



Container based constructed wetland  
 (@Julian Rettig 2020)



Domestic wastewater module ECOL-UNICON  
 (@Gabriela Pawekiewicz)

### Concept

DECIRE-WATER will

- **develop and demonstrate innovative technologies for circular water management** at six demo sites across Europe (Germany, Greece, Poland, Spain) and South Africa,
- **integrate digital tools and advanced monitoring solutions** for efficient and safe reuse of water resources, bringing together the “One Health” and “One Water” approaches,

- **promote sustainable water management**, including water and resource recovery, energy savings, and stormwater management,
- **perform a sustainability assessment**, covering environmental, social and economic impacts of the developed solutions,
- **create strategies for the market uptake** of the developed technologies, including stakeholder engagement, policy frameworks, and business models for public-private partnerships.

### Partners

Our consortium consists of 15 partners, ranging from renowned education and research institutes, wastewater utilities, industrial leaders in water treatment and digitalisation, to stakeholder engagement and exploitation experts.



Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

### Get in touch

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**For further information and to follow our project progress visit**

[www.decire-water.eu](http://www.decire-water.eu)  
 in / DECIRE-WATER Project



Image credit: Water reuse system with nature-based solutions at Can Cabanyes, Spain (© Granollers city council)



# DECIREWATER

**DECIRE-WATER**  
**Decentralized Solutions for a Circular and Efficient**  
**Water Management – from Demonstration**  
**to the Market**

## Background

Water scarcity and the increasing pressure on water resources due to climate change, population growth, and urbanisation pose significant challenges for sustainable water management.

Centralised water and wastewater infrastructure systems are not designed for resource efficiency and climate resilience, thus reaching their limits in overcoming these challenges.

## Vision

DECIRE-WATER envisions a transformation of water management through scalable, nature-based and technical solutions to create sustainable, resilient, and affordable systems that can operate independently or complement the existing centralised infrastructure.

These solutions aim to promote water and resource reuse, enhance energy efficiency, and mitigate the impacts of extreme weather events within a circular economy framework.

## Impact

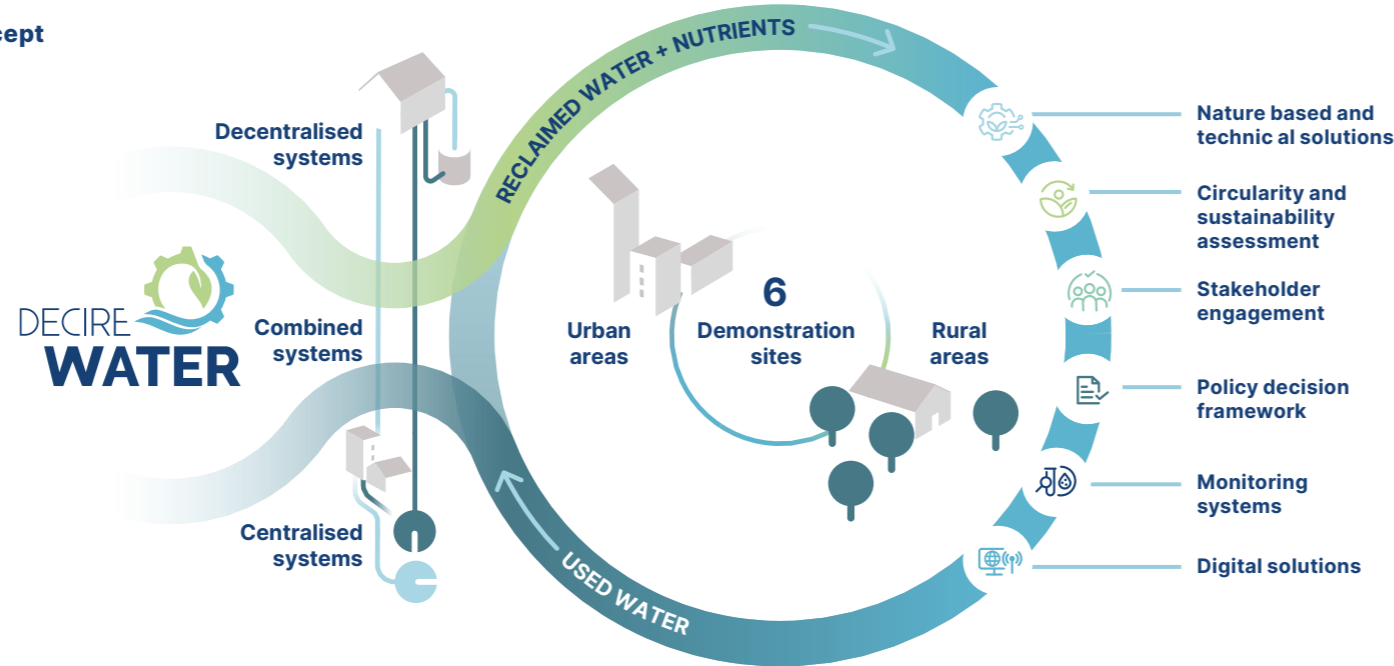
By integrating cutting-edge technologies like real-time monitoring and nature-based and technical solutions DECIRE-WATER empowers communities and industries to achieve greater resilience and adaptability in the face of water scarcity and climate change.

Decentralised and circular water and wastewater management technologies will enhance and transform water security, public health, social well-being, biodiversity, and climate adaptation.

## Innovations

DECIRE-WATER innovations include fully decentralised and combined decentralised/centralised solutions, validated at **six demo sites** →

## Concept



- **Demo 1 | Lesvos Island, Greece:** Greywater treatment and reuse for hotels in tourism-dependent islands  
⚙️ Treatment wetland with climbing plants
- **Demo 2 | Kenton-on-Sea, South Africa:** Low maintenance blackwater treatment system for rural developing areas  
⚙️ Zero-discharge nature-based evapotranspiration tank
- **Demo 3 | Gdansk, Poland:** Domestic wastewater and rainwater treatment and reuse in urban area buildings  
⚙️ Constructed wetlands, membrane bioreactor and gravel-sand filter
- **Demo 4 | Lesvos Island, Greece:** Mixed domestic and agro-industrial wastewater treatment for rural island areas  
⚙️ Novel treatment wetlands
- **Demo 5 | Stuttgart, Germany:** Modular and compact wastewater and rainwater systems for high-density urban areas  
⚙️ Elevated treatment wetland, smart rainwater harvesting
- **Demo 6 | Granollers, Spain:** Lighthouse large-scale constructed wetland in urban settings and water reuse concept for agriculture  
⚙️ Innovative water reuse concept

### Further innovations:

Demo 4, 5, 6: Real-time sensor for the monitoring of *E.coli*

Demo 1-6: Innovative digital data infrastructure and decision support tool for policy advice

