



# Creating Interfaces: Local Knowledge Co-Creation at the Food-Water-Energy Nexus

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Pia Laborgne, Monika Heyder (EIFER)  
Joanna Suchomska (PZR)

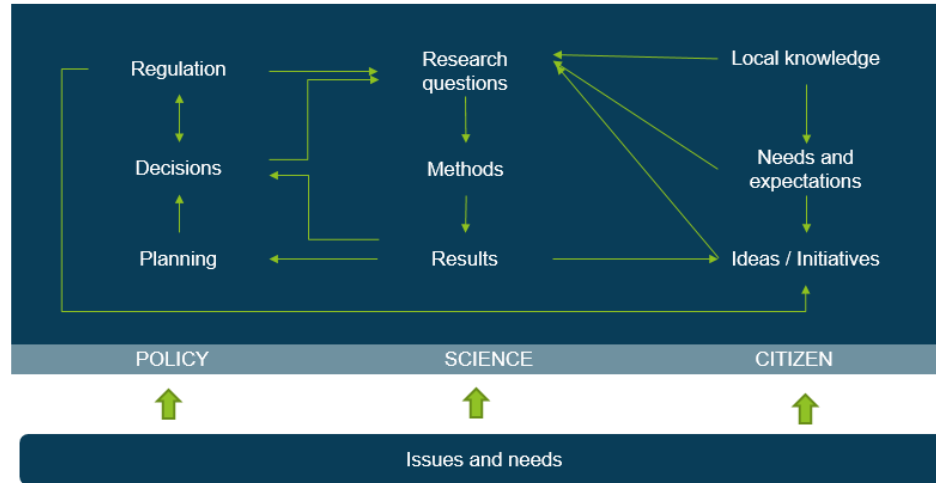


## 1: Results – What are your most promising results so far?

- Awareness rising and initiation of local discourses around the FWE nexus and sustainable urban development
- Bringing people in one room that normally do not communicate
- Knowledge on nexus structures, nexus literacy and governance
  - Lack of awareness of FWE linkages at the local level
  - Lack of capacity to develop integrated governance or management strategies in this area.
  - The research conducted identified challenges and opportunities associated with the integrated management of food, energy, and water systems.
- Co-design of an IT tool and using it to gather data and to discuss food, water and energy management systems.
- Story maps and other Urban FWE visualization methods (work in progress)
- Participatory Modeling and building of a qualitative model

# Participatory Modeling

Policy-Science-Citizen  
interface and PM



PM to understand needs and local knowledge and support informed decision making.



**Interactive browser based qualitative model**  
Implementation into a GraphDB Tool Savvy  
<https://creatinginterfaces.eifer.kit.edu/savvy/index.html#>

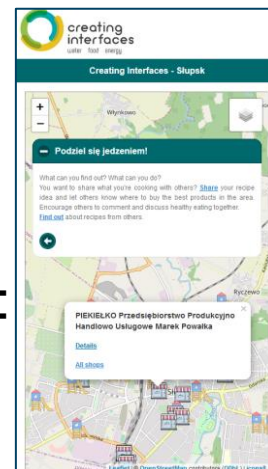
**Impact:** supporting the co-creation of a common understanding of the interdependencies and conflicts through visualization

# Citizen Science tool development

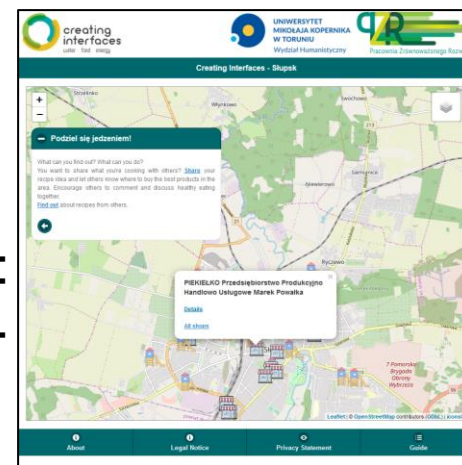
- Co-creation software development process
- Standardized data model and services for interoperability
- User group centric GUI design
- Open-source technologies (OGC and ISO conform)
- Based on the WQ framework
- Data feedback loop with local administration



Mobile app



Desktop app





## 2: Impacts - What do you expect to be the most important short term and long term impacts from your SUGI project?

### Local level

- Fostering networking and visibility of needs, ideas and initiatives as well as the integration of bottom-up approaches in local governance (**short term and long term**).
  - **Awareness and knowledge** regarding the FWE nexus and potentials for sustainability governance (incl. data and visualizations) and integration of FWE concept elements into local governance (e.g. transverse thinking, integrated governance); increasing efficiency of local sustainability strategies (**short and long term**)
  - **Increase of local knowledge co-creation and participation** through developed/adapted tools and experiences (**short and long term**)
- **capacity building in cities and cross-sector urban policies, changes in thinking and practice**

### Research

- Advance knowledge on nexus structures, nexus literacy and governance
- Co-design of an IT tool and using it to gather data and to discuss food, water and energy management systems → Increased openness of research through tested knowledge co-creation tools
- Better science communication; easier understanding of the FWE nexus
- Advancement of Inter- and transdisciplinary research

## Slide 3: Approaches - How will you go about to realize these impacts? What is your approach?

Main aspects:

- Engaging stakeholders from the beginning of the project.
- **Building on the real local needs** and on specific starting points by **linking to problems important for local communities**; e.g. by choosing a starting point chosen with them and then focusing the attention of the stakeholders to the links with other subsystems.
- **Collaborative knowledge co-creation** and search for solutions with engaged stakeholders (workshops, strong cooperation with local institutions, data collection and communication tool)
- Learn and adjust
- Develop strong visualizations

#### **4: Networking and Capacity Building - What support in terms of collaboration with other SUGI projects and dedicated activities from the SUGI implementation team do you need to realize these impacts?**

- Exchange of experience on specific activities and aspects
- Visibility of specific interests and approaches in the projects (who could I approach for what topic?)
- Common evaluation meeting, supporting the development of the final project evaluation recommendations. Help for formulating cross-project policy recommendations.
- Joint publications (book, special issue, non-scientific forum)
- Support organization of conference sessions (e.g. IST conference)
- Knowledge transfer workshop for policy and practice at different levels

# Thank you!

## Contact

**Joanna Suchomska**

**[j.suchomska@pwr.org.pl](mailto:j.suchomska@pwr.org.pl)**

**Pia Laborgne (project coordination)**

**[Laborgne@eifer.org](mailto:Laborgne@eifer.org)**