

# Successful R&I in Europe 2024: 11th European Networking Event

Workshop Food, Bioeconomy, Natural Resources, Agriculture and Environment



**IN**tegrated and **Ci**rcular **T**echnologies for **S**ustainable city  
region **FOOD** systems in Africa (**INCiTiS-FOOD**)



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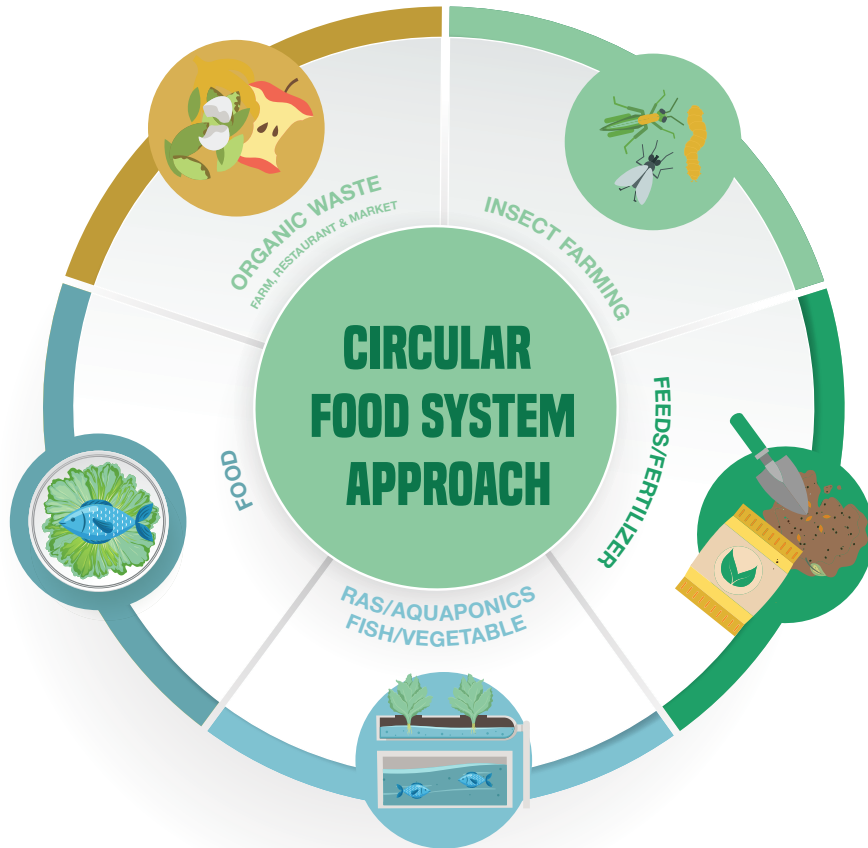
**aquaponik**  
manufaktur



Co-Creation of 24 partners in 8 Living Labs

## Project **Goals**

- Improve food security and nutrition in African cities.
- Reduce the pressure of food production on land and water use.
- Reduce the food-system-related environmental footprint.
- Improve circularity in the food system.
- Make the food environment more resilient.

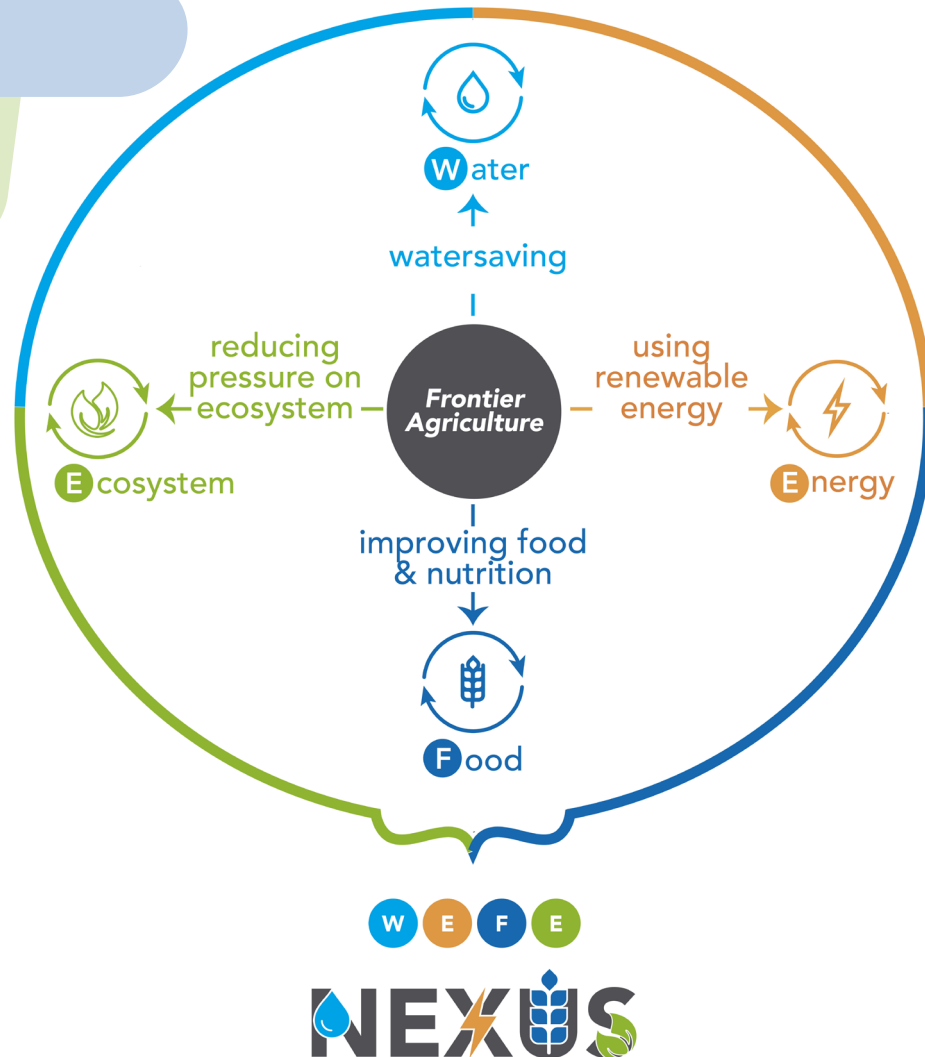


A Consistent Idea

# Circular Food Systems

- reduce waste and create closed-loop cycles for food production, distribution and consumption.
- recycle resources such as water, nutrients, and energy within the system.
- are designed to be sustainable and resilient, promoting long-term food security and reducing environmental impacts.
- Prototypes of circular agri-food technologies
- Capacity building
- Iteratively road test MVPs

## Impact of Climate-Smart and Water-Saving **Frontier Agriculture** on the WEFE **Nexus** in Arid Mediterranean Regions



- 3-year project
- 10 partners
- frontier agriculture as a multi-solving intervention in different contexts
- circular & simplified technologies like hydroponics, aquaponics, insect farming and vermicomposting
- address challenges in traditional agriculture
- improve resource efficiency and sustainability
- promote food security
- generating sustainable benefits for the **W**ater, **E**nergy, **F**ood, and **E**cosystem (WEFE) Nexus



Our Contribution

# Aquaponics

- Partner in co-design process
- Engineering of prototypes and MVP iteration
- Capacity building in construction and operation

Explained in 4 bullet points:

- Aquaponics is a cultivation method that combines **aquaculture** with **hydroponics**.
- Excrements from **fish** farming are used as nutrients for plants.
- **Bacteria** convert ammonia from these excrements into nitrates.
- This supplies the nutrients for **plants** grown hydroponically, which in turn purify the water



## Our Expertise

# Research **Areas**

- Connecting additional loops (anaerobic digestion, insect farming, vermiculture)
- Improving nutrient management
- Optimizing Efficiency (WUE, NUE)
- Reducing energy consumption
- Developing measurement and control technology
- Modelling of aquaponics

## Our Proposal

# Range of **Services**

- Conducting feasibility studies
- Developing Concepts
- Sizing and Engineering
- Managing procurement and construction
- Putting into operation
- Building capacity
- Consulting for farmers, urban planning, industries



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Thank you for your **attention**



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