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Italy – Croatia

BLUE RECHARGE

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Deliverable D3.4.1

"Popular BLUE RECHARGE proposal": results of consensus building laboratories

Programme	(Interreg VI-A) Italy- Croatia
Project ID	ITHR0200450
Projecy Name	Blue credits for water aquifers recharge and sustainability
Project Acronym	BLUE RECHARGE
Programme priority	Green and resilient shared environment
Specific objective	2.1: Promoting climate change adaptation and disaster risk prevention, resilience, taking into account eco-system-based approaches
Project duration in months	30
Period 4 – Activity 3.4	Consensus building and civil society engagement
Deliverable 3.4.1	"Popular BLUE RECHARGE proposal": results of consensus building laboratories (Presentation material)
Deliverable Coordinator	Venetian Cluster



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Introduction

The BLUE RECHARGE Project

Many ecosystems and economic sectors in Europe depend on the availability of water of sufficient quality. Groundwater provides a safe and sustainable resource to meet demands for drinking, agriculture, industry and tourism: groundwater accounts for 65% of drinking water and 25% of water for agricultural irrigation. Groundwater is a finite resource that needs to be protected not only from pollution, also to be preserved from the damage of climate change and human over-exploitation, to ensure the long-term sustainability: in the Mediterranean rim, water scarcity is a relevant issue and climate change is expected to aggravate its availability.
The overall objective of the project is to reach and keep a "good chemical and quantitative status of groundwater" to be achieved by ensuring that the available groundwater resource is not exceeded by the long-term annual average rate of abstraction. The project will contribute to the inversion of the current trends of overexploitation of groundwater resources increasing aquifer recharging rates in order to rebalance the aquifers and foster their sustainable use. Promoting cooperation between public authorities, research institutions and private companies will be fundamental in order to take advantage of new scientific results and multidisciplinary research to improve observation of climate change effects on groundwater and draw and plan the related adaptation strategies.
This objective is intended to be economically sustainable in the long term through an incentive system, called Blue Credits, for private and public entities supporting aquifer recharge. Blue Credits comprise the technical and financial instruments and procedures required to implement the system. The mechanism is centred on financial support – creating a Blue Stewardship approach – for recharge actions, while the economic mechanism for selling and buying credits in an ad hoc market is developed through the project activities.

1. Deliverable's Overview and Objectives

This deliverable consists of a compendium titled "Popular BLUE RECHARGE proposal," which aims, on the one hand, to compile the results of the WP3 workshops and training sessions, and, on the other hand, to collect the materials used during the presentations which might be useful for future readers' perusal, to better understand the project outputs and the Blue credit Mechanism.

2. Deviations

No deviations were reported for this deliverable.



3. Intended audience

This deliverables is intended for public authorities in charge of aquifer management, water management and environmental authorisations, basin authorities, land owners, water utilities, project developers, auditors, enterprises, end users, registry operators, market intermediaries, certification bodies and general public interested in the sustainable management of the water resources and the wellbeing of the environment and of the ecosystems.

1. Stakeholder groups involved

The workshops and training activities targeted public authorities in charge of aquifer management, water management and environmental authorisations, basin authorities, land owners, water utilities, project developers, auditors, enterprises, end users, registry operators, market intermediaries, certification bodies and the general public interested in sustainable water-resource management and environmental wellbeing.

On the Italian side, the activities involved a diverse range of stakeholders, including regional and local public authorities, research and academic institutions, water-management organisations, agricultural actors, enterprises and innovation organisations, supporting a multi-actor and cross-sectoral approach to capacity building.

The Croatian workshop organised by the City of Vodnjan-Dignano involved representatives of the public water sector, the Istria County administration, local agricultural and rural-development organisations, and family farms. A total of 11 participants were registered.

2. Activities Carried out

2.1 Activities carried out by Italian partners

The dissemination activities of WP3 were carried out by both Italian and Croatian partners. On the Italian side, the partners involved were PP2 (Venetian Cluster – VHC), PP4 (EXO) and PP5 (Emiliano Romagnolo Canal Reclamation & Irrigation Board – CER).

VHC organised two workshops, one at international level held on 27 May 2026 and one at national level held on 18 June 2026. EXO and CER organised one training course each: CER on 14 May 2026 at the premises of the pilot site and EXO on 29 June 2026.

The table below summarises the activities:

Type of Event	Organising partner	Title	Date
Joint Training Course	Emiliano Romagnolo Canal Reclamation & Irrigation Board (CER)	Study Visit and Workshop – The Aquifer Recharge Model Tested at the Italian Pilot Site and Its Replicability	14 May 2026
International Workshop	Venetian Cluster (VHC)	International Workshop – Replicability of Blue Stewardship for Climate Change Adaptation	27 May 2026
National Workshop	Venetian Cluster (VHC)	WATER LAB: idee, comportamenti e soluzioni per una gestione sostenibile	18 June 2026
Joint Training Course	EXO	Online Workshop "Replicability of Blue Stewardship for Climate Change Adaptation"	29 June 2026

2.2 Activities carried out by Croatian partners

On 12 June 2026, the City of Vodnjan-Dignano, Lead Partner of the BLUE RECHARGE project, organised a stakeholder workshop in Vodnjan-Dignano as part of Activity 3.4 – Consensus Building and Civil Society Engagement.

The workshop included a presentation on the water resources of Southern Istria, focusing on the hydrogeological characteristics of groundwater body JKGN 03, the impacts of climate change on groundwater availability, risks related to overexploitation and salinisation of karst aquifers, and the potential application of Managed Aquifer Recharge (MAR).

Saša Moharić, on behalf of the City of Vodnjan-Dignano as Lead Partner, presented the BLUE RECHARGE project context and facilitated the discussion on the Blue Credits approach, stakeholder involvement and its possible future application at local level.

A dedicated interactive stakeholder discussion was then organised with the objectives of gathering stakeholder input, identifying local needs and formulating recommendations for the further development of the Blue Credits model.

3. Main topics discussed

Italian activities

The WP3 training and workshop activities implemented within BLUE RECHARGE aimed at two specific objectives: raising awareness of water saving and increasingly integrating different private and public stakeholders into the Blue Credits market.

One of the core messages was to strengthen stakeholders' knowledge and awareness regarding sustainable groundwater management and climate-change adaptation. CER organised a training activity during the pilot-site visit at the wetlands of Longastrino, in the Province of Ravenna, and at the Codigoro Pumping Station in the Ferrara area. The activity combined field-based and frontal sessions, enabling participants to directly observe solutions and monitoring approaches implemented at the pilot site and discuss related methodologies, experiences and results.

Venetian Cluster organised the online workshop WATER LAB: ideas, behaviours and solutions for sustainable groundwater management, bringing together public and private actors to discuss practical solutions and exchange experiences related to safeguarding groundwater resources.

For the second core topic, concerning the replicability of innovative water-management solutions and the transferability of Blue Stewardship approaches, VHC organised the online international workshop "Replicability of Blue Stewardship for Climate Change Adaptation". The workshop explored the potential for transferring good practices and solutions developed within BLUE RECHARGE to other territories, supported by insights from international experts and exchange of good practices.

EXO organised an online training activity to present the newly developed software application for the exchange of Blue Credits, with the aim of enhancing uptake of the mechanism and enlarging the community of potential stakeholders. Participants received a step-by-step tutorial on the platform's features and functionalities, complemented by practical scenarios illustrating possible real-life use.

Overall, the four Italian activities addressed complementary dimensions of the BLUE RECHARGE objectives: technical implementation and demonstration, stakeholder awareness and capacity building, transfer of good practices, digital tools, replicability and innovative governance mechanisms



for sustainable groundwater management. Particular attention was given to Managed Aquifer Recharge (MAR), the Blue Credits mechanism and their potential contribution to climate-change adaptation, groundwater resilience and improved management of water resources.

Croatian activity

The main topics discussed during the Croatian workshop were:

- groundwater resources of Southern Istria and the characteristics of groundwater body JKGN 03;
- impacts of climate change on groundwater availability;
- risks related to overexploitation, nitrate pressure and salinisation;
- potential application of Managed Aquifer Recharge (MAR);
- the Blue Credits and Blue Stewardship approach;
- responsibilities of public authorities and water-sector operators;
- monitoring, permitting and financing requirements;
- potential benefits for agriculture, family farms and local development;
- links between sustainable water management, local products, rural development and tourism.

4. Relevant feedback and barriers identified

Italian activities

Throughout the workshops, participants were engaged and interested in the project's results and outcomes, in MAR as a sustainable solution for groundwater safeguarding, in the Blue Credits system and in the proposed digital framework. As the activities involved different types of stakeholders, they provided a broad indication of the relevance of the BLUE RECHARGE approach for different categories of actors and geographical contexts.

Stakeholders actively participated in the trainings and events, addressing common issues, highlighting shared needs and exchanging good practices and experiences. The possibility of replicating the system was positively received, with particular attention to the following needs and barriers:

- better addressing saltwater intrusion in coastal aquifers, particularly where groundwater resources are affected by over-abstraction, and strengthening the connection between MAR interventions and the needs of rural and agricultural ecosystems;
- considering water quality alongside quantitative groundwater availability when assessing MAR applications;

- communicating the benefits of the proposed solutions more effectively to farmers and local communities, particularly in relation to drought resilience, and demonstrating tangible territorial, environmental and socio-economic benefits to potential users and beneficiaries.

Croatian activity

A recurring issue was the need for a clear and operational framework for Managed Aquifer Recharge and Blue Credits in Croatia. Participants raised questions concerning the competent authorities, permitting procedures, monitoring responsibilities, long-term management arrangements and the financing of the system.

Water-sector representatives stressed the importance of protecting groundwater quality and ensuring reliable monitoring, particularly in the karst environment of Southern Istria. Risks related to overexploitation, nitrate pressure and salinisation were recognised as issues that should be carefully addressed in any future implementation.

Agricultural stakeholders and family-farm representatives focused on the practical value of the model for end users. Questions were raised regarding the concrete benefits for farmers, possible links between water-saving or infiltration-enhancing agricultural practices and the Blue Stewardship approach, as well as the costs and administrative requirements associated with participation. The need for a simple and accessible system for smaller agricultural operators was identified.

The discussion also highlighted the broader local-development potential of sustainable water management. In addition to agriculture, participants recognised possible links with local food production, preservation of traditional landscapes, rural development and sustainable tourism. Local organisations active in agriculture, community development and tourism could play an important role in awareness raising and in communicating the benefits of sustainable water management to the wider public.

Overall, participants recognised the potential of the BLUE RECHARGE and Blue Credits approach, while underlining that its future application should be gradual, transparent and supported by clear public-sector responsibilities, reliable monitoring, practical incentives and demonstrable benefits for local users.

5. Conclusions and recommendations

Italian activities

Taken together, the Italian activities confirm the relevance of adopting an integrated approach to sustainable groundwater management, combining technical innovation, environmental



considerations, stakeholder participation, knowledge exchange and appropriate governance mechanisms.

The CER experience particularly demonstrated the added value of combining field observation with technical presentations and participatory discussion. This format enabled stakeholders to connect theoretical concepts with concrete pilot-site implementation and was identified as an effective approach for capacity building and knowledge transfer. The activity also confirmed stakeholder interest in the replicability and scalability of the tested solutions and in innovative governance approaches such as Blue Credits.

The VHC workshops complemented this perspective by demonstrating that public and private actors, both internationally and within Italy, are already developing practical approaches to safeguard available water resources and show willingness to exchange good practices and adopt innovative solutions.

The EXO activity further demonstrated the potential for translating the project approach into operational digital solutions, with the presented platform positively validated by participants and considered ready for broader implementation and adoption.

Croatian activity

The stakeholder discussion confirmed that the BLUE RECHARGE approach is relevant for the local context, but also highlighted several conditions that should be addressed before any broader implementation. The main conclusions and recommendations emerging from the Croatian workshop are the following:

- A clearer Croatian operational framework for MAR and Blue Credits is needed.
- Groundwater quality and monitoring must remain a primary safeguard.
- Public authorities and water-sector operators should have a central role in governance and control.
- The system should provide visible and practical benefits for farmers and other local users.
- Participation requirements should remain proportionate and accessible to small family farms.
- Blue Stewardship should be linked with wider local-development objectives, including sustainable agriculture, local products, landscape preservation and rural tourism.
- Future implementation should proceed gradually through well-monitored pilot actions and continued stakeholder involvement.

Across both countries, the consensus-building activities therefore support a common direction: future replication of BLUE RECHARGE should combine sound technical and environmental safeguards with clear governance, practical stakeholder benefits, accessible implementation tools and continued dialogue with the communities and sectors that depend on groundwater resources.



6. Used presentations and other support material

The presentations and supporting materials used during the activities were designed to support different but complementary forms of knowledge transfer, ranging from technical demonstration and field-based learning to awareness raising, exchange of good practices and practical guidance on the use of digital tools. The materials have been collected to facilitate future understanding of the BLUE RECHARGE Blue Credits system. Documents were translated into English where necessary.

Croatian supporting material:

- Workshop Programme – Vodnjan-Dignano, 12 June 2026
- Attendance List – Vodnjan-Dignano, 12 June 2026
- Presentation on Water Resources of Southern Istria
- BLUE RECHARGE / Blue Credits presentation
- Workshop photographs

Annexes

Annexes – Italian activities

- Annex 1 – BLUE RECHARGE Toolkit
- Annex 2 – Blue Credits for Water Aquifers: Overview of the Sustainability Guidelines for Replicability at EU Level
- Annex 3 – BLUE RECHARGE – WATERLAB – Ideas, Behaviours and Solutions for a Sustainable Management of the Aquifer – The BLUE RECHARGE System and the Blue Credits
- Annex 4 – Introductory Video Description of the BLUE RECHARGE System
- Annex 5 – Overview of the BLUE RECHARGE Platform for the Blue Credits
- Annex 6 – Overview of the Certification Process and Monitoring
- Italian supporting materials are available in the shared D3.4.1 project folder.

Supporting material – Croatian activity

- Workshop Programme – Vodnjan-Dignano, 12 June 2026
- Attendance List – Vodnjan-Dignano, 12 June 2026
- Presentation materials used during the workshop (where available)
- Photographic documentation of the workshop (stored in the shared project folder)

7. Photos (if available)