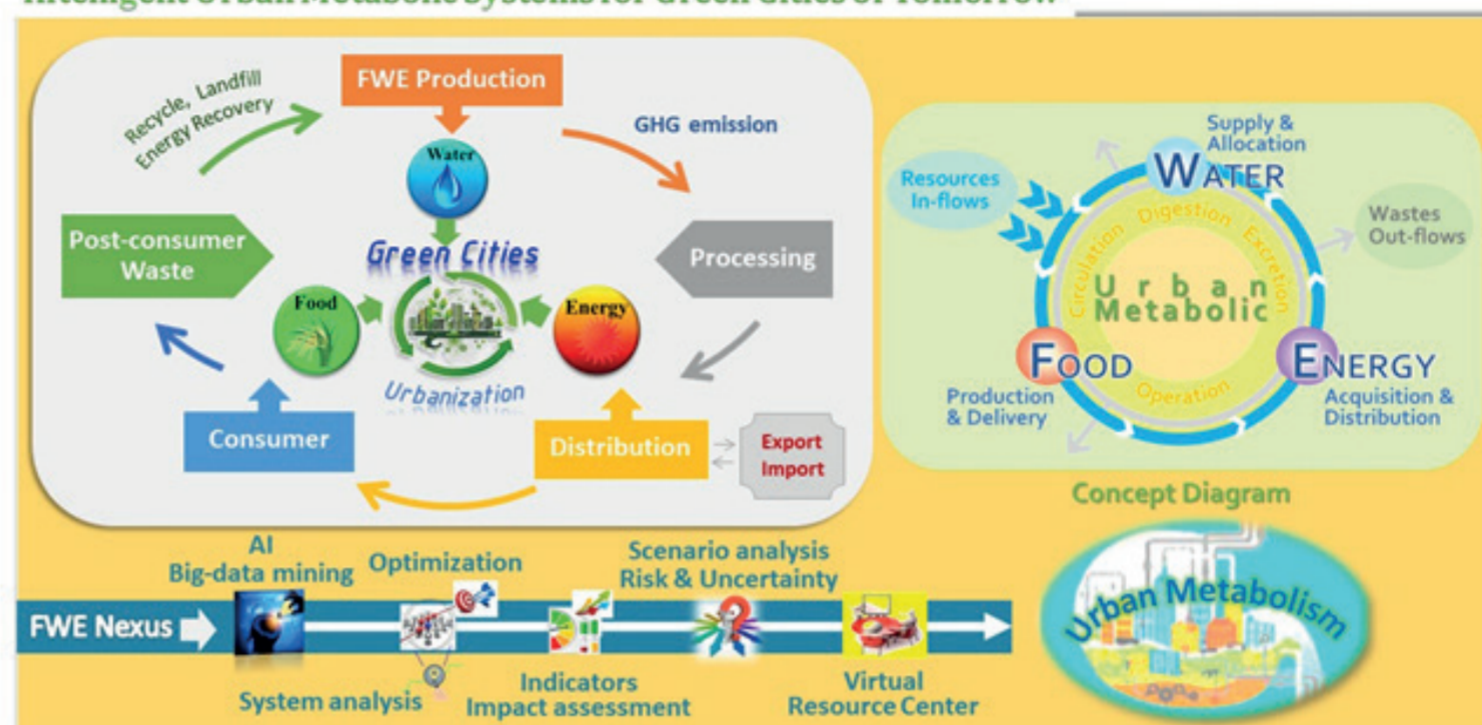


# METABOLIC

Food, Water and Energy (FWE) are essential nutrients of current growing urban centers to sustain vibrant operation and healthy urban metabolism. Our goal is to promote Green Urban Centers of Tomorrow by constructing effective transport and exchange mechanisms for FWE nutrients from sources to urban centers, quantifying and optimizing the FWE factors related to societal health.

Effective management of urban metabolisms is the key to the health of our urban centers of tomorrow. To ensure a feasible work plan, we will establish direct engagement of the relevant stakeholders in participating countries. Our underlying rationale is that the FWE Nexus, manifesting as a complex supply-chain network, forms the basis of the urban metabolic system that sustains the development of our urban centers.

Intelligent Urban Metabolic Systems for Green Cities of Tomorrow



## Aim/objective

Investigate urban metabolism from FWE Nexus aspect

Incorporate advanced tools and models into a scientific collaboration framework

Propose FWE Nexus governance strategies

Develop an international FWE Nexus capacity building system

## Approaches/methods

Identify critical FWE factors and delivery pathways to urban centers via AI, datamining, system dynamics, agro-logistics and scenario analysis

Find intertwined nature of FWE lifecycles from production, processing, delivery, consumption to disposal

## Expected results and impacts

Develop better reallocation schemes, management strategies and solutions at FWE Nexus level

Propose virtual resource center for trans-disciplinary training to share strategies, raise public awareness and build capacity in FWE Nexus

### METABOLIC – Intelligent Urban Metabolic Systems for Green Cities of Tomorrow: an FWE Nexus-based Approach

**Duration:** 2018–2021

**Internet:** [jpi-urbaneurope.eu/project/metabolic/](http://jpi-urbaneurope.eu/project/metabolic/)

**Contact:** Distinguished Prof Fi-John Chang, National Taiwan University

**E-mail:** [changfj@ntu.edu.tw](mailto:changfj@ntu.edu.tw)

**Budget:** 1.516.738 €

**Partners:** National Taiwan University (NTU), Research Institute for Humanity and Nature, University of Illinois, Qatar University, University of Sao Paulo, Sunny Rich Power Co.

### Involved cities

- Taipei (Chinese Taipei)
- Chicago (USA)
- São Paulo (Brazil)
- Tokyo (Japan)

## 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.

[jpi-urbaneurope.eu](http://jpi-urbaneurope.eu)

[www.belmontforum.org](http://www.belmontforum.org)



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