



CETAQUA
WATER TECHNOLOGY CENTRE

A Data-Driven Approach to Boost Water Reuse: LIFE WARRIOR

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EUROPEAN
BIG DATA
VALUE FORUM
21-23 NOV | PRAGUE - CZECH REPUBLIC



Source: EC - Water Scarcity and Drought in the European Union



Water Scarcity
is no longer confined to a few
corners of Europe, and is fast becoming
a concern across the EU



By 2030
water stress and scarcity
will probably affect half of Europe's
river basins

Source: EC - Report on the Review of the European Water Scarcity and Droughts Policy EC - Would you drink your wastewater?



South-eastern Spain is one of the territories with the greatest water stress in Europe, especially due to a situation of prolonged drought coupled with high agricultural activity.

In recent years, drought events in the European Union have been increasing in frequency. One-third of the territory experiences water stress, which compromises the availability of this type of natural resource.



Water reuse has been shown to be the most sustainable alternative to the use of desalinated seawater and imported water in economic terms and in terms of environmental impact

The reuse of water is still far from its maximum potential and is only practiced in certain territories of the European Union. Its high cost or demanding quality requirements, among other factors, are some of the main barriers to its application.

In a circular economy, water reuse plays a key role, bringing significant **environmental**, **social**, and **economic** benefits. There is high potential for increased water reuse but awareness of the benefits of this technology is low, and Europe lacks an adequate supportive framework for water reuse



The potential role of treated wastewater reuse as an alternative source of water supply is now well acknowledged and embedded within international, European and national strategies. UN Sustainable Development Goal on Water (SDG 6) specifically targets a substantial increase in recycling and safe reuse globally by 2030.

Reuse of **treated wastewater** can be considered a reliable water supply, quite independent from seasonal drought and weather variability and able to cover peaks of water demand

Source: <https://ec.europa.eu/environment/water/reuse.htm>



Innovative cost-effective water reuse approach in compliance with the new European regulation framework for agricultural irrigation (Water Reuse adaptation Regulation agRo)

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LIFE WARRIOR focuses on the **new regulation on minimum requirements for water reuse for agricultural irrigation** has entered into force.

Reused ultrafiltration membranes from water treatment plants will be used, where they are more demanding in terms of quality than in regenerating plants.

A **disinfection process** with low energy consumption and without chemical products will be applied, consisting of ultraviolet lamps with LED technology



Innovative cost-effective water reuse approach in compliance with the new European regulation framework for agricultural irrigation (Water Reuse adaptation Regulation agRo)



15%

Reduction in the cost of treatment

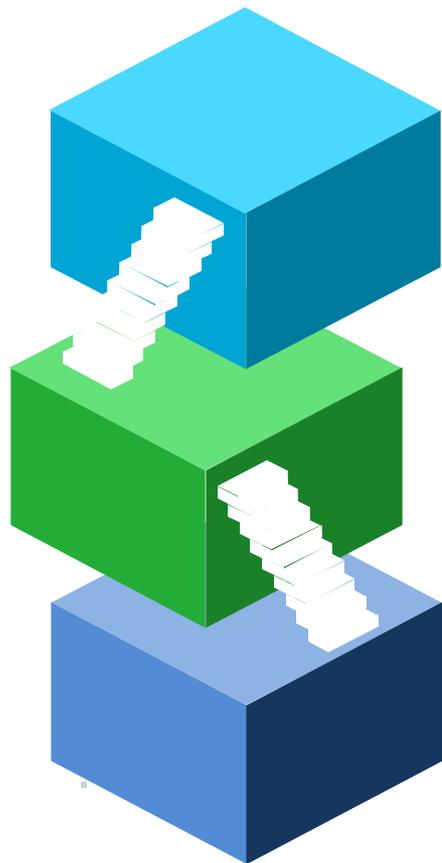
35%

Reduction in the CO2 emissions from the process



An **Intelligent Decision-Support System** (iDSS) will be built to provide the digital environment for LIFE WARRIOR.

The iDSS will provide **operational recommendations** to expand the useful life of ultrafiltration membranes. The tool will be based on a **risk management engine** which will consider the quality regulatory framework for water reuse.



Machine Learning

**Operational
expertise**

Data

AI for water
from water

17 people (maths, physics,
engineering, computer science)

Barcelona, Malaga

35 active projects

Research.
Collaboration.
Thinking forward.



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