy for Urban Sustainable Environments) is a transdisciplinary 3-year research project (2018-2021) on the future of Food-Water-Energy (FWE) resources in Jordan, with a focus on its capital, Amman. The project will develop a long-term systems model that can be used to identify viable paths to sustainability. It brings together scientists, engineers, economists, and stakeholder engagement experts from Stanford University in California, USA, IIASA (International Institute for Applied Systems Analysis) in Laxenburg, Austria, UFZ (Helmholtz Centre for Environmental Research) in Leipzig, Germany, and ÖFSE (Austrian Foundation for Development Research) in Vienna, Austria. The project is a not-for-profit research effort and is part of the Sustainable Urbanisation Global Initiative of JPI Urban Europe and the Belmont Forum. Each of the national teams is supported individually by its own national science-funding agency.

More information: <https://fuse.stanford.edu/>

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Context:

The provision of food, water and energy (FWE) resources is crucial for human well-being. Population growth, rising consumption, and growing urban environments increase the demand for these resources. To secure their provision, a long-term integrated approach is needed that considers human decisions under different biophysical and economic constraints. This integrated approach can anticipate trade-offs and identify synergies between sustainability paths. The design and implementation of long-term strategies to achieve FWE-sustainability is a challenging task for all actors – including policy makers, civil society, the private sector and academia – and can only be achieved by working together.

Amman and its greater metropolitan region have been growing rapidly over the past two decades. More than 5 million people currently live in this region and it is forecast to grow significantly in the future. Such rapid growth presents challenges and opportunities. For example, in the context of increasing water and energy uses for urban areas there

is both dwindling freshwater availability and significant potential for solar energy. Understanding the food-water-energy nexus for Jordan with a focus on Amman is key to evaluating different paths and promoting those that target sustainability while avoiding those that are headed toward crisis.

FUSE is a transdisciplinary research project that aims to contribute to identifying solutions for long-term FWE sustainability in Jordan, with a focus on the Greater Amman region. Building on the knowledge of local stakeholders and experts, FUSE will construct a FWE systems model that captures connections and feedbacks among users, producers, distribution mechanisms, and resources. Our approach integrates narratives of future changes in climate, demographics, land use, and economic development, and considers the behaviour of a wide range of actors. The model will be used to evaluate policy interventions and innovative governance forms to identify implementable sustainability options.