

Constructed wetlands for decentralized water reuse in agriculture

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SOLLAGUA



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Objectives:

- Promotion of Nature-Based Solutions (NBS) for fit-forpurpose water reuse in rural areas of Portugal, Spain, and France facing water scarcity and climate challenges.
- Creation of a Water-Oriented Living Lab (NB-WoLLs) to foster open innovation and collaboration among civil, public, academic, and private stakeholders.

Beneficiaries (10):



Promedio; Funseam; Corporación Tecnológica de Andalucía; Agencia de Medio Ambiente y Agua de Andalucía; Fundació Solidaritat UB



Instituto Superior Técnico; Águas do Tejo Atlântico

+ 26 associated partners



Université Toulouse III - Paul Sabatier; Communauté de communes Couserans-Pyrénées Direction du Service des Eaux; **ECOFILAE**

Specific objectives and task groups

SO2

Creation of an NB-WoLL Strategy and Action Plan

SO2 Adoption and scale-up

(strategies, plans and solutions)

1.1 - State of the art on NBS for

SO1

Knowledge and tools for

NBS for water reuse

- 1.2 Creation of a decision tree
- as a tool for stakeholders 1.3 - Digital twin building
- methodology 1.4 - Cost/benefit and Lifecycle analysis of NBS for water
- reuse 1.5 - Demo sites
- implementation 1.6 - WP1 communication

TG₂

- 2.1 Exploration of
- stakeholders needs 2.2 - Definition of a NB-WoLL Strategy
- 2.3 Implementation of 3 NB-WoLL in the Sudoe territory 2.4 - NBS identification under
- the Living Labs activity and demo site selection 2.5 - Definition of a NB-WoLL
- action plan 2.6 - WP2 communication

- 3.1 Adoption barriers identification and tackling
- 3.2 Communication 3.3 - Education & Training and
- co creation
- 3.4 Demand management and take-up support
- 3.5 Replication plan



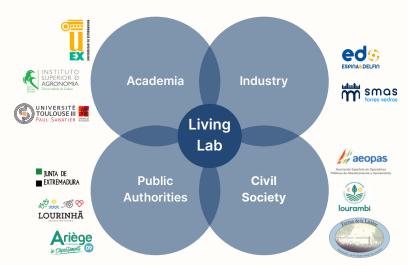
Achievements: 3 new demo sites

1 strategy + 1 action plan



Outcomes: 3 strategy/action plan adopted + 3 solutions adopted + 3 organisations with enhanced capacity

Stakeholder engagement in the Living Lab



Quadruple Helix model

Stakeholders needs (2.1)

- · Boost public trust
- Simplify permits Provide incentives
- Protect environment & water
- Offer training/awareness
- Ensure space & storage

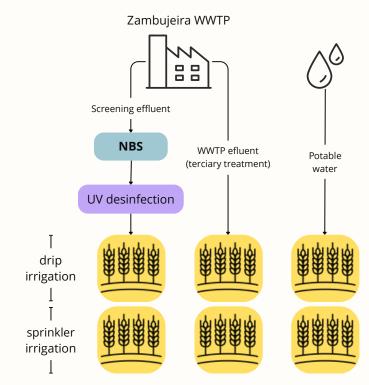
Long-term deployment of NBS (3.1)

- Technical & non-technical barriers →
- High costs / low motivation → Incentives Knowledge gaps → Capacity building
- Low awareness → Dissemination & campaigns



Workshops with stakeholders in Portugal (left) and France (right).

Schematic representation of the **Portuguese Demo Site**



Analysis: TSS, CQO, nitrate, ammonium, phosphate and Ecoli (water and vegetables)



Future Portuguese demonstration site.

Expected results

Implementation

- Develop a NBS-WoLL strategy and action plan for different rural contexts.
- Collaborate with municipalities and local stakeholders.
- Monitor and evaluate NBS performance and compliance.

Replication

- Engage stakeholders to promote wider adoption.
- Identify and solve technical, social, and regulatory barriers.
- Share lessons learned to support replication in other areas.

Support Activities and Tools

- Organize networking events and workshops.
- Create an interactive knowledge hub with guidelines and case studies.
- Provide digital tools for ongoing engagement and co-creation.

Demonstration Sites

- Implement three sites addressing different rural needs:
- Livestock-focused (France)
- Crop irrigation with restrictions (Spain)
- Crop irrigation without restrictions (sensitive crops, Portugal)
- Test NBS and evaluate their impact for best practice examples.



