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Interreg Europe



European Union
European Regional
Development Fund

Overcoming barriers: how to make reclaimed water available for reuse in agriculture”

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WATER REUSED: HEAD AND TAIL



- Only relevant in dry regions.
- Social rejection



- Obtained at ground level
- Steady availability

CASE OF MURCIA REGION

90ST



VOLUME OF WATER **REUSED** ≈ 0

2020



Volume reused \rightarrow 110 hm³ per year that means **95-98 %** of their water treated:

- **≈ 65 % Direct reused** (with tertiary treatment)
- **≈ 33 % Reused indirectly** (WWTPs with only secondary treatment)

<https://www.esamur.com/reutilizacion>

So as to guarantee the food safety \rightarrow **Additional treatment with chlorine** to the secondary treatment

KEY POINTS OF THIS INCREASING

1. **High agricultural demand**
2. A clear and **transparent governance system**
3. Efficient **financing** system
4. A sustainable **planning**
5. **Promotion**

GOVERNANCE SYSTEM

Who makes
the works?



ESAMUR
Public Entity



Its only function is to
produce reclaimed
water

How?



Sanitation Levy



Tax payed by the
users for treating
the water



Key point to guarantee the compliance of the
environmental principles like **“Polluter should
pay”** and **control the “wasters”** through the tariff

EXAMPLES OF ESAMUR'S R&D PROJECTS

CIRCULAR ECONOMY

- Anaerobic treatment as a wastewater treatment process with low energy consumption.
- Co-digestion of sludge with waste to produce biogas

RECOVERY OF THE WASTES

- Dry anaerobic digestion for the sewage sludge
- Recovery of phosphorus through struvite.
- Sludge reuse for agricultural purposes and technology GIS.

More information:

<https://www.esamur.com/investigacion-desarrollo-innovacion>

PLANNING THE RESOURCES

PLANNING TOOLS

SANITATION PLANS → Evaluate the facilities



Carry out investments to improve the system

RIVER BASIN PLAN → set the available water resources and their purposes for the users



Inventory of water treated in hydro-graphic basin

GRANTS FOR CONNECTING THE WWTPs TO THE IRRIGATORS COMMUNITIES FACILITIES

STARTING POINT

- Irrigation lands endangered due to an insufficient dotation cover with:
 - Desalinated water (obtain at sea level and taken higher)
 - Groundwater (obtain below 100 meters)
- High cost of the investment for the regulation and transportation because the water comes from urban areas and it's used in Rural.

EVIDENCE OF SUCCESS

- 65 % of agricultural reusing.
- Irrigators Communities demand more calls for the WWTPs left.

GRANTS FOR CONNECTING THE WWTPs TO THE IRRIGATORS COMMUNITIES FACILITIES

FINANCING

EARDF (From the current RURAL DEVELOPMENT PROGRAM) that sets the minimum requirements for the access and the fulfilment of requirements

CHALLENGE



WATER SOURCES MIXING



It lets add the salty groundwater unusable for the most of the crops, when the mix with water reused is acceptable.



The traceability of the system

COMPLEMENTARY MEASURES

- Follow-up the process of the treatment and the irrigation:
 - To reduce the level of the tertiary treatment
 - To provide fertilizers through the irrigation water.

Smart Irrigation

+
Advanced Counter
meter system

Improve the traceability

+
Control every drip of
water

Control of the system
through the **water tax
paid**

SUMMARY

In the route from nothing to 98 % of reusing, Murcia Region followed hereafter tips:

- 1) Focus on the purpose in which we can apply the water reused.
- 2) Revise the necessary policies and the rules of governance to offer a friendly and transparent system for the investors.
- 3) Design a cost recovery system that guarantees its survival over time.



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Thank you!



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Project media