

FUSE

Innovative policies and governance forms are needed to address competition for scarce resources in stressed urban food-water-energy systems. The FUSE consortium adopts an innovative two-stage Living Lab approach in which stakeholders: 1) produce solutions for future urban-FWEs challenges, 2) engage in participatory model building, and 3) examine the merits of proposed solutions.

Detailed system models will quantify connections and feedbacks among users, producers, distribution mechanisms, and resources. The FUSE approach will be applied to Amman, Jordan and Pune, India: growing metropolitan regions each containing approximately five million people, intermittent freshwater supplies, and significant competition with agriculture for water and energy.



Aim/objective

Construct multi-agent urban-FWE system models to capture interactions among users, producers, distribution mechanisms, and resources

Under changes in climate, demographics, land use, and economics, develop and evaluate policy interventions to identify sustainability options

Approaches/methods

Through 2-Stage Sustainability Living Labs, engage in stakeholder participatory model building

Stage 1: Construct user-inspired potential solutions

Stage 2: Simulate policy-evaluation results as the basis for stakeholder discussion of solution benefits

Expected results and impacts

Provide a new tool for stakeholders to evaluate the effectiveness of policy options

Develop solutions that include changes in governance, regulations, and infrastructure

Demonstrate a systems-modeling approach relevant to many urban-FWEs systems

FUSE – Food-water-energy for Urban Sustainable Environments

Duration: May 2018 – April 2021

Internet: fuse.stanford.edu

Contact: Prof. Dr. Steven Gorelick, Stanford University

E-mail: gorelick@stanford.edu

Budget: 1.850.645 €

Partners: Stanford University, Helmholtz Centre for Environmental Research (UFZ), Austrian Foundation for Development Research (ÖFSE), International Institute for Applied Systems Analysis (IIASA)

Involved cities

Pune (India)

Amman (Jordan)

Sustainable Urbanisation Global Initiative (SUGI)/Food-Water-Energy Nexus

The Sustainable Urbanisation Global Initiative (SUGI)/Food-Water-Energy Nexus is a call jointly established by the Belmont Forum and the Joint Programming Initiative Urban Europe. The cooperation was established in order to bring together research and expertise across the globe to find innovative new solutions to the Food-Water-Energy Nexus challenge.



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730254.