

**Projects presented during
the EU CAP Network conference
'Water resilience in agriculture:
innovation in practice'**

19-21 May | Hamburg, Germany



Funded by
the European Union

Disclaimer: These posters have been developed within the frame of the EU CAP Network conference 'Water resilience in agriculture: innovation in practice'. The information and views set out in these posters are those of the author(s) and do not necessarily reflect the official opinion of the Commission. The Commission does not guarantee the accuracy of the data included in this posters. Neither the Commission nor any person acting on the Commission's behalf may be held responsible for the use which may be made of the information contained therein.



Table of contents



Cluster 'Circular water management'

Project	Contact
AQUAGRI-KNOW: maximizing the impact of eip-agri operational groups for efficient water management on-farm – unleashing practical knowledge and farmer-friendly resources	Anna Bagó Mas
Governance innovations for a transition to sustainable and equitable water use in Europe	Virginie Keller Josselin Rouillard
RE2AQUA - Reducing water consumption in the agri-food sector through reuse	Alexandre Galí
DIGEVA - Digestate treatment through vacuum evaporation to obtain concentrates rich in nutrients, usable as fertilizer products, and high-quality recovered water	Isabella De Bona Muñoz
Adaptation and implementation of innovative water treatment technology in a closed irrigation system with the use of biological protection agents on the example of cranberry cultivation	Mirela Kotlicka Ewa Kowalska
P2Green - Closing the gap between fork and farm for circular nutrient flows	Nadine Feuerbach
A fresh water future for Texel	Hans Merton



Cluster 'Climate-resilient and less water-intensive crops and cropping systems'

Project	Contact
Resilient Agricultural Irrigation systems for water Scarcity in Europe	Miranda Belene Jose Maria Guijarro
DSM-COWAM: Decision Support Model Integrating Cross-Compliance Rules and Rational Water Management	Mavrodis Douskos
IRRIVISION and VIVIS projects: optimising the irrigation management with the use of computer vision	Franco Meggio Denise Vicino
Techniques for improving resilience and water efficiency for Vineyards in the Piacenza area - Resilvigna	Filippo Del Zozzo
IN+VITE: New technologies for reducing vineyard inputs and for improving the sustainability of viticulture	Tommaso Frioni
Baltic Sea Farmer Award: Resilient Agriculture for a Healthier Baltic Sea	Finn Viehberg
WATERMELLON project	Camino Fábregas Maider Gofí



Cluster 'Digital tools, irrigation efficiency, precision irrigation'

Project	Contact
FruitCREWS COST ACTION Fruit tree Crop REsponses to Water deficit and decision support Systems applications	Manuela Zude-Sasse
DigiGarden: Development of strategies for fertilisation and plant protection in vegetable polyculture plantations	Eliza Ilze Malceniece
Irrigation water management in rice crop to meet the environmentally minimum river flow	Charalampos Doulgeris
Optimising Water Usage in Food Potato Crop Rotation through AI and Automation	Arto Korkeamäki
Automated irrigation management for resource-efficient agriculture	Rainer Schlepphorst
Epilote: Decision Support System accessible on smartphone, to dynamically control nitrogen fertilisation and wheat irrigation by adapting to the climate of the year	Stéphane Jezequel Eric Moullet
ZOBAM+ Drenthe&Groningen: Smart Underground Irrigation for Climate-Resilient Agriculture Saving water, energy and inputs with smart subsurface irrigation	Michiel Hillen Johan Tijms
WAPPFRUIT: Smart technologies applied to water management in fruit growing	Umberto Garlando
SISRICE Automated Sensor-Based Irrigation Management for Rice Cultivation	Charalampos Petkoglou
TRAS.IRRI.MA: Transfer of mature irrigation management technologies and protocols for irrigation optimisation	Rocco Sarli
PROMEDRICE Effective farming practices to protect Mediterranean rice-based agro-ecosystems	Claudio Gandolfi
CeDATeR: Water and Rural Areas Data Centre	Fabio Olivetti Stefano Roverato
Platform for Helping small and medium farmers to Incorporate digital Technology for equal Opportunities (PHITO)	Mihai Ciprian Margarint
Smart green water: Diffusion of Innovative Solutions & Capacity Building for Smart Irrigation	Jordi Oliver





Cluster 'Nature-based solutions'

Project	Contact
UNIVERSWATER - Universal interoperable sustainable agri-water management platform	Pierre Lovera Ivan Portoghese
SpongeWorks - Co-creating and Upscaling Sponge Landscapes by Working with Natural Water Retention and Sustainable Management	Maike Gebker
OG Brenta 2030: Payments for Ecosystem Services to improve the quality and quantity of the water resources in the Brenta river	Alessandro Leonardi
UMZOG - our peatland future in the Oldenburger Graben lowlands	Ilka Bestmann
GOODWATER - Implementation of River Basin Management Plans of Latvia towards good surface water status (LIFE)	Iveta Grudovska Zanda Melnalksne
WATERAGRI - Water retention and nutrient recycling in soils and streams for improved agricultural production	Attilio Toscano



Cluster 'Soil management'

Project	Contact
Innovative postharvesting technologies to restore soil sustainability	Aušra Arlauskienė Lina Šarūnaitė
Extensive peat meadow earning company	Jeroen Pijlman
DaLeA - Permanent living mulch in arable farming	Rolf Allner Christine Mittermeier
OptEro - Optimizing erosion control in potato cultivation	Günter Haslinger Christine Weinberger
LIFE CO2SAND - Using clay to make sandy farmland climate proof	Jan Willem Berendsen
Improvement of Heavy Meadow Soils	Vince Lang
SOILUTION SYSTEM - Innovative solutions for soil erosion risk mitigation and a better management of vineyards in hills and mountain landscapes	Paolo Tarolli



Cluster 'Water quality / water pollution'

Project	Contact
Water protection Wheat	Katharina Meyer
GO TIC4BIO: Increasing the competitiveness of the Andalusian organic agri-food sector through the use of information and communication technologies.	Nicolás Aranda Pérez Eugenio Rafael Rodríguez Lopez
SUPERIRRI - Optimisation of surface irrigation in traditional mixed grass meadow and rice crops for groundwater protection	Salvatore Luca Gentile
Mulkear EIP	Martin Crowe Sean Lavery
GEMS - Groundwater management in nitrate vulnerable zones with agriculture activities	Manuel Boluda Antonio Jose Sandoval Sanchez
Project for Precision Agriculture and Aquifer Management in the Campo de Cartagena Irrigation Community (Murcia)	Ginés Bermúdez Soto Miguel Ángel del Amor Saavedra
The Pearl Mussel Project EIP	Patrick Crushell
Developing innovative solution for mitigation of drought effects - DIME	Ildiko Lung Loredana Soran
Path4Med Demonstrating Innovative Pathways Addressing Water and Soil Pollution in the Mediterranean Agro-Hydro-System	Philippos Alexandrou Nicos Larkos



Field visits

Project	Contact
AHOI.SH	Felix Riecken
Airborne Sowing	Ruben Soth
FloraGPT	Thormin Stiegler
HydroBeet	Stephen Baumgarten
Klimafarm project – a nationwide pilot for climate-friendly moor restoration and utilisation	Elena Zybek
Nutrient-Compass Schleswig-Holstein	Anne Blanke
Spatial and temporal water distribution under irrigation machines (4D-Rain)	Klaus Röttcher
Variety-rich undersown mixtures in oat cultivation - Oat meadows	Sandra Spielvogel
WassKli	Felix Schmidt
WaterFarmers - Securing the groundwater supply for field irrigation in the district of Uelzen	Clemens Löbnitz

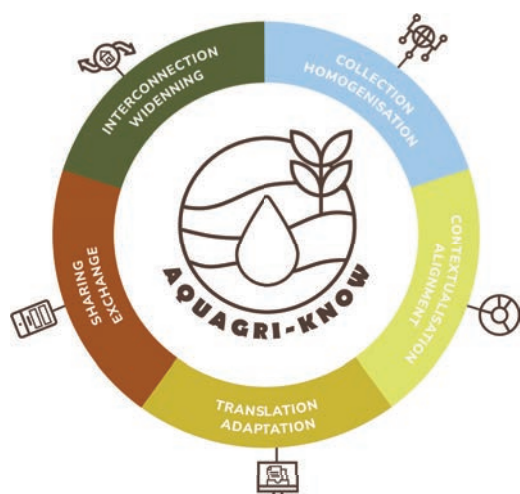
Other projects

Project	Contact
Exploration of the simulation of crop growth and soil moisture for regenerative agriculture	Annabelle Williams
Sustainable cut flowers - A project for future-proof flower farms	Lina Leppich Liza Nemes



CLUSTER 'CIRCULAR WATER MANAGEMENT'





MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

- Increasing water scarcity and climate variability (droughts, floods, irregular rainfall)
- High water demand in agriculture and inefficient on-farm water use
- Water quality pressures from crop and livestock systems
- Fragmented knowledge and limited uptake of existing innovations
- Need to adapt solutions to diverse regional farming contexts

SOLUTION DEVELOPED

AQUAGRI-KNOW creates an EU knowledge transfer ecosystem for water-smart farming by:

- Collecting and harmonising knowledge from EIP-AGRI Operational Groups and other initiatives.
- Translating innovations into practical tools, practice abstracts, manuals and a MOOC.
- Establishing Regional Social Labs to adapt solutions locally.
- Promoting cross-border learning and an Ambassador Network to share best practices.

HOW IT CONTRIBUTES TO WATER RESILIENCE

- Supports efficient and sustainable water use on farms
- Facilitates the uptake of nature-based and circular water management practices.
- Strengthens collaboration between farmers, advisors, researchers and policymakers.
- Scales up proven innovations across regions and farming systems

UPTAKE / PRACTICAL APPLICATION

Who benefits: farmers, advisors, agricultural trainers, and policymakers

How:

- Practical training materials and tools
- Peer-to-peer learning through Regional Social Labs and the Ambassadors' program
- Cross-border exchanges and territorial roadmaps
- Knowledge that can be adapted to different farming contexts

PROJECT TYPE: Horizon Europe
(HORIZON-CL6-2024-GOVERNANCE-01)

DATES: 36 months (February 2025 to January 2028)

BUDGET: 1.999.868,17 €

CONTACT: Carla Febrer Sanglas,
project coordinator carla.febrer@uvic.cat



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Whilst various technical solutions to water management in agriculture exist, it is often broader governance challenges that remain the bottleneck to their implementation.

SOLUTIONS DEVELOPED

GOVAQUA project has identified, further developed and validated several governance innovations for water management in agriculture, including:

Innovation	Category	Water management challenge	Country	Type
User based reallocation in agriculture	Legal and regulatory instruments	Water quantity	France	Good practice case study
Quantitative water management plans	Legal and regulatory instruments	Water quantity	France	Good practice case study
Food value chain water stewardship collective action	Collaborative approaches	Water quantity, water quality, ecosystem health, safe access to WASH	Finland, the UK, Spain	Living Lab* Good practice case study
Volumetric rate	Economic instruments	Water quantity	Italy	Good practice case study
Payments for ecosystem services	Economic instruments	Water quantity, water quality, ecosystem health	France	Living Lab Good practice case study
Decision support tool for water user association	Digital solutions for information sharing	Water quantity	Spain	Living Lab*

*See pictures below

HOW THEY CONTRIBUTE TO WATER RESILIENCE

Water resilience consists of the capacity of our socioecological systems, especially aquatic ecosystems and the communities that rely on high-quality and sufficient water supplies, to manage change—either by resisting, adapting, or transforming in response to it. The solutions presented above seek to help food value chain and agricultural actors to adapt or transform their practices under changing environmental conditions.

UPTAKE AND PRACTICAL APPLICATION

All the solutions presented are based on real life case studies, three of them being co-created in GOVAQUA Living Labs with local food value chain actors including farmers. Conditions for further uptake and replicability were identified.



PROJECT TYPE: Horizon Europe (101086578)

DATES: 1.2.2023-31.1.2027

BUDGET: € 3 003 645,00

CONTACT: Project Manager
Dr. Suvi Sojamo, Finnish Environment Institute
suvi.sojamo@syke.fi

WP lead Dr. Virginie Keller
UK Centre for Ecology and Hydrology vke@ceh.ac.uk



Decision support tool for water user association in Axarquía developed in GOVAQUA



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

RE2AQUA – Reduction of water consumption in the agri-food sector through reuse

Reducció del consum d'aigua al sector agroalimentari a través de la reutilització

<https://betatechcenter.com/es/proyectos/re2aqua/>

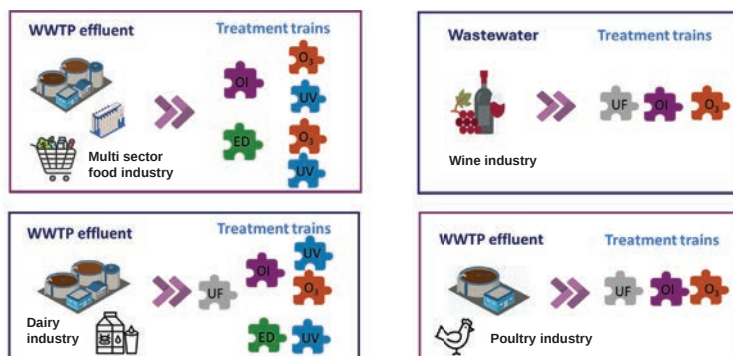


MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

1. Climate crisis
2. Regulatory pressure
3. Technological Safety
4. Legislative goals

SOLUTION DEVELOPED

Combining membrane technologies and advanced oxidation treatment trains:



HOW IT CONTRIBUTED TO WATER RESILIENCE

RE2AQUA implements decentralised treatment trains to transform industrial wastewater from agrifood sectors into high-quality reclaimed water for cleaning, irrigation, urban uses, and aquifer recharge. This solution ensures production continuity during droughts and provides the scientific evidence needed to overcome legislative barriers and meet water-saving mandates.

PROJECT TYPE: EIP-AGRI Operational Group

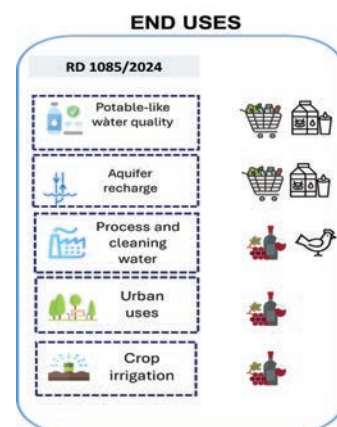
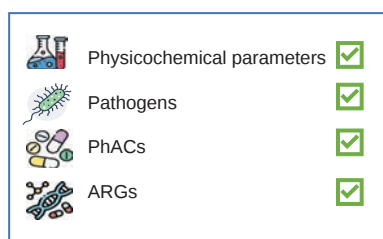
DATES: 2024-2026

BUDGET: 307,399.18€
(funded by EIP-Agri).

CONTACT:

Xavier Amores I
xavier.amores@swp.cat

Alexandre Galí I
alexandre.gali@uvic.cat



UPTAKE / PRACTICAL APPLICATION

Agri-food companies can adopt these technologies through:

- Step-by-step technical guides to implement water reuse on-site
- Seminars & training sessions to share results with practitioners
- Sector networks; reaching 231 + cooperatives across the region



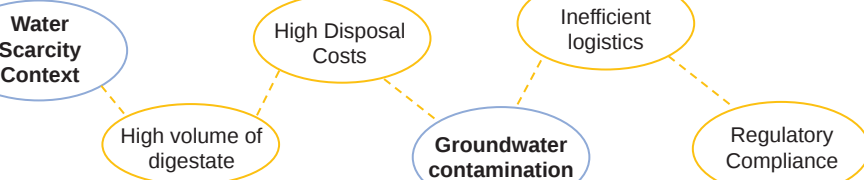
This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

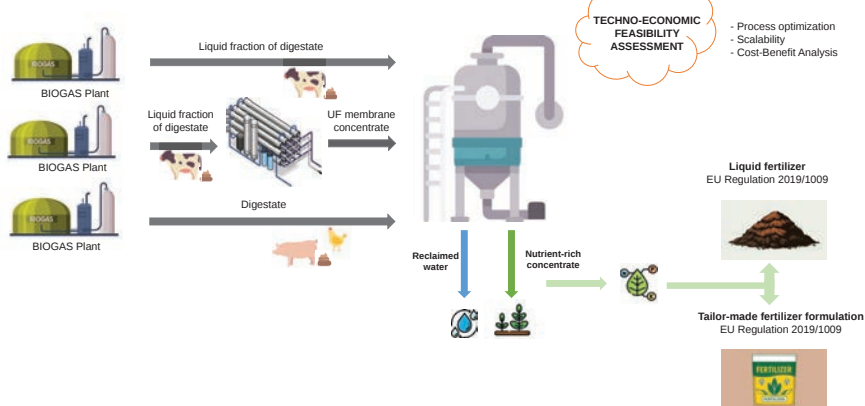


Funded by
the European Union

MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED



SOLUTION DEVELOPED



HOW IT CONTRIBUTED TO WATER RESILIENCE

1. Innovative solution: Vacuum Evaporation

Advanced treatment of the liquid fraction of digestate
High-Value Outputs

2. Water & Environmental Resilience

Resource recovery
Pollution Control
Sustainability

3. Economic & Social Impact

Circular Bioeconomy
Cost reduction
Rural Development

UPTAKE / PRACTICAL APPLICATION

- Custom biofertilisers development
- Agronomic & Regulatory Validation
- Overcoming Legal Barriers
- Strategic Regional Growth
- New water resource for irrigation with less aquifer impact



Work in process with farmers...

PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 2024-2026

BUDGET: 248,349.56 €

CONTACT: Alexandre Galí
alexandre.gali@uvic.cat
Conrad Paga
cpaga@clusterbioenergia.cat



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Funded by
the European Union



PROJECT TYPE: EIP-AGRI
Operational Group

(Rural Development Programme
2014–2020, Measure
“Cooperation”)

DATES: 2019-2022

BUDGET: Funding awarded for
the implementation of the
operation: PLN 3,994,219.00

CONTACT: Fieldstone
Investments II Sp. z o.o. /
Original Food Sp. z o.o. Poland
www.fieldstone.pl |
www.originalfood.pl

MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The project addresses key challenges in agricultural water management, including water scarcity, water quality, and the risk of pathogen accumulation in closed irrigation systems. It develops a cost-effective filtration solution that enables safe water reuse while maintaining stable water quality. The approach supports more efficient water use and increases farm resilience to drought.

SOLUTION DEVELOPED

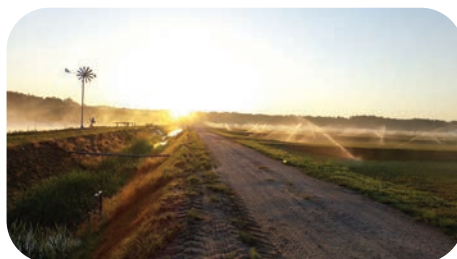
The developed solution is based on a cascading filtration barrier system implemented in a closed water circulation used for cranberry irrigation. The system effectively reduces fungal propagules and prevents their accumulation in recirculating water. The technology is simple, cost-effective to install and maintain, and enables the safe reuse of water in agricultural production.

HOW IT CONTRIBUTED TO WATER RESILIENCE

The developed technology improves water resilience by enabling the safe reuse of water within a closed irrigation system. By reducing the accumulation of fungal pathogens and maintaining stable water quality, it allows farmers to rely less on external water sources. This increases the efficiency of water use and helps farms adapt to drought and limited water availability.

UPTAKE / PRACTICAL APPLICATION

The technology can be used by cranberry growers operating closed-loop irrigation systems, particularly in flooded cultivation. The solution is simple, low-cost, and scalable, which means it could also be adapted to other agricultural systems where water recirculation is used. Farmers, agricultural advisors, and companies developing water management technologies can benefit from this innovation, especially in regions facing water scarcity.



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Water scarcity; nutrient loss; water pollution; dependence on synthetic fertilisers; dependence on end-of-pipe nutrient removal; cost and energy intensiveness of wastewater treatment

SOLUTION DEVELOPED

Our 3 pilot regions in Sweden, Germany, and Spain tested and implemented 4 technologies to recover nutrients from human excreta; In Sweden and Germany, directly at the source to produce recycled fertilisers locally; in Spain, reclaim nutrient-rich wastewater for irrigation. The approaches support circular reuse of nutrients, reuse and reduction of water use and are designed to be scalable and adaptable to regional conditions.

HOW IT CONTRIBUTED TO WATER RESILIENCE

The project strengthens water resilience by reducing dependence on freshwater resources through the safe reuse of treated wastewater for irrigation and the nutrient recovery at source. It improves nutrient availability while lowering pollution risks to connected rivers and marine systems, and more efficient water use in agriculture. By closing water and nutrient loops, it helps farming systems adapt to increasing water scarcity and climate variability.

UPTAKE / PRACTICAL APPLICATION

Farmers: locally produced, nutrient-rich, bio-based fertilisers and reclaimed water managed via Smart Fertigation Tool for more resilient crop production;

Water utilities: reduced input from Nitrogen and Phosphorus to waste water treatment plants (Sweden, Germany) and resource recovery (Spain);

Municipalities: enhance circular resource management while reducing environmental pollution.



PROJECT TYPE: Horizon Europe

DATES:

Dec 2022 – Dec 2026

BUDGET: 7 250 117,00 €

CONTACT:

info@p2greenproject.eu ;

coord.p2green@agrathaer.de



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Agriculture on the isle of Texel completely depends on rainfall: surface water and groundwater are too saline to be used for irrigation. In addition, rainfall patterns are changing due to climate change. Annual rainfall is increasing in the Netherlands, but the rainfall pattern is shifting towards winter while spring and summer are becoming drier. This results in lower yields on Texel in comparison with the mainland.

SOLUTION DEVELOPED

In winter in the Netherlands, the total amount of excess rainfall is approximately 300mm. The agricultural sector needs around 150mm per cropping season on average. Texel has sufficient fresh water but at the wrong moment. An aquifer storage and recovery (ASR) system storing the excess rainfall in winter solves this temporal challenge. In cooperation with TUDelft, a pilot was developed using fresh tile drainage water collected from 30ha of farm fields. Before infiltration, a Slow Sand Filter with Granular Activated Carbon removes pesticides and nutrients. In winter, a freshwater body within an extremely saline aquifer has been built up using horizontal wells. This freshwater body can then be used in summer for irrigation.

HOW IT CONTRIBUTED TO WATER RESILIENCE

Over the past 4 years, in total 92.000 m³ fresh water was infiltrated. In 3 successive summer periods, the recovered water remained fresh. The participating farmers are now self-sufficient regarding their freshwater demand during the cropping season.

UPTAKE / PRACTICAL APPLICATION

Agriculture benefits from this innovation, not only on Texel but in principle in all coastal regions that are subject to salinisation. Insight in both the technical feasibility & design and the business case, create an enabling environment for the uptake of ASR.

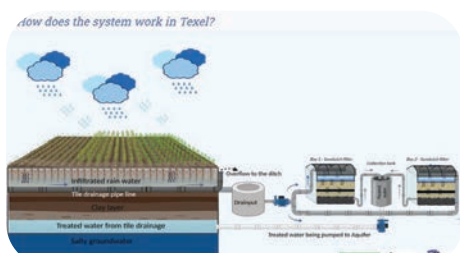


PROJECT TYPE: local innovative project, funded by local authorities, including, province and water board

DATES: December 2022 – December 2026

BUDGET: 3,0 Million Euro

CONTACT: Mr. J.G. Merton
MSc – Acacia Water
hans.merton@acaciawater.com



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

CLUSTER

'CLIMATE-RESILIENT AND LESS WATER-INTENSIVE CROPS AND CROPPING SYSTEMS'





MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The project addresses the EU's water scarcity, which affects 20% of its territory and causes heavy agricultural losses. It tackles nutrient mismanagement by improving water efficiency and reducing reliance on polluting inorganic fertilisers. Furthermore, it aims to overcome market barriers, specifically the high costs and lack of trust hindering technology adoption, alongside the shortage of viable, circular organic biofertilisers or biostimulants.

SOLUTION DEVELOPED

The project features a circular biofertiliser or biostimulant derived from nitrogen-rich proteins and amino acids sourced from slaughterhouse blood waste and wastewater microalgae. Using enzymatic hydrolysis, the process recovers high levels of free amino acids without the pollutants common in chemical methods. Finally, the product is optimised for fertigation, allowing for the integrated and efficient delivery of water and organic nutrients through existing irrigation systems.

HOW IT CONTRIBUTED TO WATER RESILIENCE

The project uses amino acids like glycine and proline from blood waste to help plants manage osmotic stress and stabilise cell membranes during droughts. These biostimulants optimise the crop's physiological response, effectively reducing total freshwater demand. Additionally, the formula improves soil health by adding organic matter, which enhances long-term structure and water retention capacity.

UPTAKE / PRACTICAL APPLICATION

The project benefits primary producers in water-scarce regions (e.g., Spain and Greece), biotech SMEs looking for circular business lines, and waste managers (slaughterhouses and wastewater plants) seeking to valorise sub-products. Additionally, regional and EU authorities gain scientific data to support sustainable fertilisation policies.



PROJECT TYPE: HORIZON
EUROPE

DATES: 11/2024 – 10-2028

BUDGET: € 4 873 758,43

CONTACT: bmiranda@sav.es



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Funded by
the European Union



<https://dsmcowam.gr/en/>



PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 5/12/2022 – 4/8/2025

BUDGET: €294.851,00

CONTACT:
info@ergoplanning.gr

MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Agricultural water use is often inefficient due to **limited integration of environmental regulations and economic data** into farm planning. Farmers and producer groups **lack practical tools** that combine agronomic, economic and environmental information to support decision making.

In addition, the new CAP cross-compliance rules introduce **requirements** for sustainable water use that are **difficult to translate into everyday** farm management practices.

SOLUTION DEVELOPED

DSM-COWAM developed a **Decision Support Model** (DSM) integrated into a **web-based** farm management platform.

The system **collects and processes** technical and economic farm data and **evaluates alternative crop production scenarios** considering water use and CAP compliance rules.

Through the online application, farmers can **record farm data** and **receive recommendations** for more efficient and sustainable production planning.

HOW IT CONTRIBUTED TO WATER RESILIENCE

The model supports the **optimisation of crop planning** and farm management **while reducing water consumption**.

Pilot applications demonstrated that alternative production plans can decrease irrigation water use while **maintaining or improving farm profitability**.

By integrating economic and environmental indicators, the system promotes **more sustainable** and **resilient** agricultural water management.

UPTAKE / PRACTICAL APPLICATION

Farmers, producer groups and agricultural advisors can use the platform to **analyse farm data** and **evaluate alternative** crop production plans.

The system supports **improved irrigation planning, reduced production costs and better compliance with CAP environmental requirements.**

It can also support **advisory services** and **producer organisations** in **designing** more efficient and sustainable **farming strategies**.

Λήψη Αποφάσεων Κλάδων Παραγωγής

Τεχνικά & Οικονομικά Δεδομένα

Kódus	Tag	Arányok (%)	Értékek (g)	Arányok (%)	Értékek (g)	Egyesek	Eszközök	Értékek (g)
1A002	MH	1000,0	0	17,99	10,0	423	2,23	33,0
1T9H4V		1000,0	0	18,0	10,0	424	2,24	33,0
KAMAMTOK		8520,89	4,5	50,0	9,83	1,11	1,11	24,99
1T4P1	MA	350,0	18,0	15,0	10,0	1,32	1,32	10,5
BK02	JAN	350,0	18,0	15,0	10,0	1,42	1,42	13,3
1T9H1	M	1000,0	0	18,0	10,0	417	2,17	28,0

Λήψη Αποφάσεων Κλάδων Παραγωγής

Ακαθόριστη Πρόσδεξις

Machine Parameters	Baseline Parameters (g/s)	Optimized parameters	Full Training 5 Epochs	Average parameters (g/s)
SMC25-500000	49660.00	49660.00	0.20	10000.00
Thymus4	9000.00	9000.00	0.20	200.00
ARMADILLO2	17310.00	17310.00	0.10	10719.00
ELITE-500000	8000.00	8000.00	0.20	400.00
SMC25-50000	8650.00	8650.00	0.20	107.00
Thymus4-50000	4700.00	4700.00	0.20	540.00

[illegible]

This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Climate change and increasing pressure on water resources make efficient water management in agriculture (accounting for about 70% of global freshwater use) a key challenge for sustainability and competitiveness.

SOLUTION DEVELOPED

IRRIVISION is a novel DSS for irrigation advice, especially developed for grapevine. The system integrates climatic data of a weather station with soil sensors and an innovative canopy monitoring based on computer vision (stereo vision + IR), able to detect the average leaf angle and temperature of the canopy. The crop water status is assessed by the combination of a new stress index based on leaf inclination detection and the CWSI (Crop Water Stress Index) based on thermal measurements.

As a follow up, IRRIVISION is currently being tested within the ViViS project to assess the spatial range of validity of the system in the field and to attempt a spatialisation of the model through the integration with soil mapping and canopy mapping technologies, from aerial or ground vehicles.

HOW IT CONTRIBUTED TO WATER RESILIENCE

IRRIVISION aims to optimise irrigation timing and volumes according to the real crop needs, allowing the saving of water and scheduling irrigation according to the specific quality/quantity production targets.

UPTAKE / PRACTICAL APPLICATION

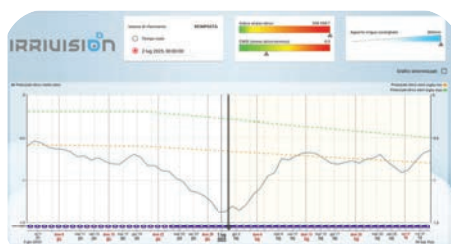
Farmers adopting the use of modern weather stations, equipped with this special computer vision system, can rely on novel information detected from the canopy to assess the plant water status. As shown in the ViViS project, the same technology can be used by farmers for multiple purposes, like the application of disease forecasting models, the enhancing the advantages and the return of investment. The application is being extended to kiwifruit and other tree crops.

PROJECT TYPE: EIP-AGRI
Operational Group

DATES: IRRIVISION 2019-
2022 / ViViS 2025-2028

BUDGET: IRRIVISION € 344
748 / ViViS € 399 986

CONTACT: Denise Vicino
CET Electronics
info@cet-agritech.com



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

Techniques to improve resilience and water use efficiency in the vineyards of the Piacenza area - Resilvigna

Tecniche di miglioramento di RESILienza ed efficienza idrica per i VIGNeti dell'Areale piacentino



[website](#)



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Vineyards face increasingly severe droughts, with significant water stress risks, yield and grape quality losses. The project aimed to demonstrate that already-available practices can considerably increase vineyard resilience to water shortage.

SOLUTION DEVELOPED

- 1) M-series rootstocks validation showing higher tolerance to water stress, offering a long-term resilience strategy.
- 2) Autumn-spring cover cropping with innovative termination management, improving soil water storage and reducing evapotranspiration through natural mulching.
- 3) Agronomic validation, demonstration and delivery of guidelines for the use of kaolin in the vineyard.
- 4) Demonstration and training of precision water stress monitoring through sensor-based tools, enabling timely and targeted interventions.

HOW IT CONTRIBUTED TO WATER RESILIENCE

The solutions act on multiple levels: improving vine stress tolerance, reducing evapotranspiration and heat at both soil and canopy level, and with timely interventions.

UPTAKE / PRACTICAL APPLICATION

All practices are low-cost, flexible, and suited to small and medium family farms, adopted independently or in combination. The project has produced technical guidelines and generated a follow-up research initiative extending the approach to other wine regions.



PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 27/04/2020 –
27/10/2023

BUDGET: € 399,598.22

CONTACT:
direzione.sedepc@pec.ucsc.it



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Funded by
the European Union



PROJECT TYPE: EIP-AGRI
Operational Group

DATES: Feb 2023 – Feb 2025

BUDGET: 249,370.16 €

CONTACT: Tommaso Frioni
tommaso.frioni@unicatt.it

MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Mediterranean viticulture is largely conducted under rainfed conditions. Under ongoing climate change, the impact of water scarcity on vine growth and crop establishment is progressively intensifying. This issue is particularly critical during the early stages of vineyard establishment, when vines possess underdeveloped root systems confined to superficial soil layers and are therefore highly vulnerable to prolonged drought. These conditions can result in reduced vegetative growth, increased vine mortality, and substantial economic losses for growers, who must replace dead plants while facing extended unproductive periods following significant initial investments in vineyard planting.

SOLUTION DEVELOPED

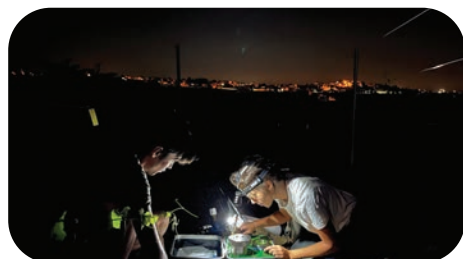
Hydrogels are materials composed of long hydrophilic polymeric chains capable of absorbing substantial amounts of water relative to their own weight. Recently, novel sustainable hydrogels derived from organic sources have become available, representing a potential game changer for their application in enhancing agricultural resilience to drought and limited water availability.

HOW IT CONTRIBUTED TO WATER RESILIENCE

Three new-generation hydrogels were evaluated for their capacity to absorb water and make it available to grapevines, under different soil conditions. Although the tested hydrogels exhibited distinct properties, all of them increased soil field capacity and maximum available water. Under field conditions, these hydrogels improved vine water status, physiological performance, and vegetative growth during the first years after transplanting, effectively advancing the transition to full productivity by one growing season.

UPTAKE / PRACTICAL APPLICATION

When the IN+VITE project began, only three hydrogels were available, including both commercially available and experimental formulations. To date, at least 13 different types of hydrogels are now present on the market. These materials were initially tested in newly established vineyards managed by growers involved in the Operational Group. Following project dissemination, several external growers independently adopted hydrogels to evaluate their effectiveness in newly established vineyards and for replacing dead vines. Today, hydrogels represent a promising solution with the potential to significantly enhance drought tolerance in agricultural systems.



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Funded by
the European Union



PROJECT TYPE: Other

DATES: 2009 - today

BUDGET: 1.7 M €

CONTACT:

finn.viehberg@wwf.de

MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Nutrient runoff from agriculture is a major cause of eutrophication in the Baltic Sea, threatening biodiversity and water quality.

Climate change increases the frequency of droughts and heavy rainfall, challenging traditional farming practices.

Lack of knowledge transfer between farmers, scientists, and policymakers slows the adoption of sustainable solutions.

SOLUTION DEVELOPED

The **Baltic Sea Farmer Award** recognises and scales innovative farming practices that:

Reduce nutrient runoff through agroforestry, precision farming, and organic fertilisation.

Enhance biodiversity by integrating nature-based solutions (e.g., buffer strips, wetland restoration).

Promote climate resilience via digital tools for water and soil management.

Bridge science, policy, and practice through farmer networks, workshops, and the **WWF Measures Handbook** (10 scalable solutions for water retention and quality).

HOW IT CONTRIBUTED TO WATER RESILIENCE

30%+ reduction in nutrient runoff on award-winning farms, improving local water quality.

Increased water retention through agroforestry and soil management, mitigating drought and flood risks.

Policy alignment with EU Water Framework Directive and CAP goals, demonstrating voluntary initiatives as drivers of systemic change.

Cross-border collaboration fosters knowledge exchange and scales best practices across the Baltic Sea region.

UPTAKE / PRACTICAL APPLICATION

Farmers: Gain recognition, access to networks, and practical tools (e.g., WWF Measures Handbook) to improve sustainability and profitability. **Policy makers:** Receive evidence-based solutions for integrating water resilience into agricultural policies.

Scientists & Advisors: Collaborate with farmers to co-develop and test innovative practices.

Local Communities: Enjoy improved water quality, biodiversity, and climate adaptation.

Participate in the Baltic Sea Farmer Award for visibility and support.

Use the WWF Measures Handbook to implement nature-based solutions.

Join workshops and farmer exchanges to learn from peers and experts.



Soil

- Conservation tillage
- Crop rotation design
- Cover crop cultivation
- Erosion control



Water

- Irrigation management
- Riparian buffer strips
- Drainage management
- Restoration, e.g. ponds



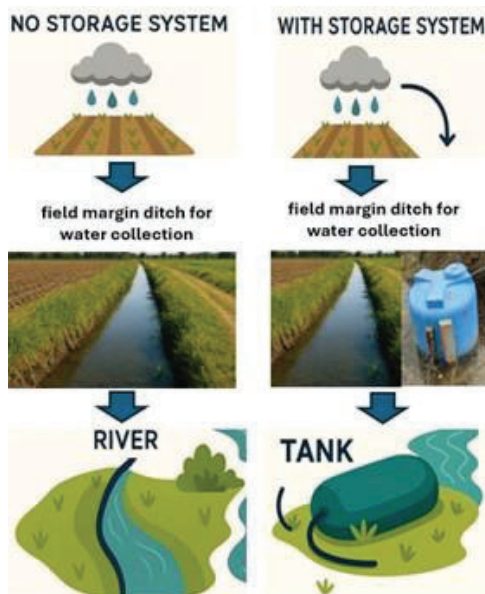
Nutrients

- Nutrient cycles
- Organic fertilization
- Precision farming
- Nutrient accounting



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The Mediterranean region is one of the most water-stressed areas in the world - and climate change is making things worse. Farmers are already dealing with longer droughts, record-breaking heat, and less available water. This puts agriculture at serious risk and threatens the livelihoods of many people across the region.

SOLUTION DEVELOPED

WaterMellon develops novel dry farming systems to address the challenges of extreme droughts in arid and/or semi-arid Med regions. It integrates traditional water practices with climate-smart innovations, and validates solutions in real-world conditions. The project also focuses on building circular value chains and ensuring strong community engagement for long-term impact and adoption.

HOW IT CONTRIBUTED TO WATER RESILIENCE

By combining: a) **novel cropping systems** including drought and/or saline tolerant underutilised species, b) **innovative hydro-technologies** inspired from traditional water harvesting systems, and rehabilitated ancestral structures, c) **efficient water use techniques** including surface and subsurface drip irrigation as well as smart irrigation (using EO and GIS), d) practices **soil and water conserving**.

UPTAKE / PRACTICAL APPLICATION

2026: Seven water-smart farming system sites that showcase practical solutions for farmers adapting to extreme drought and climate change.

Farmer community and advisory services: new crops and cropping systems, including markets **Research community; Industry:** Food (gluten-free products, food ingredients, etc.) and Feed Industry (animal feeding) and Bio-based industry (biocomposts and biochar).



PROJECT TYPE: PRIMA

DATES: 03/2025-05/2028

BUDGET: 4.799.785 €

CONTACT: Efthymia Alexopoulou - ealex@cres.gr

Maider Goñi

mgoni@iniciativas-innovadoras.es

Call 2024 Section 1 Farming in Nexus



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

CLUSTER 'DIGITAL TOOLS, IRRIGATION EFFICIENCY, PRECISION IRRIGATION'





MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

- Understanding how fruit tree crops respond to drought stress in different environments
- Identifying and training on effective tools for real-time monitoring of plant water status, using new technologies
- Harmonising knowledge across the field, by reviewing existing research, training future irrigation experts, and engaging with farmers.

SOLUTION DEVELOPED

- Identifying cost-effective and user-friendly sensor tools to measure drought stress.
- Advancing efficient irrigation strategies for different crops and environments and improving existing decision support systems.
- Promoting their implementation in a multi-actor approach.

HOW IT CONTRIBUTED TO WATER RESILIENCE

Harmonisation of knowledge within the R&D community, training on upcoming technologies, identification of specific research gaps, and dissemination to stakeholders.

UPTAKE / PRACTICAL APPLICATION

- Extensive knowledge exchange, advancement and dissemination across crop borders with 353 members from 43 countries for four years, including surveys among fruit growers.
- Practical guidelines and dissemination materials for all stakeholders.



PROJECT TYPE: COST Action

DATES: 11/2022 – 10/2026

BUDGET: 731.443 €

CONTACT: Prof. Brunella Morandi (Action Chair) - Dr. Manuela Zude-Sasse (WP 5 - Implementation into Practise)



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Overuse and inefficient use of irrigation water.
Insufficient real-time data on moisture and nutrient dynamics.
Nutrient leaching and diffuse pollution risks.
Limited decision support for precision irrigation in vegetable fields

SOLUTION DEVELOPED

Precision irrigation trials in cabbage, carrot and leek fields
Real-time nutrient sensing with electrochemical multisensors
Integrated crop–soil–weather data platform

HOW IT CONTRIBUTED TO WATER RESILIENCE

Better timing and targeting of irrigation.
Improved adaptation to drought and variable weather
Stronger data base for resilient field management

UPTAKE / PRACTICAL APPLICATION

Growers: better irrigation and fertilisation decisions.
Farms: lower input losses and more efficient resource use.
Sector: transferable model for digital, data-based horticulture.



PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 01.05.2025 -
31.12.2027

BUDGET: 297857,73 €

CONTACT: Anta Sparinska
anta.sparinska@bulduri.com



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Balancing Agriculture & Ecosystem Sustainability: Mitigating flow reduction in the Axios River estuary by reducing irrigation in the Thessaloniki rice plains without compromising crop yield or quality.

SOLUTION DEVELOPED

Irrigation & Modeling: Validated water-saving strategies (75% and 50% regimes) combined with a river-basin water management model.

HOW IT CONTRIBUTED TO WATER RESILIENCE

Water Savings: Reduced irrigation water use in rice crops by up to 50% without significant losses in yield or grain quality.

Ecosystem Restoration: Secured the minimum environmental flow of the Axios River, protecting the biodiversity and ecological balance.

Strategic Modeling: Developed a water management decision tool that links farm level irrigation practices to river basin level sustainability.

UPTAKE / PRACTICAL APPLICATION

Farmer Benefits: more efficient water use, lower irrigation costs, resilience to future water restrictions.

Regional Impact: Strengthened ecosystem resilience and sustainable resource management through active engagement and demonstration plots.



PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 22/02/2023 -
31/07/2025

BUDGET: 140,675,35 €

CONTACT: Charalampos
Doulgeris, Principal
Researcher, Soil & Water
Resources Institute - Hellenic
Agricultural Organization
'DIMITRA'

ch.doulgeris@elgo.gr



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

Optimising Water Usage in Food Potato Crop Rotation through AI and Automation



Vesitalouden optimointi ruokaperunan vuoroviljelyssä tekoälyllä ja automatiikalla

<https://projektit.seamk.fi/kestavat-ruokaratkaisut/vesitalouden-optimointi-perunan-vuoroviljelyssa-tekoalylla-ja-automatiikalla/>



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Potato irrigation implemented through sub-irrigation to help deal with extreme weather that can negatively affect potato yields

SOLUTION DEVELOPED

Optimising water usage in potato crop rotation through AI and automation

HOW IT CONTRIBUTED TO WATER RESILIENCE

The project has developed a new AI-driven, automated water-management ecosystem for potato crop rotation. It integrates controlled drainage, controlled irrigation, real-time sensors, renewable-energy-powered pumping, and predictive AI models into one scalable solution. This innovation improves water resilience by optimising soil moisture, reducing water use, stabilising yields, lowering costs, and decreasing nutrient runoff. It strengthens the resilience of farmers, the agricultural sector, and the wider region in the face of increasing climate variability.

UPTAKE / PRACTICAL APPLICATION

This innovation benefits potato farmers by enabling more precise water management through sub-irrigation, controlled drainage, sensors, and AI-based decision support. It helps optimise soil moisture according to crop needs, leading to more stable yields, improved quality, reduced water use, and lower nutrient runoff. The solution is adaptable to different farm sizes and crop rotations and can be applied by farmers, advisors, and technology providers, supporting wider uptake and improved water resilience in agriculture.

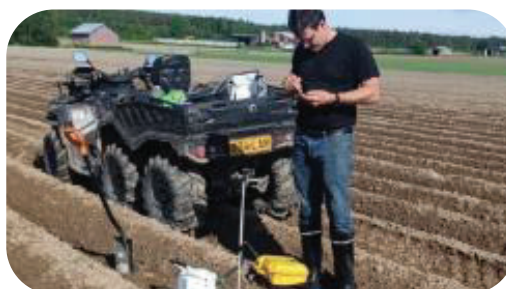


PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 2024-2026

BUDGET: 217 077,28 €

CONTACT: Jussi Ylinen
+358 40 830 4003
jussi.ylinen@seamk.fi



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Funded by
the European Union



PROJECT TYPE: EIP-Agri
Operational Group

DATES: 03.06.2021 -
31.12.2024

BUDGET: 498.793,00 €

CONTACT: Rainer
Schlepphorst
Research Institute for Post-
Mining Landscapes
Brauhausweg 2
03238 Finsterwalde Germany
r.schlepphorst@fib-ev.de
phone: 0049 3531-790713

MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The need to maintain regional economic growth and local food production despite increasingly challenging climatic conditions underscores the importance of irrigation. However, water must be managed responsibly. Efficient irrigation management and the selection of appropriate technologies are crucial to ensuring sustainability.

SOLUTION DEVELOPED

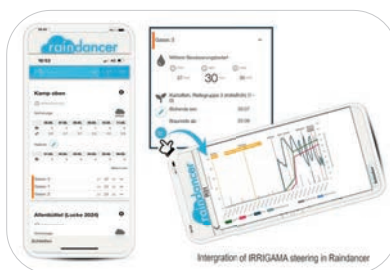
The irrigation recommendation generated by the irrigation control software IRRIGAMA steering has been integrated into the popular Raindancer app. Irrigama was also adapted to the conditions of organic farming and extended to include the control of drip hose irrigation systems.

HOW IT CONTRIBUTED TO WATER RESILIENCE

The solution provides users with all the necessary information in a single application, enabling the efficient use of irrigation infrastructure and water resources.

UPTAKE / PRACTICAL APPLICATION

Farmers and advisors benefit from this solution as it reduces the effort involved in irrigation management. It is available for farmers since the 2025 irrigation season. The prices are tiered according to the size of the fields ranging from €7.95/ha (>300 ha) to €11.60/ha (<50 ha).



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Funded by
the European Union



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Climate change increases rainfall and temperature variability, making irrigation and N fertilisation decisions more complex. Water availability strongly influences nitrogen uptake and crop development in wheat. Yet decisions are often based on predefined schedules rather than real seasonal conditions. This can lead to inefficient water and fertiliser use and higher environmental risks. Farmers therefore need tools to adapt irrigation and nitrogen management to the climate of the year and crop needs during the growing season.

SOLUTION DEVELOPED

Epilote was a digital decision support system combining agronomic models, weather data, satellite observations and field information. The tool estimates crop water and nitrogen status and supports dynamic irrigation and fertilisation decisions during the growing season. The engine (CHN crop model) can be included in a farm management tool.

HOW IT CONTRIBUTED TO WATER RESILIENCE

Epilote helps farmers better anticipate crop water needs during the growing season. Irrigation and nitrogen fertilisation can be synchronised with crop demand and climatic conditions. This improves water use efficiency and reduces the risk of unnecessary irrigation and nutrient losses.

UPTAKE / PRACTICAL APPLICATION

ARVALIS makes its agronomic models available to Decision Support Tools publishers on a non-exclusive basis. For example the "nitrogen management" part (CHN Ferti-adapt) is already included since 2025 into the "Farmstar Neo+" service provided by Airbus in France. ARVALIS's 'Water Balance' models also provide the key data needed to manage irrigation at plot level across a wide range of crops: they are included in the CoRhize and Weenat tools.

PROJECT TYPE: EIP-AGRI
Operational Group + H2020
SmartAgriHubs project

DATES: 2018-2022

BUDGET: 329 000.00€ + 162
094,00 €

CONTACT: Stéphane
Jézequel - Scientific Director
at Arvalis - s.jezequel@arvalis.fr



Monitoring soil N & water deficit



Based on IoT, satellite data, modeling & advices



Multi-actor project

This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Challenge

- Water scarcity and climate change pressure
- Need to reduce energy usage and emissions
- Efficient irrigation and nutrient management

Innovation – The ZOBAM+ System

ZOBAM+ is an **underground drip irrigation system** that combines:

- Solar-powered pumping
- Sensor-controlled irrigation
- Subsurface water distribution
- Integration with soil and crop monitoring

This enables **precise irrigation and smart resource management**.

HOW IT CONTRIBUTED TO WATER RESILIENCE

- Significant water savings through subsurface irrigation
- Reduced evaporation losses compared to surface irrigation
- Stable soil moisture levels during drought periods
- Sensor-based irrigation for precise water management
- Improved crop performance through reduced water stress

UPTAKE / PRACTICAL APPLICATION

- Demonstrated with 10 crops and 5 soil types
- Ready for operational deployment on farms
- Integrates well with smart farming technologies
- Supports precision irrigation and fertigation
- Scalable for different farm sizes and regions



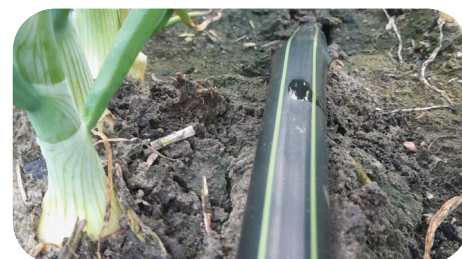
PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 2019 – 2022

BUDGET: ~ €800,000

CONTACT: Tijms
Mechanization BV
Johan Tijms

Project coordinator
ZOBAM+ Drenthe /
Groningen - www.zobam.nl



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Agricultural irrigation accounts for 70% of global water use and over 40% in many OECD countries. **Sustainable water management** is a key pillar for mitigating anthropogenic impacts (SDG 13) in the agrifood sector.

SOLUTION DEVELOPED

WAPPFRUIT project defined the water requirements of **apple** and **kiwifruit** and developed an autonomous irrigation system based on real-time soil matric potential data

HOW IT CONTRIBUTED TO WATER RESILIENCE

The Operational Group reduced irrigation volumes below the typical **2,000–3,000 m³/ha/year** in high-yield orchards

UPTAKE / PRACTICAL APPLICATION

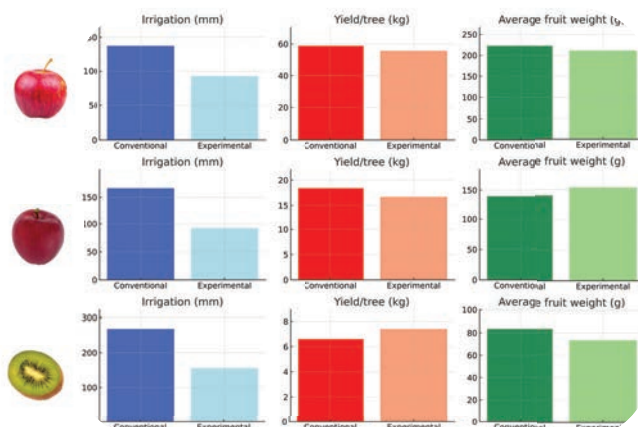
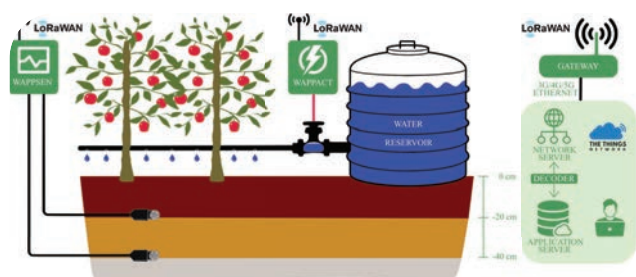
Farmers observed up to nearly **50%** water savings in their experimental plots while maintaining the same yield and organoleptic quality

PROJECT TYPE: EIP-AGRI
Operational Group - EAFRD

DATES: 01/11/2020-
31/10/2023

BUDGET: 580,321.91 €

CONTACT:
danilo.demarchi@polito.it



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Rice irrigation in Central Macedonia can exceed 12,000 m³/ha per season.

Soil salinity needs frequent monitoring throughout the irrigation period.

Conventional monitoring depends on repeated field visits, increasing labour, fuel use and machinery costs.

SOLUTION DEVELOPED

SISRICE: a smart sensor-based irrigation management system

Solar-powered autonomous sensors monitor **soil salinity** (electrical conductivity) and **water level** in real time.

Data are transmitted wirelessly to the **RICEXM platform** for remote access and decision support.

This replaces subjective visual inspection with objective, field-based measurements.

HOW IT CONTRIBUTED TO WATER RESILIENCE

The system reduced irrigation water use by **at least 14%** compared with conventional practice.

It helped maintain salinity below critical levels and prevented crop stress.

Its performance was demonstrated through pilot applications in Central Macedonia during **2023-2024**.

UPTAKE / PRACTICAL APPLICATION

Farmers can manage irrigation more precisely without needing constant presence in the field.

Pilot applications achieved **at least 14% lower irrigation water use**.

Remote monitoring reduced field visits, labour demand and transport-related **CO₂ emissions by 10–15%**.



PROJECT TYPE: EIP-AGRI Operational Group

DATES: 5.12.2022 – 31.08.2025

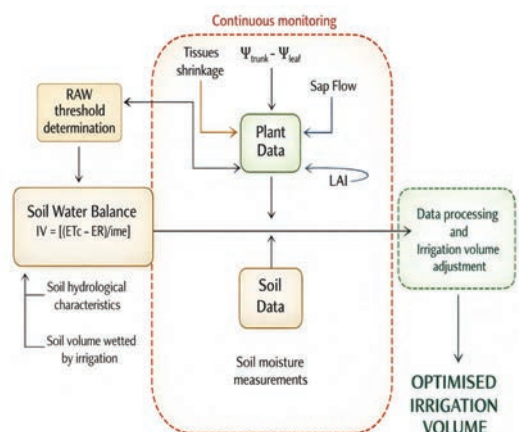
BUDGET: €150.000

CONTACT: dikatsa@elgo.gr & info@ergoplanning.gr



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The main challenges in water management were as follows:

- the water supply should be on request in the field due to water shortages.
- determining crop water requirements;
- calculating irrigation volumes using the water balance;
- adjusting irrigation volumes using plant and soil-based sensors;
- identifying appropriate irrigation strategies to meet crop water requirements while taking into account the hydrological characteristics and volumes of soil affected by irrigation;
- improved water use efficiency and reduced waterlogging have beneficial effects on soil and plant health, as well as on the resilience of production systems, while reducing environmental impact.

SOLUTION DEVELOPED

The developed solution involved integrating the water balance with IoT sensors and soil characteristics to enable the adjustment of irrigation volumes and the remote management of irrigation.

HOW IT CONTRIBUTED TO WATER RESILIENCE

The developed solution has significantly contributed to water resilience, enabling savings of up to 30%.

UPTAKE / PRACTICAL APPLICATION

Mature innovations in irrigation were disseminated through the establishment of a task force (TF), which brought together all stakeholders in the agri-food supply chain, including farmers, producer organisations (POs), researchers and innovation brokers. This led to the creation of the ECO₂FRUIT living lab. This has enabled numerous farms to improve the management of the irrigation systems used for growing fruit. By adopting these systems, farmers have achieved higher yields and greater economic returns while reducing their environmental impact.

PROJECT TYPE: EIP-AGRI
Operational Group

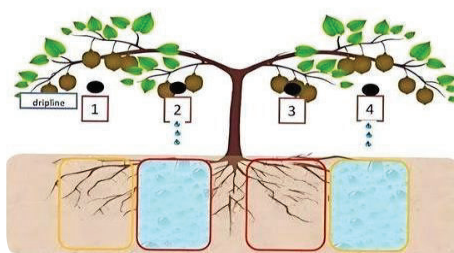
DATES: 13/05/2018 -
31/10/2022

BUDGET: 260.000 €

CONTACT:

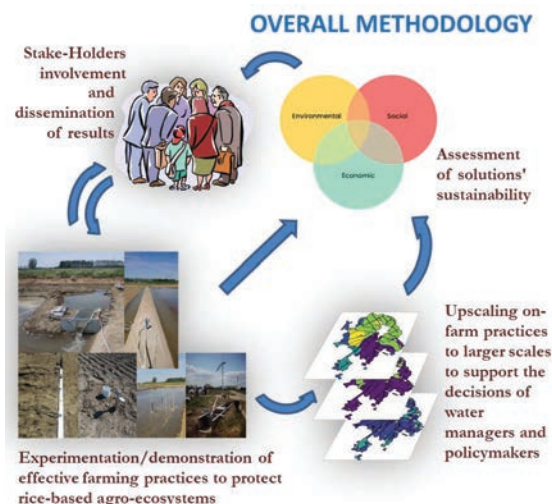
Prof. Bartolomeo Dichio
(bartolomeo.dichio@unibas.it)

PhD Student Rocco Sarli
(rocco.sarli@unibas.it)



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Water scarcity in rice areas during the irrigation season, competition of irrigation of the rice sector with other water uses, impact of rice cropping on groundwater and surface water quality, soil salinisation.

SOLUTIONS DEVELOPED

Innovative and economically viable on-farm practices, environmentally friendly. Novel devices based on ICT technology to support irrigation management in paddy fields. Modelling frameworks tailored to rice-growing regions to scale up on-farm practices at the irrigation district level to support irrigation managers and policymakers in making decisions on the sustainable management of water resources in agriculture.

PROJECT TYPE: PRIMA-
Section 2-2022

DATES: October 2023-
September 2026

BUDGET: € 2 607 000 for the
international project.
€ 5 00 000 for the Italian
research group.

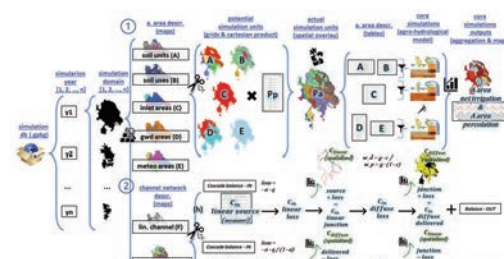
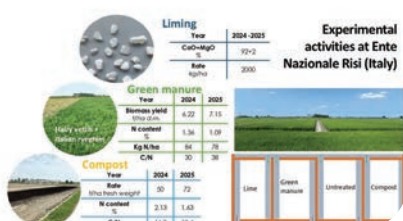
CONTACT:
gerard.arbat@udg.edu for the
international project.
arianna.facchi@unimi.it for
the Italian research group.

HOW THEY CONTRIBUTED TO WATER RESILIENCE

The solutions developed help to reduce the impact of rice cultivation on the quantity of irrigation water used and on the quality of surface water and groundwater.

UPTAKE / PRACTICAL APPLICATION

The beneficiaries include rice farmers, companies that process and market rice, irrigation managers in rice-growing areas, other water users (less water used for rice means more water for other sectors), and policymakers at the regional and national levels.



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The project, started with financial support of the Lombardy Region, addresses the challenge of sustainable use of water for irrigation through improving knowledge on actual water uses and crop water requirements, facilitating access to data and information and providing agro-hydrological modelling tools.

SOLUTION DEVELOPED

The project has led to the creation of an integrated monitoring network comprising 430 hydrometric monitoring stations and 32 agrometeorological stations, a data management centre based on open-source spatial data infrastructure (CeDATeR), and a mathematical model for assessing crop water requirements and actual water consumption at both regional and more detailed spatial scales (IdrAgra model). In addition, web-based tools have been developed to disseminate knowledge, and an annual report on the irrigation season is published.



PROJECT TYPE: Public regional funded project

DATES: 2017 - 2025

BUDGET: 130.000 €/year

CONTACT:

cedater@anbilombardia.it

claudio.gandolfi@unimi.it

HOW IT CONTRIBUTED TO WATER RESILIENCE

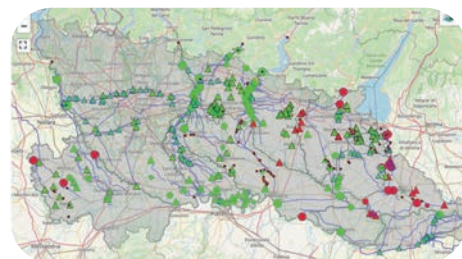
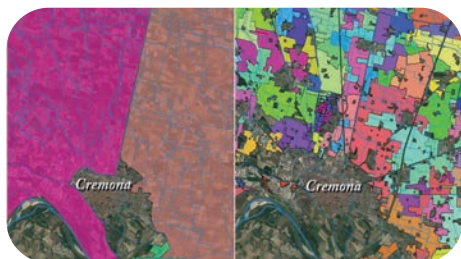
Through its outputs, the project has contributed to promote the responsible use of water for irrigation and to support initiatives aimed at improving the efficiency and resilience of irrigation systems. These results were achieved thanks to the proactive collaboration between Lombardy Region, the Irrigation Consortia and the University of Milan, which also gave impetus to a series of spin-off projects with more specific objectives, based on the project's outputs and promoted by national and regional bodies, individual irrigation consortia, farmers and their associations.

UPTAKE / PRACTICAL APPLICATION

The Regional agencies and the Irrigation Consortia have largely benefited of the project's outcomes. They have relied on the CeDATeR database and on the IdrAgra model to support the planning and management of irrigation systems, to improve the regional and district water balances and to manage drought periods.

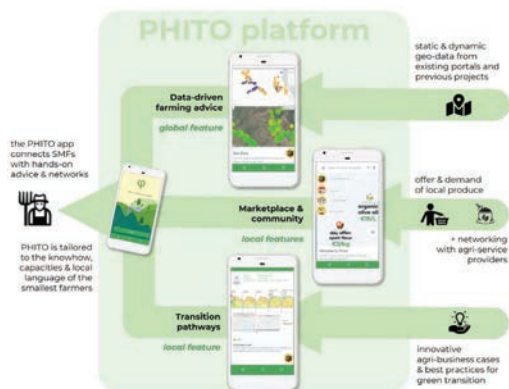
Farmers have benefited of the project's outcomes in several forms, including the use a web-based platform to assess the expected increase of irrigation efficiency that could be achieved through specific measures needed to submit funding requests within the EU-RDPs.

Moreover, the project's products have been used by Po River District Basin Authority and research institutions in a variety of projects, including EU funded ones, such as the study on the optimal location of multifunctional water storage basins, the assessment of ecosystem services provided by irrigation, the improvement and expansion of more efficient irrigation systems where it's needed (e.g. in the Garda-Chiese and in the Franciacorta districts).



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

PHITO addresses key water management challenges such as drought, water scarcity, flooding, and soil salinisation affecting small and medium farmers. It focuses on improving farmers' capacity to monitor and respond to water-related risks using accessible satellite-based environmental information.

SOLUTION DEVELOPED

PHITO is co-developing, together with European farmers and stakeholders, a low-barrier mobile app that translates open satellite geo-data into simple, actionable information for farmers. It enables users to visualise field conditions and monitor water-related risks to support more informed farm management decisions.

HOW IT CONTRIBUTED TO WATER RESILIENCE

It contributes to water resilience by improving farmers' access to timely environmental information, enabling better monitoring, early risk detection, and more adaptive water and soil management decisions, while also providing a library of best practices derived from the knowledge of multiple international projects.

UPTAKE / PRACTICAL APPLICATION

Small and medium farmers, advisors, and local agricultural stakeholders can benefit from this innovation by accessing simple, data-driven insights on water and soil conditions through a mobile app, supporting more informed and resilient farm management decisions.



PROJECT TYPE:
HORIZON.2.6

DATES: 1 September 2023 - 31 August 2028

BUDGET: € 5 025 142,50

CONTACT:

Prof. Luuk Fleskens

luuk.fleskens@wur.nl

Prof. Paolo Tarolli

paolo.tarolli@unipd.it



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

- Efficient irrigation use
- Updating irrigation governance
- Water scarcity and Climate resilience

SOLUTION DEVELOPED

- Transnational strategy for digitalising irrigation
- Catalogue of digital tools
- Capacity-building programs & events
- QGIS Digital twins for smart irrigation

HOW IT CONTRIBUTED TO WATER RESILIENCE

- Strategies provide governance tools to face water scarcity
- Helps build skills among users in Spain, Portugal, and France through training and information on available digital tools
- Pilot testing & sharing of open-source digital twins contribute to improving irrigation efficiency

UPTAKE / PRACTICAL APPLICATION

Who and how can benefit from this innovation?

- Public bodies through governance
- Technicians through training
- Farmers through sharing
- Digital & Agricultural companies through promotion



PROJECT TYPE: Interreg
SUDOE

DATES: 2024-2026

BUDGET: 1.581.377,91 €

CONTACT:
courrier@euroregio-epm.eu



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

CLUSTER 'NATURE-BASED SOLUTIONS'





MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

- **Irish Use Case:** Land application of dairy soiled water (DSW) risks polluting both ground and surface waters, particularly when applied under unfavourable weather conditions or on unsuitable soil types.
- **Italian Use Case:** Irrigation using high salinity groundwater can lead to a rapid decline in water availability, reduced soil fertility, and degradation of coastal wetland ecosystems.
- **Greek Use Case:** Focus on minimising the environmental impact of agricultural practices, particularly through the optimised use of fertilisers and pesticides.

SOLUTIONS DEVELOPED

- **Innovative soil and water sensors** to support proactive management of soil and water quality: real-time monitoring of essential nutrients, E. coli, and contaminants of emerging concern.
- **Nature-based** (constructed wetland) **and technology-based** (advanced Oxidation Processes) **solutions** for water remediation to effectively remove pollutants and improve water quality
- **Integration of satellite imaging** for large-scale monitoring of agricultural challenges, including pest infestations and soil salinisation.
- **Data analysis and model development:** Dedicated Decision Support System (DSS) providing tailored recommendations for various agriwater stakeholders, enabling informed decisions that optimise water use, improve crop health, and promote sustainable agricultural practices.

HOW IT CONTRIBUTES TO WATER RESILIENCE

- **On-farm treatment of Dairy Soil Water** enables safe and efficient circular reuse of water, particularly for farmyard cleaning. This approach not only conserves water resources but also promotes sustainable farming practices.
- **Irrigation with reclaimed water** significantly reduces the reliance on groundwater abstraction, helping to preserve vital aquifers. Additionally, it mitigates salinisation effects in soil, which can enhance crop health and maintain long-term soil productivity.
- **A Decision Support System** helps optimise the application of fertilisers and pesticides by providing data-driven recommendations. This precision reduces the risk of over-application, thereby minimising downstream pollution of both ground and surface water, and supporting healthier ecosystems.

UPTAKE / PRACTICAL APPLICATION

- **Farmers:** Enabled to reduce water consumption through precision irrigation techniques, while also minimising the use of fertilisers and pesticides leading to cost savings and improved environmental sustainability.
- **Water utility:** Empowered to make rapid and accurate decisions regarding possible microbial contamination in water supplies, ensuring timely interventions to protect public health and maintain water safety standards.
- **Water manager and regulator:** Provided with a comprehensive, district-wide overview of water quality, allowing for data-driven decisions and the effective implementation of mitigation strategies to address water quality issues at scale.

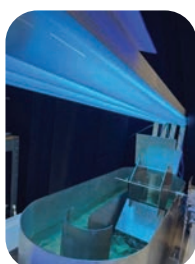
PROJECT TYPE: HORIZON-EUROPE

Grant agreement ID:
101135422

DATES: 01/06/2024 –
30/11/2027

BUDGET: € 5 996 598

CONTACT: Dr. Pierre Lovera



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Fields suffering from drought or flooding from heavy rain could become challenges of the past. Planning short-term water-retention measures will be replaced by strategic system understanding of the landscape. Conflicting policies on floods versus droughts, for upstream versus downstream can be overcome as farmers and policymakers work hand in hand.

SOLUTION DEVELOPED

Planning agroecological measures that increase water retention capacity of the soil, combined with catchment-level sponge strategies contribute to resilient landscapes and creates spongy fields. We propose a process where farmers, regional authorities and scientists collaborate and acknowledge each other's expertise.

HOW IT CONTRIBUTES TO WATER RESILIENCE

Sponge measures that follow a catchment strategy work better together to absorb, store, and release water efficiently, ensuring agricultural productivity even during extreme weather conditions. This increases the resilience to floods and droughts, preventing mudslides, erosions, nutrient depletion, and other risks.

UPTAKE / PRACTICAL APPLICATION

Our strategies empower farmers by enhancing their fields' resilience against droughts and floods. In Greece, farmers have successfully adopted strip tillage, which is attracting interest from other regions. In the Lèze Valley, the use of cover crops and hedges has helped prevent mudslides, protecting the land. In a city of the Netherlands, the creation of a green bike path has improved both water management and the environment. Furthermore, 8 regions have incorporated sponge measures into their plans to enhance climate resilience. Politicians receive insights into effective water-retention strategies, aiding policy-making. Stakeholders enjoy improved collaboration with clear expectations and shared responsibilities. Society benefits from resilient agriculture and a stable food supply, ensuring food security despite climate challenges.



PROJECT TYPE: Horizon Europe

DATES:

01.09.2024 – 31.08.2028

BUDGET: 14.998.925 €

CONTACT: Maïke Gebker

gebker@umwelt.uni-hannover.de



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The project area is the Natura 2000 Site “Grave e Zone Umide della Brenta”, located in the Veneto Region, in North-Eastern Italy. The site plays a key role in the drinking water supply, being one of the most important sources at regional level, with a potential withdrawal of more than 2500 liters per seconds. **High water abstraction from the aquifer**, intensive agriculture and livestock, and lack of governance represent a risk for water quality and biodiversity conservation.

SOLUTION DEVELOPED

The Operational Group Brenta 2030 project established an innovative **Payment for Ecosystem Services** for protecting biodiversity and water conservation within the Natura 2000 site and the drinking water safeguard areas. The innovative financing scheme applies Article 9 of the EU Water Framework Directive (WFD, 2000/60/EC) and the “polluters/users pay” principle, allowing the internalisation of the **Environmental and Resource Costs** within the water tariff system. Farmers can receive payments for improving their water practices and implement Nature-based solutions (**NBS**).

HOW IT CONTRIBUTED TO WATER RESILIENCE

The **GO Brenta 2030** has established **Payments for Ecosystem Services** to provide farmers with stable “water-farming” income, incentivising **NBS** to restore the water cycle, through for instance, Forest Infiltration Areas, wetlands and water ponds, and farmers advisory services in the area.

UPTAKE / PRACTICAL APPLICATION

The Payments for Ecosystem Services scheme, through the water bill, raises significant resources for the protection of water and natural resources and to support farmers with:

- 1) Reducing impacts on drinking water protection areas through farm advisory services (win-win solutions, through reduction of fertilisers, etc.)
- 2) Implement **NBS** to restore the water cycle and increase resilience (water infiltration areas, water storages, etc.)
- 3) Improving the management and extending existing grasslands to reduce nutrients run-offs and decrease use of agro-chemicals



PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 2019-2022

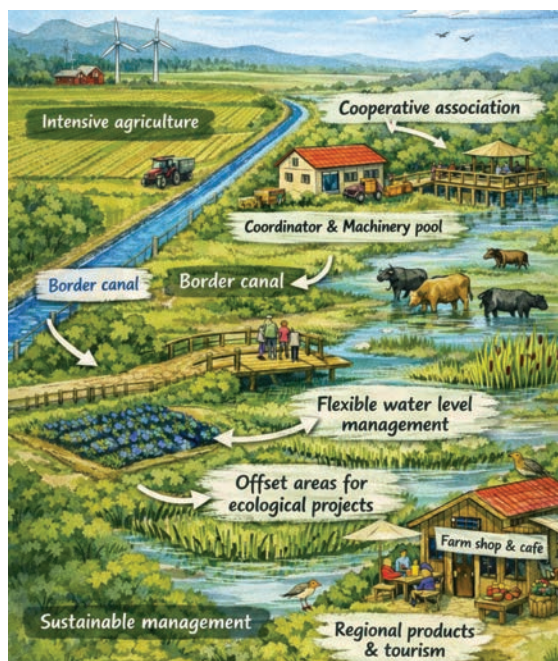
BUDGET: 394,947.28€

CONTACT:
alessandro.leonardi@etifor.com



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

- Balancing agricultural use with higher water levels for peatland rewetting
- Coordinating water management across zones and stakeholders

SOLUTION DEVELOPED

- Zonation with perimeter canal separating intensive and wet areas
- Cooperative structure for coordinated management and implementation
- Integrated water control with adjustable levels and shared infrastructure

HOW IT CONTRIBUTED TO WATER RESILIENCE

- Stabilised water levels through zonation and controlled rewetting
- Improved coordination via cooperative management
- Increased resilience to droughts and heavy rainfall

UPTAKE / PRACTICAL APPLICATION

- Farmers: viable production and new income in wet areas
- Water authorities: improved control and climate adaptation
- Society: climate protection, biodiversity benefits

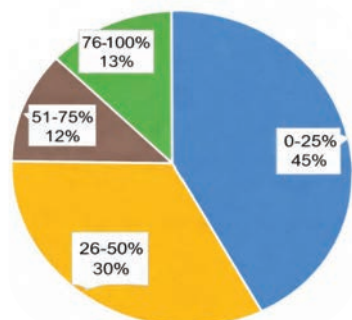


PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 08/2024 – 07/2027

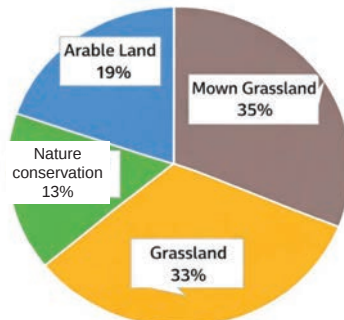
BUDGET: 499.974,33 €

CONTACT:
info@oldenburger-graben.info



Deprivation Share of Business

- ¼ of businesses with more than 50% affected area



Use of lowlands area

- Over 50% area intensively managed

This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

Implementation of River Basin Management Plans of Latvia towards good surface water status

Latvijas upju baseinu apsaimniekošanas plānu ieviešana laba virszemes ūdens stāvokļa sasniegšanai

goodwater.lv



Construction of a woodchip bioreactor



PROJECT TYPE: LIFE Integrated Project

DATES: 01.01.2020. – 31.12.2027.

BUDGET: 14 463 050 €

CONTACT:

Zanda Melnalksne
zanda@zemniekusaeima.lv

MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The main challenges addressed by the LIFE GoodWater IP project are reduction of nutrient inputs from agricultural areas and urban wastewater treatment plants to surface water bodies, mitigation of effects caused by hydrological and morphological alterations. The project will improve the status of water bodies at risk in Latvia through targeted water quality monitoring and implementation of nature-based solutions as described in the Daugava, Gauja, Lielupe and Venta River Basin Management Plans.

SOLUTION DEVELOPED

Within the framework of the project, following green infrastructure elements have been landed, designed, planned, and constructed in agricultural areas:

- constructed wetlands;
- sedimentation ponds;
- woodchip bioreactors;
- saturated buffers;
- controlled drainage.



Constructed wetland

In 2026–2027, testing of element effectiveness and management practices is taking place.

HOW IT CONTRIBUTED TO WATER RESILIENCE

Implementing nature-based solutions such as constructed wetlands, sedimentation ponds, woodchip bioreactors, saturated buffers and controlled drainage in agricultural areas not only reduces the inputs and transport of nutrients to downstream water bodies, but also helps to mitigate flood risks and increase resilience to droughts as water is retained in the landscape for a longer period of time. The lessons learned within the project will help to promote wider implementation of nature-based solutions in Latvia.

UPTAKE / PRACTICAL APPLICATION

The tested innovative Green Infrastructure elements will be replicated by other farmers.

Support instruments for non-productive environmental investments are being developed using the experience and knowledge gained from the project's pilot studies. A support measure for the creation of constructed wetlands has been established within the framework of the Rural Development Programme (RDP). Society and nature benefits as the water quality, rural landscape and biodiversity improve.

On the ground demonstration sites work as «the test beds», as well as, information/education and awareness raising channels.



Woodchip bioreactor with two control wells



Sedimentation pond in a drainage ditch



Sedimentation pond and a well with a one-way flow mechanism

This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Funded by
the European Union



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

WATERAGRI addressed key agricultural water challenges, including droughts and floods driven by climate variability, inefficient water use, and nutrient pollution. It also tackled fragmented knowledge, limited farmer decision-support tools, and economic barriers to innovations.

SOLUTION DEVELOPED

The project developed an integrated framework combining modelling, remote sensing, and decision-support tools for real-time farm management. It also introduced nature-based and technological solutions, including wetlands, precision irrigation, biochar, membranes, and drainage systems, enabling both water retention and nutrient recovery.

HOW IT CONTRIBUTED TO WATER RESILIENCE

WATERAGRI improved resilience by increasing water-use efficiency, enhancing water retention during droughts and reducing flooding impacts. Its solutions also improved water quality by limiting and treating nutrient runoff. Finally, real-time modelling and decision-support tools strengthened adaptive capacity, enabling farmers to respond proactively to climate challenges and maintain stable production.

UPTAKE / PRACTICAL APPLICATION

Farmers, water authorities, and agri-tech companies can benefit from WATERAGRI solutions. Farmers could reduce costs and improve yields, while authorities enhance water management at catchment scale. Real-scale uptake of WATERAGRI solutions is supported through different project demonstration sites, ensuring that these solutions are practical, scalable and adaptable across different agricultural and environmental contexts.



PROJECT TYPE: Horizon 2020

DATES: 1 May 2020 - 30 April 2024

BUDGET: 6.999.986,25 €

CONTACT: Attilio Toscano
attilio.toscano@unibo.it



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

CLUSTER 'SOIL MANAGEMENT'





MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The project aims to develop and improve plant growing technologies for restoring soil productivity: mobilise and store nutrients, organic matter, stabilise physical properties, optimise moisture, and reduce fluctuations in plant productivity due to climate change.

SOLUTION DEVELOPED

A soil management system has been developed and implemented, based on the use of winter-killed annual plants (as cover crops) and reduced tillage, with the aim of improving water retention and enhancing the resilience of cropping systems to climate change.

HOW IT CONTRIBUTED TO WATER RESILIENCE

- Reduces soil evaporation
- Improves water infiltration and retention, decreases runoff
- Increases soil organic matter
- Enhances crop drought resilience

UPTAKE / PRACTICAL APPLICATION

- Farmers – better water retention and yield stability
- Advisors – practical decision-support tool
- Policy – supports sustainability goals
- Easy to integrate into crop rotations



PROJECT TYPE: EIP-AGRI Operational Group

DATES: 2022-2024

BUDGET: 188 611 €

CONTACT:
lina.sarunaite@lammc.lt



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Reduce nutrient losses to water from dairy farming in peat areas by limiting stocking densities, external fertiliser and feed inputs, by creating unfertilised biodiverse strips along ditches and by increasing groundwater tables to reduce peat decomposition. The main challenge is to create a viable farm economic perspective while minimising nutrient losses and maximising peat preservation and biodiversity.

SOLUTION DEVELOPED

Extensive dairy farm with:

- Permanent grassland with 2 m wide unfertilised biodiverse strips along ditches
- Active Water Infiltration Systems (AWIS) to maintain groundwater tables around 30 cm below soil surface
- No use of chemical fertilisers or biocides
- Spring calving dual purpose "Blaarkop" cows grazing day and night to maximise soil load bearing capacity
- Minimal concentrate use of ≈ 20 kg 100 kg milk⁻¹
- A stocking density of 1.36 cows ha⁻¹ resulting in a fertilisation level of ≈ 150 kg N ha⁻¹
- Testing of trench infiltration as cheaper alternative to AWIS

HOW IT CONTRIBUTED TO WATER RESILIENCE

- CO₂-reduction from peat decomposition of $\approx 50\%$ through increased groundwater tables by AWIS
- Trench infiltration led to more variable groundwater tables than AWIS
- Reduction of farm N surplus ($\approx 30\%$) and realising negative soil P balance

UPTAKE / PRACTICAL APPLICATION

This farming system reduced losses to water and air, and peat decomposition. It also led to an improved gross margin per kg milk. Options to increase turnover including organic certification could further improve the gross margin. Access to land at relatively low costs appeared to remain the main challenge for a long-term viable economic perspective.



PROJECT TYPE: CAP-pilot

DATES: Jan 2022 – Dec 2024

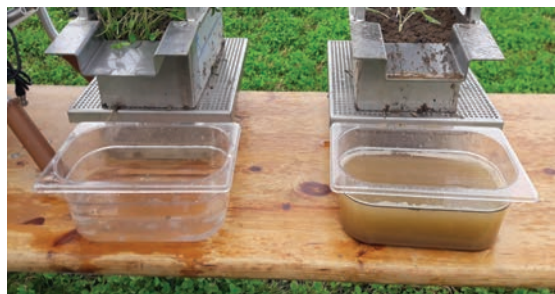
BUDGET: ≈ 700 k€

CONTACT: Jeroen Pijlman:
j.pijlman@louisbolck.nl



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

How can permanent living mulch be managed to optimise soil water retention and infiltration while avoiding competition for water under varying soil and climate conditions?

SOLUTION DEVELOPED

A permanent living mulch can improve soil infiltration capacity. Despite the significantly high biomass in the plots with clover, soil moisture levels did not show any significant decrease.

HOW IT CONTRIBUTED TO WATER RESILIENCE

Fundamentally, this cropping system provides a societal benefit. It reduces erosion and contributes to flood protection.

UPTAKE / PRACTICAL APPLICATION

In view of the growing world population and the predicted global decline in grain yields alternative cropping systems must be developed in the face of increasing scarcity of water resources and the use of agricultural inputs. In meeting the challenge of producing more food under conditions of water scarcity, climate-resilient farming systems, new crop varieties and the targeted use of fertilisers and plant protection products are helpful. It remains to be seen how this cropping system will perform in future under different weather conditions.



PROJECT TYPE: EIP-AGRI
Operational Group

2014DE06RDRP017 Germany -
Rural Development Programme
(Regional) – Rhineland-
Palatinate

DATES: 16.09.2019 -
31.08.2023

BUDGET: 300.000 €

CONTACT: Agrarbüro
Mittermeier, Christine
Mittermeier

Gobio GmbH - Rolf Allner



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

In potato growing the conventional type of management contributes more to soil erosion than the cultivation with other crops. While various techniques for reducing soil erosion are already known in cereal and maize cultivation, effective methods are still lacking in ridge cultivation.

SOLUTION DEVELOPED

By constructing cross dams between the potato ridges, small basins are created which reduce surface runoff and thus decrease soil erosion. The additional sowing of oats increases the cross-dam stability and thus the effectiveness of this measure.

HOW IT CONTRIBUTED TO WATER RESILIENCE

The main focus is on reducing erosion and thus reducing surface runoff from the field. Preserving the soil material in the field helps stabilise water storage capacity, which is crucial during periods of drought.

UPTAKE / PRACTICAL APPLICATION

The construction of cross dams clearly reduces soil erosion and surface runoff from the field, thus protecting nearby settlements and water bodies from pollution. Based on the clear results, the construction of cross dams is now being subsidized under the Austrian Agri-Environmental Program (ÖPUL).



PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 12/2018 – 05/2022

BUDGET: 168 334.00 €

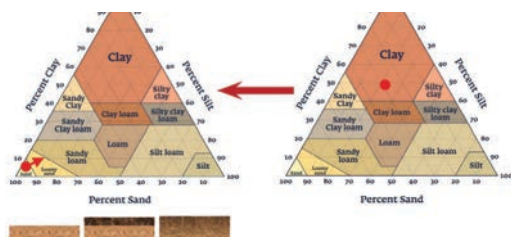
CONTACT: DI Christine
Weinberger

christine.weinberger@wpa.at



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATERMANAGEMENT ADDRESSED

Low water retention in sandy soils

- Limited water available during droughts
- High dependence on irrigation
- Increasing drought stress and yield losses
- Nutrient leaching and run-off

SOLUTION DEVELOPED

- Enriching sandy soils with clay
- Increase lutum to 8%
- Clay that needs to be disposed of after civil works, usefully applied for agriculture

HOW IT CONTRIBUTED TO WATER RESILIENCE

- Improves soil water retention
- Reduces need for irrigation
- Limits leaching, improving water quality
- Better soil structure and fertility builds long-term resilience

UPTAKE / PRACTICAL APPLICATION

Uptake 2026: >100 farmers, >500 hectares

- Farmers: higher and more stable yields
- Water managers: better water availability and quality at catchment level
- Public authorities: cost-effective climate adaptation and mitigation strategy



PROJECT TYPE: LIFE

DATES: 2021 - 2027

BUDGET: 1.74 Million €

CONTACT:

info@lifeco2sand.eu



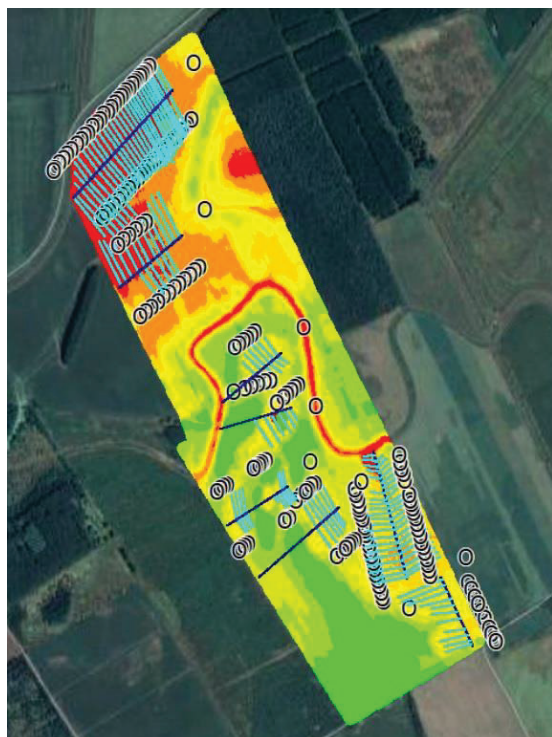
This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

Improvement of Heavy Meadow Soils

Kötött réti talajok fizikai tulajdonságainak és vízgazdálkodásának javítása vízrendezéssel és talajjavító anyagok használatával

<https://discoverycenter.eu/research>



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Waterlogging (excess water) is a serious threat to soil properties, crop yields and farm profitability in Hungary. Climate change causes simultaneous water surplus and deficit, creating major challenges for arable crop production. Vertisols in the Carpathian Basin have very low hydraulic conductivity, making natural drainage slow and inadequate. Precision agriculture and data-driven decision-making are essential to implement best soil management practices effectively.

SOLUTION DEVELOPED

Combined VERIS technology high-resolution sensors and Sentinel-2 multispectral satellite imagery to characterise waterlogged fields at farm scale. Applied unsupervised machine learning (K-means clustering) on water and vegetation indices to detect waterlogging-prone areas. Used Bayesian statistical models and A/B testing to evaluate whether installing drainage systems would be economically beneficial for farmers.

HOW IT CONTRIBUTED TO WATER RESILIENCE

By combining satellite imagery with on-farm sensor data, farmers can pinpoint which fields are prone to waterlogging without expensive surveys. The research shows that drainage installation can increase annual farm income by 1.7 times — giving farmers a clear, data-backed case for investment. Better water management also means more reliable harvests, improved fertiliser uptake, and less machinery damage over time.

UPTAKE / PRACTICAL APPLICATION

Farmers and agricultural advisors can use this data-driven framework to identify waterlogging risks and make evidence-based drainage investment decisions. Policymakers and water authorities can apply the approach for regional water management planning and climate adaptation strategies. The methodology supports food security and climate resilience by optimising water management decisions at farm scale across the Carpathian Basin

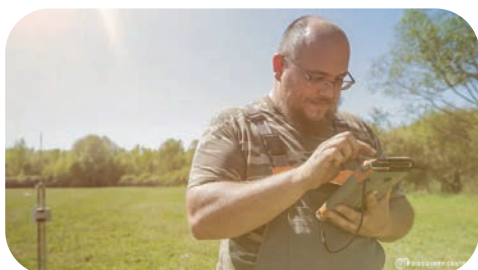


PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 2018-2024

BUDGET: 1 866 491 €

CONTACT:
vince.lang@drdc.eu



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Funded by
the European Union



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The project addressed major water management challenges related to rainfall-driven soil erosion, excessive surface runoff, and hydrogeological instability in steep-slope vineyards. It aimed to improve soil and water management practices to reduce downstream impacts, strengthen climate resilience, and support the long-term sustainability of vulnerable hilly and mountain agricultural landscapes, while also testing innovative light electric tractors for low-impact cultivation.



PROJECT TYPE: EIP-AGRI Operational Group

DATES: January 2019 - November 2022

BUDGET: € 447 700

CONTACT: Prof. Paolo Tarolli
paolo.tarolli@unipd.it

SOLUTION DEVELOPED

The project developed an integrated solution combining UAV-based topographic surveys, rainfall erosivity monitoring, low-impact mechanisation, terrace restoration techniques, and conservation agronomic practices for steep-slope vineyards. This approach helped farmers to identify erosion-prone areas, improve soil and water management, reduce hydrogeological risk, and preserve the environmental and landscape value of hilly and mountain vineyards.

HOW IT CONTRIBUTED TO WATER RESILIENCE

The project contributed to water resilience by reducing surface runoff and soil erosion, improving water infiltration, and supporting more sustainable soil management in steep-slope vineyards. By combining monitoring tools, targeted restoration measures, and conservation practices, it helped vineyards better withstand intense rainfall events and reduced negative downstream impacts on adjacent areas.

UPTAKE / PRACTICAL APPLICATION

The project's solutions were put into practice through on-farm testing, demonstrations, training activities, and the direct involvement of farmers and technicians, supporting their uptake in steep-slope vineyard management.



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

CLUSTER

‘WATER QUALITY / WATER POLLUTION’





MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Conventional wheat farming often involves fertilisation levels that can lead to nitrate leaching, which threatens the quality of the water sources used for drinking water.

SOLUTION DEVELOPED

The core of the innovation is the cultivation of “water protection wheat”: common, quality wheat varieties that are fertilised less than typical baking wheat.

The initiative involves farmers, millers, traditional bakers and water suppliers and develops regional value chains and a communication strategy targeted towards the consumers.

HOW IT CONTRIBUTED TO WATER RESILIENCE

Monitoring data from 2020–2022 shows that soil residual nitrate levels after harvesting water protection wheat were significantly lower (averaging 56 kg N/ha) compared to conventional wheat (65 kg N/ha). The nitrate content in seepage water under water protection wheat was found to be 12 to 20 mg/l lower than under conventionally fertilised wheat.

UPTAKE / PRACTICAL APPLICATION

Farmers, millers, and bakers receive official recognition for high-quality regional production. Water suppliers benefit from reduced nitrate leaching into groundwater. Consumers support resource protection through their purchases. The participating project regions strengthen regional economic cycles.



PROJECT TYPE:

This initiative is part of a broader program called "AKTION GRUNDWASSERSCHUTZ" by the governments of various Bavarian regions.

Our project funding is received through three administrative districts of Bavaria.

DATES: 2014-2030

BUDGET: 36.120 € p.a.

CONTACT:

Dr. Jens Habenstein –
Regierung von
Unterfranken
kontakt@wasserschutzbrot.de



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

- Increasing water scarcity in Mediterranean agricultural systems due to reduced precipitation and climate variability.
- Growing demand for water in agriculture, which currently represents the main consumer of water resources.
- Need for more efficient irrigation management in organic farming systems.
- Limited digital tools integrating climate data, soil information, irrigation systems and crop needs.
- Lack of monitoring systems linking water management with biodiversity conservation in agroecosystems.

SOLUTION DEVELOPED

The OG TIC4BIO project developed a **digital decision-support platform** integrating field sensors, climatic information and farm management data to optimise irrigation and monitor biodiversity in organic olive systems.

The tool integrates:

- Soil moisture sensors and irrigation system monitoring
- Climatic variables (rainfall, evapotranspiration, etc.)
- Crop and soil parameters
- User-introduced farm management data
- The system calculates:
 - Irrigation requirements and scheduling
 - Water footprint indicators
 - Water consumption in olive production and milling
 - Biodiversity indicators based on field observations

HOW IT CONTRIBUTED TO WATER RESILIENCE

The TIC4BIO platform contributes to improving water resilience by:

- Optimising irrigation scheduling and reducing unnecessary water consumption
- Providing real-time information to support farm decision-making
- Quantifying water footprint at farm and olive oil production level

These tools support farmers in adapting to increasing water scarcity while maintaining productivity.

UPTAKE / PRACTICAL APPLICATION

Who and how can benefit from this innovation? The TIC4BIO solution can be applied by:

- Organic olive farmers
- Irrigated Mediterranean perennial crop systems
- Agricultural cooperatives and olive mills
- Water user associations and irrigation communities
- Agricultural advisors and technicians

The platform provides practical tools for improving irrigation efficiency, reducing water use and integrating biodiversity monitoring into farm management.

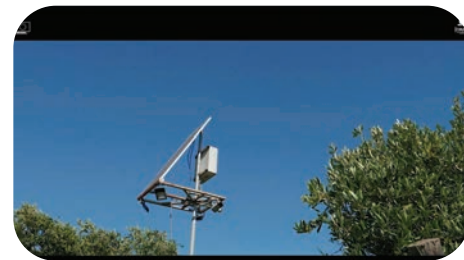


PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 2022-2024

BUDGET: 290.983€

CONTACT:
opi01.op@ceia3.es



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Surface irrigation is widely used in the Po River plain for rice and traditional mixed grass meadows. Limited control of irrigation flows can lead to excessive water use and increase the risk of nutrient leaching to groundwater and surface waters. Improving flow regulation and irrigation efficiency is therefore a key challenge.

SOLUTION DEVELOPED

The SUPERIRRI project tests improved management of surface irrigation systems using adjustable sluice gates and better control of water levels in irrigation channels. Field monitoring and hydraulic analysis support the optimisation of irrigation timing and water distribution.

HOW IT CONTRIBUTED TO WATER RESILIENCE

Improved control of irrigation flows reduces water losses and limits nutrient transport to groundwater and drainage networks. At the same time, surface irrigation continues to support groundwater recharge and agricultural productivity.

UPTAKE / PRACTICAL APPLICATION

Farmers, irrigation consortia and water managers can apply the results to improve irrigation practices in rice and meadow systems. Adjustable gates and optimised irrigation scheduling provide practical tools to regulate water distribution and reduce environmental impacts.



PROJECT TYPE: PSR 2014-2020 REGIONE EMILIA-ROMAGNA

DATES: 01/01/2023 - 04/08/2024.

BUDGET: € 248,00411

CONTACT:

Salvatore Luca Gentile
Romagnologentile@consorzio
cer.it



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Farmer mindset was a major challenge to overcome. Initially, there was poor uptake when the project was launched. Farmer participation is the main driver for improving water quality on farms. Phosphorus is the main pollutant within the catchment. On-farm actions are only as good as the way a farm is managed.

SOLUTION DEVELOPED

The approach was changed so that farmers were offered funding to complete those actions they felt suited their farm best. The only mandatory requirement was to join the Mulkear-EIP discussion group. A full list of 35 possible on-farm actions with payments at different levels was offered to each farmer, they had the option of choosing a max of 4 actions

HOW IT CONTRIBUTED TO WATER RESILIENCE

The actions that were completed were only as good as the farmers that completed them. It was found there was a huge variance on actions completed. The main contributor was the discussion groups where farmers were shown the risk to water quality, the value of slurry and the mis-use of fertiliser etc

UPTAKE / PRACTICAL APPLICATION

The focus was on implementing targeted measures, "the right measure in the right place" This was achieved by the 65 participating farmers. The scoring system used, identified the risk to the Mulkear catchment posed by each farm, importantly, it also used farmer attitude towards the project as a significant scoring tool. Unless a project like this has buy-in from the outset by enthusiastic and open-minded participants, it is unlikely to succeed. These were then successfully put into practice with an impressive 95% uptake of on farm actions.



PROJECT TYPE: EIP-AGRI
Operational Group

DATES: July 2019 – December 2023

BUDGET: €1.17m

CONTACT: David Thompson B.
Ag. Sc, M.A. Secretary of
Mulkear Catchment Limited:
0868228522

davidthompson246@gmail.com



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



<https://www.interregeurope.eu/gems>



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Prevention of groundwater nitrate pollution from agricultural sources, by comparing the effectiveness of innovative practices in every region to address this challenge, planning the fertilisation, its application, land monitoring and the aquifers, delimitation the vulnerable zones and application of actions plans in GEMS regions (Murcia Region in Spain, Slovakia, Austria, Malta, Flanders in Belgium, Denmark and Grand East in France).

SOLUTION DEVELOPED

Application of a catalogue of measures based on the experience of the other partners.

The results are policy improvements that can consist of improving the monitoring network, set criterion for the Vulnerable zone designations, inclusion of additional obligations in the action plans, or rules to guarantee the compliance, awareness tools for farmers.

HOW IT CONTRIBUTED TO WATER RESILIENCE

Preventing nitrate pollution and maintaining the quality of water bodies, and in particular aquifers, is essential to guarantee the water supply.

UPTAKE / PRACTICAL APPLICATION

GEMS has a wide scale, improving its policies in its regions, benefiting citizens.

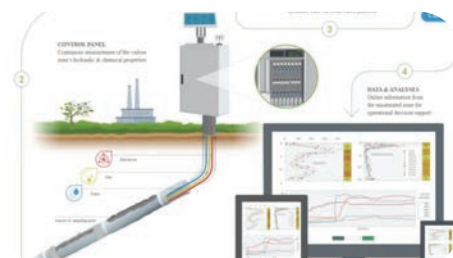
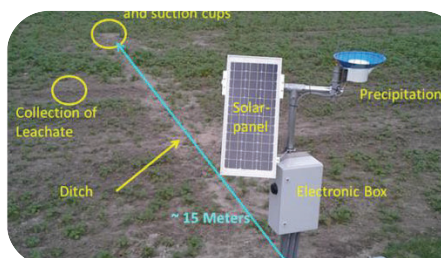


PROJECT TYPE: Interreg Europe

DATES: 01/04/2024 - 30/06/2028

BUDGET: € 1 890 899

CONTACT: Miguel Ángel del Amor Saavedra
miguela.delamor@carm.es



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Preventing groundwater pollution from agricultural activity with a system of moisture probes that determine the risk of leaching in the agricultural plot.

SOLUTION DEVELOPED

It consists of a monitoring network with moisture probes placed in the crops that, when the soil becomes saturated and there is a risk of leaching, stops the irrigation by sending an alert to the farmer's mobile phone through an app.



PROJECT TYPE: Operational
Group ERDF PROGRAM
2014-2020

DATES: July 2021 - On going

BUDGET: 1.398.085,22 €

CONTACT: Miguel Ángel del
Amor Saavedra
(miguela.delamor@carm.es)

HOW IT CONTRIBUTED TO WATER RESILIENCE

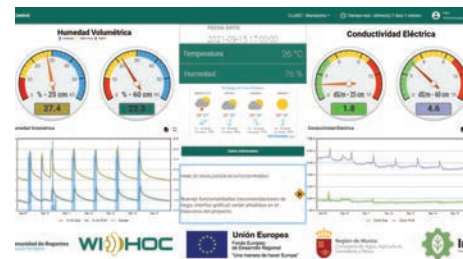
Preventing agricultural leaching preserves water quality, protects aquifers and coastal ecosystems, and helps guarantee a secure water supply—especially in water-scarce regions.

UPTAKE / PRACTICAL APPLICATION

Who and how can benefit from this innovation?

Precision agriculture allows for adjusting water and fertiliser inputs to the plant's consumption rate; therefore, farmers are the primary beneficiaries.

On the other hand, the general public benefits from preventing groundwater contamination.

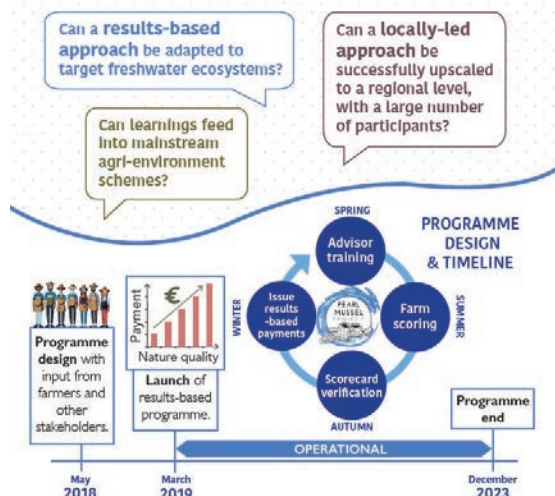


This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



<https://www.wetlandsurveys.ie/pearl-mussel-project>



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The Pearl Mussel Project was established to address concerns around the pressures from agricultural land-use on the conservation of the rare and endangered freshwater pearl mussel in Ireland.

SOLUTION DEVELOPED

A locally led results-based agri-environmental payment scheme was designed to reward and incentivise farmers to improve management of their lands to benefit water quality and the habitat of the endangered freshwater pearl mussel.

HOW IT CONTRIBUTED TO WATER RESILIENCE

Freshwater pearl mussel require exceptionally clean water and stable hydrological conditions within rivers to survive. Farmers were incentivised to alter their land management to provide these conditions in the rivers.

UPTAKE / PRACTICAL APPLICATION

The scheme was made available to all farmers within eight priority catchments in Ireland. Over 80% (no 465) of farmers participated in the scheme. The scheme informed the design of ACRES Cooperation Project, a mainstream results-based scheme operating in Ireland with over 20,000 participating farmers.

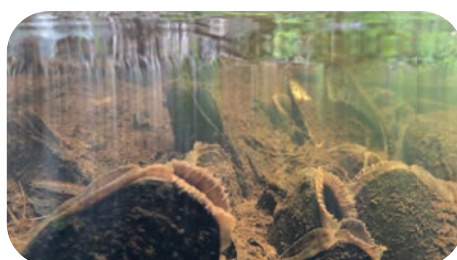


PROJECT TYPE: EIP-AGRI Operational Group

DATES: 2018 to 2023

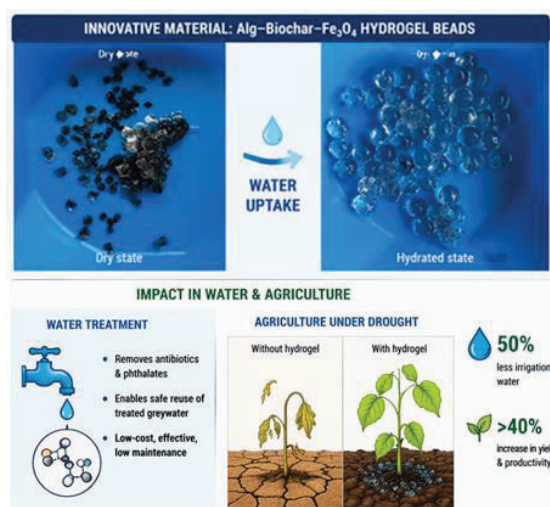
BUDGET: €10 million

CONTACT:
Dr Patrick Crushell
Wetland Surveys Ireland
patrick@WetlandSurveys.ie
+353 64 6642524



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The project addresses key challenges in water management, including increasing water scarcity and drought intensification due to climate change, inefficient irrigation and significant water losses, and contamination of water sources with emerging pollutants such as antibiotics and phthalates. It also responds to the limited availability of affordable and sustainable water treatment solutions, poor soil water retention affecting crop resilience, the lack of safe greywater reuse options, and the growing environmental risks associated with the spread of antibiotic resistance.

SOLUTION DEVELOPED

The project developed an **innovative, cost-effective composite superabsorbent material based on alginate, biochar derived from agricultural waste, and Fe_3O_4 nanoparticles**. This multifunctional hydrogel is designed to simultaneously remove organic pollutants (such as antibiotics and phthalates) from contaminated water and significantly enhance soil water retention. The material is environmentally friendly, reusable, and supports sustainable agriculture by reducing irrigation needs while improving crop resilience under drought conditions.

HOW IT CONTRIBUTED TO WATER RESILIENCE

The developed solution enhances water resilience by improving both water availability and quality in agricultural systems. The superabsorbent hydrogel significantly increases soil water retention, reducing irrigation demand and helping crops withstand drought conditions. At the same time, its high efficiency in removing contaminants such as antibiotics and phthalates enables the safe reuse of treated greywater. By combining water saving, purification, and reuse, the material supports more sustainable and climate-resilient water management practices.

UPTAKE / PRACTICAL APPLICATION

Who and how can benefit from this innovation?

The innovation can be readily applied by farmers, households, and local communities, particularly in water-scarce regions, as well as by stakeholders involved in wastewater management and sustainable agriculture. Farmers benefit from reduced irrigation needs and improved crop yields, while households can safely reuse treated greywater using a low-cost, easy-to-implement solution.

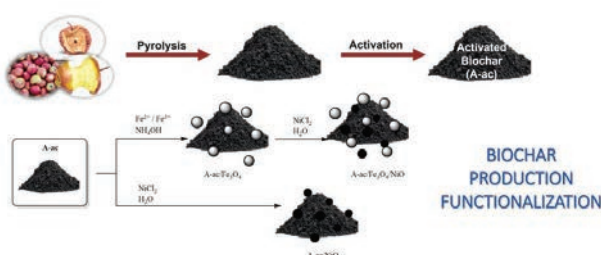


PROJECT TYPE: COFUND

BUDGET: 982 400 €

CONTACT: Project director - Dr. Habil. Maria-Loredana SORAN

loredana.soran@itim-cj.ro



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

- Complex water flows across systems and users, limiting awareness
- Overuse and mismanagement of nutrients from chemical fertilizers and livestock manures
- Lack of comprehensive and harmonized data on soil health from soil monitoring

SOLUTIONS DEVELOPED

- New agricultural practice and procedure with the use of biochar
- Implementation of MRV - Monitoring/Reporting/Validating approach with the use of QSWAT - Quantum Soil and Water Assessment Tool
- MARINA and DAIZY model streamlining

HOW IT CONTRIBUTED TO WATER RESILIENCE

- Increased soil water holding capacity
- Enhancement of soil - water interface nutrient diffusion resilience
- Increased ecosystem resilience to extreme climatic events

UPTAKE / PRACTICAL APPLICATION

- Farmers - Farmers Unions
- Advisors - Extension Services

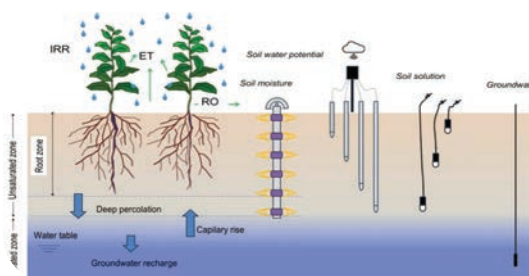
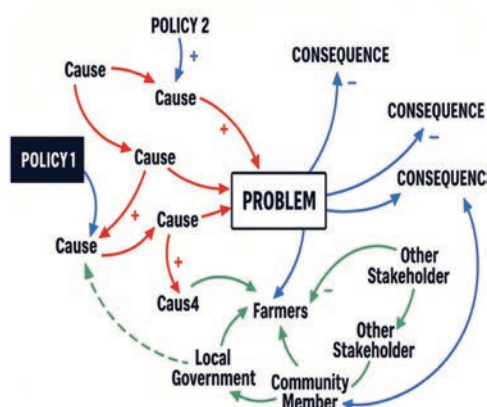
PROJECT TYPE: HORIZON EUROPE

DATES: 01/07/2024 - 30/06/2028

BUDGET: 8 483 712.50

CONTACT: Konstantinos Soulis

Agricultural University of Athens-
Department of Natural Resources
Management and Agricultural
Engineering - Lab. of Soil Science and
Agricultural Chemistry - GIS Research
Unit, Iera Odos str. 75, 11855 Athens,
GREECE - soco@aua.gr



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

FIELD VISITS





MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Climate change is intensifying droughts, heat stress, and extreme rainfall events, increasing pressure on agricultural systems. Soil erosion, nutrient leaching, and limited establishment windows for cover crops reduce soil water retention and long-term productivity.

SOLUTION DEVELOPED

The project tests the use of large agricultural drones to sow cover crops and undersown crops precisely from the air. Drone-based seeding decouples sowing time from soil trafficability and harvest time, enabling flexible application during optimal weather windows. Cover crops can be sown into standing cereals before harvest, and undersown crops can be applied just before canopy closure.

HOW IT CONTRIBUTES TO WATER RESILIENCE

By shifting the sowing time to before harvest, drone-based seeding creates a significant vegetative head start. This enables larger and more vigorous crop stands, enhancing soil structure, increasing infiltration, reducing erosion from heavy rainfall, and improving water retention during dry periods. Continuous plant cover further reduces evaporation and nutrient losses, strengthening the soil's capacity to buffer climatic extremes. By improving soil health and stability, drone seeding supports long-term water resilience in arable and forage systems.

UPTAKE / PRACTICAL APPLICATION

Farmers gain greater independence from weather-related constraints and reduced labor peaks. Advisory services, contractors, and seed suppliers can develop specialized drone-based sowing services and tailored seed mixtures.



PROJECT TYPE: EIP-AGRI Operational Group

DATES: 01.10.2024 – 30.09.2027

BUDGET: 397.000 €

CONTACT: Chamber of Agriculture Schleswig-Holstein - Ruben Soth
rsoth@lksh.de

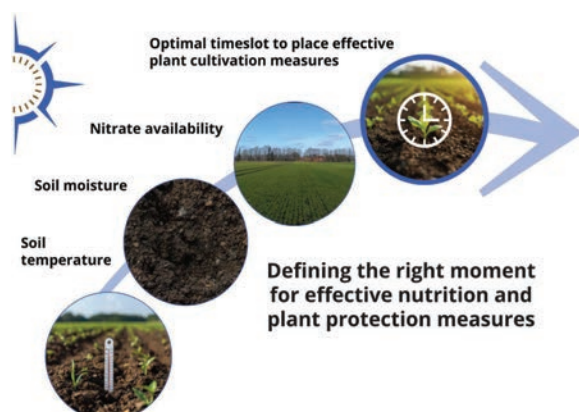


This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Funded by the European Union



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Agricultural decision-making is becoming increasingly complex under climate change. Unpredictable weather events such as drought periods and extreme rainfall alter soil moisture dynamics and nutrient availability. At the same time strict legal regulations require an efficient use of fertilisers to decrease the risk of nutrient leaching.

SOLUTION DEVELOPED

The project develops a data-based decision-support system for site-specific nutrient management. On representative arable farms, continuous in-season measurements are conducted, including nitrate availability, soil moisture and others. The data are processed and provided via a web-based platform making real-time information accessible.

HOW IT CONTRIBUTES TO WATER RESILIENCE

By linking soil moisture, weather data and nutrient dynamics, the Nutrient-Compass improves understanding of water-nutrient interactions. It supports optimised fertilisation timing and dosage based on actual soil water conditions. This reduces nutrient leaching risks, improves nitrogen use efficiency and strengthens soil stability.

UPTAKE / PRACTICAL APPLICATION

Arable farmers benefit from reliable, site-specific and up-to-date data for operational decision-making. Advisory services gain a scientifically validated database to support farm-specific recommendations.

PROJECT TYPE: EIP-AGRI Operational Group

DATES: 10.08.2023 – 09.08.2027

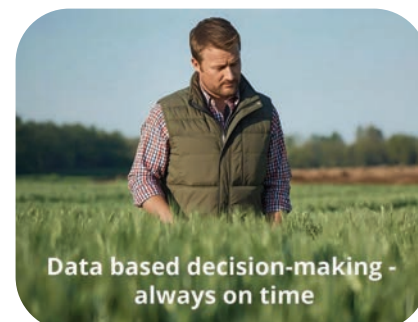
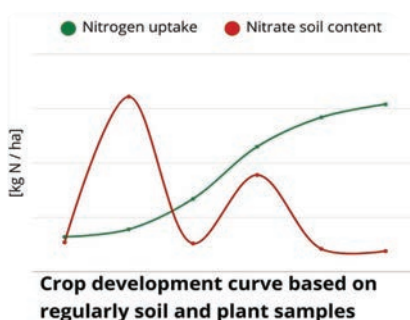
BUDGET: 438.000 €

CONTACT: INGUS - Ingenieurdienst Umweltsteuerung GmbH

Anne Blanke, Hanna Jakubczak

info@ingus-net.de

www.naehrstoff-kompass-sh.de



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

- Manual irrigation wastes water
- Operational knowledge gets lost
- Language barriers slow coordination



SOLUTION DEVELOPED

- Automated irrigation control
- AI-based knowledge database
- Integrated task translation



PROJECT TYPE: EIP-AGRI Operational Group

DATES: 01 July 2024 - 30 June 2027

BUDGET: 498.744,34 €

CONTACT: www.floragpt.eu
floragpt-kontakt@offis.de

HOW IT CONTRIBUTES TO WATER RESILIENCE

- Less water use
- Stable decision-making
- Clear multilingual communication

UPTAKE / PRACTICAL APPLICATION

- The system is currently being tested in four tree nurseries as part of the project
- Tree nurseries improve water efficiency, secure expertise and coordinate teams across languages.
- Scalable to other agricultural and horticultural sectors.



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

- Increasing drought stress due to climate change
- Limited water available for irrigation of sugar beets
- High production risks for farmers and sugar industry

SOLUTION DEVELOPED

- Reducing water losses due to transpiration and evaporation
- Saving water by using a super absorber based on lignin (Agrobiogel)
- Band application of Agrobiogel under the sugar beet rows
- Developing sensor-based irrigation models

HOW IT CONTRIBUTES TO WATER RESILIENCE

- Increasing water use efficiency of natural precipitation and irrigation
- Increasing nutrient efficiency

UPTAKE / PRACTICAL APPLICATION

- Farmers (keeping yields high, saving water)
- Sugar Industry (Securing raw materials)
- Municipalities (Job security and regional income)



PROJECT TYPE: EIP-AGRI Operational Group

DATES: 2024 - 30.06.2027

BUDGET: 257.385,40 €

CONTACT:
 Stephen Baumgarten
 ARGE NORD e.V.
Stephen.baumgarten@arge-nord.de
 Phone: 015117151955



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Funded by
the European Union



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

We rewet parts of peatlands in a landscape drained for agricultural purposes. The goal is to substantially reduce GHG emissions by achieving a water level of 10 centimeters below surface and promoting paludiculture.

SOLUTION DEVELOPED

We are continuously improving the rewetting concept, by learning from ongoing practical experience. We aim to find a balance between maintaining a stable water level, ensuring the area remains accessible for adapted harvesting machinery, and preventing unintended rewetting of adjacent areas.

HOW IT CONTRIBUTES TO WATER RESILIENCE

Rewetted peatlands have a much more stable water level.

The effect of droughts or heavy rainfall are reduced. Wet peatlands can also have a positive effect on the local climate by cooling the landscape in summer.

UPTAKE / PRACTICAL APPLICATION

Farmers in peatland regions face challenges, as drained peat soils continue to degrade and become increasingly difficult to drain. The possibility of wet cultivation allows farmers to diversify their value creation to secure their future.

There is some private farmer participation, with a more widespread adoption expected when the new German Paludiculture Guideline and its associated funding take effect.



PROJECT TYPE: Funded by German Federal Ministry for the Environment

DATES: 2021 – 2031

BUDGET: 20 Mio €

CONTACT: Dr. Elena Zydek,
elena.zydek@stiftungsland.de
Stiftung Naturschutz
Schleswig-Holstein
(Foundation for Nature Conservation)



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



**Funded by
the European Union**



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The project addresses key challenges in irrigation management by evaluating mobile irrigation systems and their control technologies, with the aim of improving water use efficiency.

SOLUTION DEVELOPED

The 4DRain research project focuses on developing and testing measurement methods to better assess irrigation systems used in agricultural practice. These methods are designed to evaluate water distribution and system performance under real field conditions, considering both currently used irrigation technologies and future solutions such as self-driving or autonomous irrigation machines. By collecting detailed field data, the project aims to improve irrigation efficiency and support more sustainable water management in agriculture.

HOW IT CONTRIBUTES TO WATER RESILIENCE

The project contributes to water resilience by improving the monitoring and evaluation of irrigation systems, enabling more efficient water use and better irrigation management under changing climatic conditions.

UPTAKE / PRACTICAL APPLICATION

Various stakeholders can benefit from the outcomes of this project. Farmers and irrigation operators can use the developed measurement approaches to better evaluate and optimise the performance of irrigation systems in practice. Researchers and advisory services can apply the collected data and methods to improve irrigation planning and system assessment. In the long term, the results support more efficient water use and sustainable irrigation management in agriculture.



**PROJECT TYPE: ESF-EFRE
(European Social Fund –
European Regional
Development Fund)**

**DATES: 01.01.2025 –
31.12.2026**

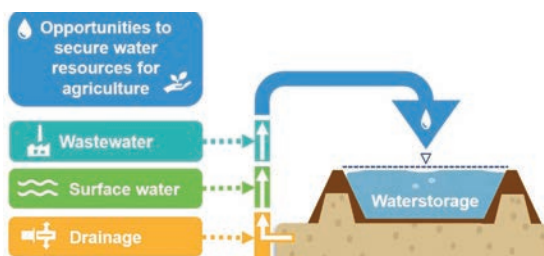
BUDGET: 396.861,36 €

CONTACT:
Felix Schmidt M.Sc.
Felix.Schmidt@ostfalia.de



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

The biggest challenge we face is drought as a result of climate change and changing precipitation patterns in our regions.

SOLUTION DEVELOPED

The WassKli research project addresses several key aspects of sustainable water management. It focuses on the development of concepts for water storage in both natural and artificial reservoirs, while also evaluating the potential use of alternative water resources. These include, for example, drainage water and treated effluent from wastewater treatment plants.

HOW IT CONTRIBUTES TO WATER RESILIENCE

The project contributes to water resilience by identifying and developing strategies that improve water availability during periods of scarcity.

UPTAKE / PRACTICAL APPLICATION

Various stakeholders can benefit from the outcomes of this innovation. Water authorities and policymakers can use the developed concepts and assessments to design more resilient regional water management strategies and climate adaptation measures. Farmers and land managers may benefit from improved water availability through enhanced storage options and the potential use of alternative water sources for irrigation.



PROJECT TYPE: EIP-AGRI
Operational Group

DATES: 01.07.2024 -
30.06.2027

BUDGET: 425.933,89 €

CONTACT:
Prof. Dr.-Ing. Klaus Röttcher
k.roettcher@ostfalia.de



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Funded by
the European Union



PROJECT TYPE: EIP AGRI
Operational Group

DATES: 01.03.2026-28.02.2029

BUDGET: 494.000€

CONTACT: Christian-Albrechts-
Universität zu Kiel

Prof. Dr. Sandra Spielvogel
s.spielvogel@soils.uni-kiel.de

MAIN CHALLENGES FOR WATER MANAGEMENT IN GRAIN PRODUCTION

- Loss of organic matter reduces soil water-holding capacity
- Increasing drought periods threaten yield stability and grain quality

APPROACHING SOLUTIONS

- Implement species-rich undersown mixtures in oat cultivation
- Enhance soil carbon input, improve soil structure, and stimulate microbial activity
- Provide resources for pollinators and form a protective mulch layer that reduces evaporation after oat harvest

CONTRIBUTIONS TO WATER RESILIENCE

- Increased soil organic matter content and improved soil aggregation → higher water-holding capacity.
- Mulch layer → higher soil water contents at the start of the subsequent growing season
- Improved access to subsoil water reserves.
- Higher biodiversity → increasing plant and soil resilience

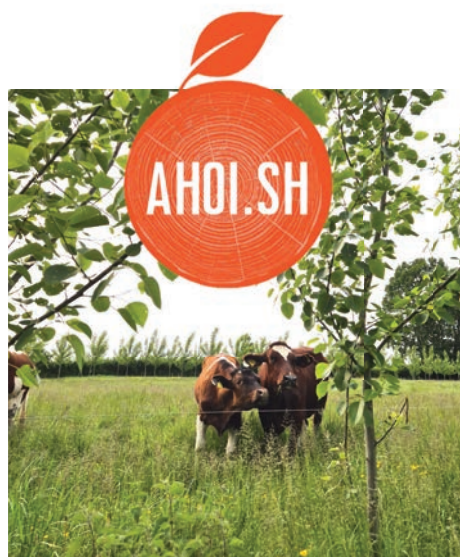
UPTAKE / PRACTICAL APPLICATION

- Farmers → improved soil water retention, yield stability and biodiversity
- Evidence-based recommendations for selecting and managing undersown mixtures
- Integration into conventional and organic farming systems possible
- By combining productivity and ecological performance, the approach supports climate-resilient arable farming systems



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Climate change increases drought stress, heat load, and extreme rainfall events in agricultural landscapes. Open arable and grassland systems are vulnerable to wind exposure, soil erosion, water loss, and declining biodiversity. Despite the ecological potential of agroforestry, farmers lack reliable economic data, yield assessments, and viable wood value chains, making adoption risky.

SOLUTION DEVELOPED

The project evaluates existing agroforestry systems on participating farms. It generates comprehensive agronomic, economic, and wood-technical data. Demonstration sites, regional wood-processing partnerships, calculation models, a practical guideline, and an AI-supported decision tool provide a science-based foundation for farm-specific implementation.

HOW IT CONTRIBUTES TO WATER RESILIENCE

Tree strips improve microclimate conditions by reducing wind speed, moderating temperature extremes, and lowering evapotranspiration. Deep-rooting trees enhance soil structure, increase infiltration, and improve water retention capacity. Agroforestry systems reduce erosion risks during heavy rainfall and stabilize soils during dry periods.

UPTAKE / PRACTICAL APPLICATION

Farmers gain reliable data to assess whether agroforestry is economically and agronomically suitable for their operation. Regional wood processors benefit from the development of new value chains for agroforestry timber (e.g., energy wood, biochar, etc.). The project provides practical tools and decision-support systems that enable farms to integrate agroforestry as a climate-resilient and economically viable land-use strategy.

FARMS IN PROJECT CONSORTIUM



Landwirtschaftsbetrieb
Rauert



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



Funded by
the European Union



MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Due to climate change and increasing droughts during the growing season, more land is being irrigated using field irrigation. Groundwater is generally used for this purpose. New approaches are needed to compensate for water shortages during the summer months.

SOLUTION DEVELOPED

One solution is the reuse of water from food production: storage of water produced during sugar production in winter is used for field irrigation in the summer months.

HOW IT CONTRIBUTED TO WATER RESILIENCE

By storing and using the water, less water needs to be extracted from the groundwater, meaning that more water is available for field irrigation overall.

UPTAKE / PRACTICAL APPLICATION

The projects have a positive impact on water and nature conservation. Around 100 farms covering an area of approximately 5,000 hectares benefit from the additional water supplies.



PROJECT TYPE: Sub-Project of the Interreg North Sea Project: Blue Transition

DATES: water reservoir Stöcken (2003) 770.000 m³ content / water reservoir Borg (2014), 440.000 m³ content

BUDGET: water reservoir Stöcken: 5 Million € / water reservoir Borg: 4,2 Million €

CONTACT: Clemens Löbnitz, Kreisverband der Wasser- und Bodenverbände Uelzen, clemens.loebnitz@wasser-uelzen.de

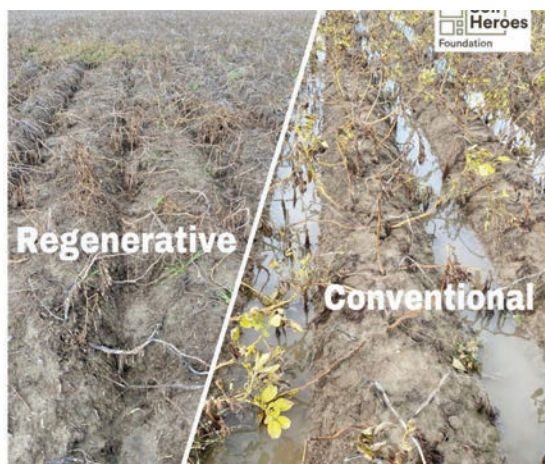


This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:

OTHER PROJECTS





MAIN CHALLENGES FOR WATER MANAGEMENT ADDRESSED

Greater understanding of the relationship between farming practices and soil health, and soil health and the water holding capacity of soils

SOLUTION DEVELOPED

The study affirmed the belief that fields managed with regenerative farming practices lead to improved water holding capacity.

HOW IT CONTRIBUTED TO WATER RESILIENCE

By supporting the understanding that if a farmer implements regenerative farming practices, they can improve their farm's water holding capacity: less irrigation, reduced run off, less stagnation of water in the fields, less plant stress, more stable and uniform yields.

UPTAKE / PRACTICAL APPLICATION

Farmers can benefit from this to improve their farm's resilience to climate change, and for food companies to improve their food supply chain resilience.



PROJECT TYPE: Other

DATES: 2020 - 2024

BUDGET: EU RDP funds: €697,500

CONTACT:

Annabelle Williams

annabelle@soilheroesfoundation.com



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



<https://www.fairandgreen.com/nachhaltige-schnittblumen-eip/>



MAIN CHALLENGES FOR SUSTAINABILITY MANAGEMENT ADDRESSED

High energy costs, intensive pest and disease management to ensure marketable flower quality and increasing competition from imports are putting strong pressure on regional flower producers. At the same time, consumer expectations regarding sustainable horticultural production are rising.

A key challenge is that existing practices and knowledge gaps in sustainability management hinder the transition to more resilient and resource-efficient production systems—including improved water use, input efficiency, and ecosystem management.

SOLUTION DEVELOPED

The project develops farm-specific tools and management approaches to enable more sustainable cut flower production in the Hamburg region. This includes:

- Practical sustainability management tools for farms
- Development of criteria along the value chain
- Integration into the FAIR'N GREEN sustainability system
- Use of regionally available water resources (drainage and irrigation canals) as a key element of resource-efficient production

HOW IT CONTRIBUTED TO WATER RESILIENCE

The project promotes the use of regional drainage and irrigation canal water, reducing pressure on potable water resources.

Innovative approaches such as hydroponic, substrate-free tulip production based on canal water further reduce energy demand and CO₂ emissions.

Overall, the project strengthens resource-efficient and climate-resilient water management in horticulture.

UPTAKE / PRACTICAL APPLICATION

The solutions are directly applicable to:

- Regional cut flower farms
- Horticultural businesses seeking sustainable transformation
- Value chain actors (marketing, distribution, certification)

The project also supports:

- Development of new marketing channels
- Creation of a regional value network
- Transferability of sustainability standards to the sector

The project also fosters knowledge exchange and networking through a regular round table format for regional cut flower producers, supporting peer learning and the dissemination of sustainable practices.



PROJECT TYPE: Applied Research & Innovation Project

OG: Athenga GmbH - Fair and Green e.V. - University of Kassel
Jens Wöbb Gartenbaubetrieb
Blumen Unruh - Knobi-Blumen

DATES: 2024 – 2027

BUDGET: 464.695,95 EUR

CONTACT: Fair and Green e.V.
lina.leppich@fairandgreen.com
liza.nemes@fairandgreen.com
University of Kassel
carolin.holtkamp@uni-kassel.de



This poster was presented at the EU CAP Network conference 'Water resilience in agriculture: innovation in practice' - Hamburg, Germany, 19-21 May 2026

In collaboration with:



**Funded by
the European Union**

EU CAP Network conference 'Water resilience in agriculture: innovation in practice'

19-21 May | **Hamburg, Germany**

All information on the conference is available
on the event webpage:

<https://eu-cap-network.ec.europa.eu/events/eu-cap-network-conference-water-resilience-agriculture-innovation-practice>



Funded by
the European Union