

PROMOTING INNOVATION IN SUSTAINABLE WATER MANAGEMENT

The main objective of the LIFE REWAT project

This result will be achieved through the innovative concepts of nature-based solutions and the large use of Information and Communication Technologies (ICT, sensors, software). Along with the pilot actions, training, communication and participation activities will allow spreading the new paradigm among the technical, scientific and general public. The ICT tools are widely used to manage and control the impact of the pilot actions on groundwater resources. The project constitutes a relevant reference for the coming new issue of the Water Resource Protection Plan of Tuscany Region.

THE GOVERNANCE

A River Contract to share decisions

The public participation is a cornerstone of the LIFE REWAT project. The Letter of Intent signed on 2018 - May 4th constitutes the starting point for building the participatory process including the local communities of the Cornia Valley. This step sets the framework for a mid-term governance strategy, which will be finalized in a River Contract for the sustainable management of the Cornia Valley Water Resources.

This project has received funding from the European Union's Life (LIFE14 ENV/IT/001290)



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THE CORNIA VALLEY INNOVATION LAB FOR WATER RESOURCE MANAGEMENT



LIFE REWAT

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The **LIFE REWAT** project (sustainable WATER management in the lower Cornia Valley through demand REDuction, aquifer REcharge and River REstoration; cofinanced by the European Commission) main objective is to propose the sustainable management of water resources through innovation (implemented by means of 5 pilot actions) and participated governance.



MANAGED AQUIFER RECHARGE

*Nature-based solutions to increase
water resource availability*

A double-stage infiltration basin operates in Suvereto Municipality in order to increase the aquifer recharge process; water is derived from the Cornia River harvesting rainwater when its flow is at maximum, while at the same time ensuring the minimum ecological flow. The aquifer recharge pilot plant has been designed according to the new Ministerial Decree 100/2016 regulating artificial recharge in Italy. By means of this action, and depending on climatic conditions, we aim at recharging the Cornia aquifer with an estimated surface water volume ranging from 300.000 m³/y to 2 Mm³/y.



RIVER RESTORATION

Giving space back to the River

River restoration of the Cornia River aims at recovering the hydromorphological imbalance caused by gravel quarrying from the riverbed during the past decades. This action is implemented along three different reaches for an overall length of more than 1 km in Suvereto Municipality. About 3,500 m³ of gravel was mobilized; the riverbed was re-designed and enlarged two-three times respect to the previous conditions, in order to improve hydraulic connections between the river and the plain.

PRECISION IRRIGATION

Promoting efficient agricultural water use

A whole, 4 ha, subsurface drip-irrigation scheme for artichoke cropping system is running in the Municipality of Campiglia Marittima loc. Venturina Terme. During 2017, the fresh product production increased by 50% with respect to the district average, while the irrigation demand decreased by 70%-80% with respect to conventional management. These two improvements depend both on the increased distribution efficiency and to the remotely controlled system, sensing the soil water content and allowing irrigation only when needed.

MANAGEMENT OF LOSSES IN WATER DISTRIBUTION SYSTEMS

For efficient water supply

The water supply network of Piombino Municipality has been divided in 4 areas by positioning flow and pressure measuring points; the gathered data will inform the network hydraulic model. By simulating different operating conditions, along with the use of a specific equipment, we will identify losses, which should be reduced by at least 3%.



TREATED WASTEWATER REUSE

Fostering circular economy in the Cornia Valley

The pilot treated wastewater reuse scheme will serve the irrigation of the sport facility in Campiglia Municipality saving water and reducing nutrient contamination in surface water, while providing fertilisation. The pilot plant was authorized according to the Ministerial Decree 185/2003, the Italian regulation for permitting such plants.