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INN WATER
Promoting social innovation to renew multi-level and cross sector water governance

11

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Result Factsheet

INNWATER AI ASSISTANT

RESULT Type:
ICT software digital solution

Link to the IA Assistant

Owner: eurecat Centre Tecnològic de Catalunya

Contributors: OiEau Office International de l'Eau, REKK, KÖTIVIZIG, WAREG European Water Regulators, UNIVERSITE DE LA RÉUNION, UNIVERSITÉ DE ROUEN NORMANDIE, Westcountry Rivers Trust, Ajuntament de Figueres www.figueres.cat, Brenta, SIWI, ETIFOR valuing nature, EUI

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Description

The AI Assistant is an essential element of the InnWater Governance Platform, designed to support users continuously while they navigate the system. Its purpose is to help users understand how the platform and its tools work, prevent misunderstandings, and provide access to project information without requiring them to download documents. Within the platform, the assistant appears in two ways: through reactive guidance while users interact with the tools, and through a dedicated chat section where users can ask questions and receive answers directly linked to the project's documentation.

Technically, the assistant is built on Large Language Models (LLMs) combined with a Retrieval-Augmented Generation (RAG) architecture. LLMs generate responses using context provided by the system, while the retrieval mechanism extracts relevant passages from a structured database that includes InnWater deliverables, policy briefs, pilot-site materials, and other predefined documents. Only open-source and free LLMs from reputable providers are used, and the choice of model is based on accuracy tests using a specially prepared golden dataset.

The system is organised into five modules:

- Interface Module, which connects the user interface with the AI backend;
- Query Treatment Module, which analyses, reformulates, and directs queries to the appropriate process;
- Retrieval Module, responsible for indexing, searching, and post-processing the project documents;
- Large Language Model, which generates responses based on retrieved data;
- Query-Answer Logger, which records interactions to support system optimisation.

This modular architecture ensures scalability, maintenance efficiency, and clear separation of functions, enabling the assistant to deliver reliable, context-aware answers and to support the platform's e-learning dimension.

TARGET AUDIENCES

For EU and Member State Policy-makers

To **raise awareness** and support the design of coherent water and WEFE nexus strategies and to enable basin and local water authorities to assess governance gaps and tariff scenarios based on clear AI-supported insights.

Others / Civil society and stakeholders

To **share knowledge** and improve transparency, helping non-expert actors understand water governance challenges through accessible AI-generated explanations.

For Research and Technology Organisations / Academia

To **provide researchers** and data scientists with technical expertise and collaboration opportunities to integrate AI-driven governance approaches and reuse InnWater knowledge.

We specially need

We are looking for feedback from different actors from many different real governance contexts to improve and refine the responses and recommendations of the assistant.

SDG's

Unique value proposition

The AI assistant module combines economic and governance models with AI to generate explainable policy recommendations.
The AI assistant is fine-tuned to enhance retrieval precision and improve discrimination between domain-relevant and irrelevant knowledge.

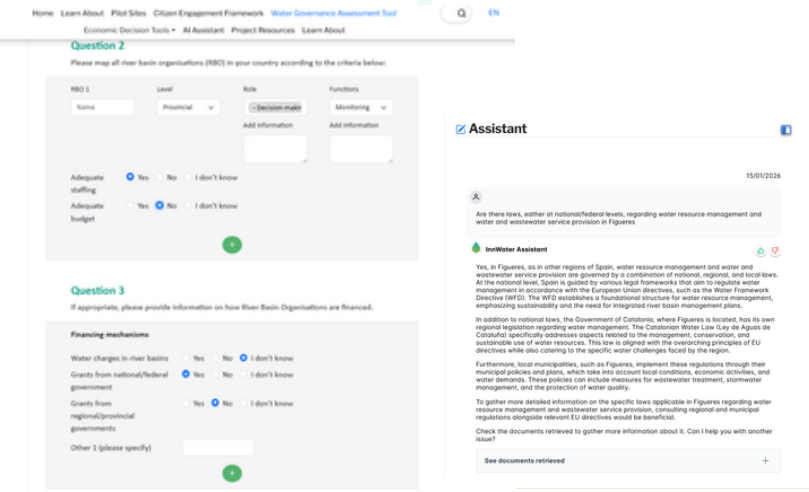
Use beyond the project life

The recommendations of AI assistant can be continuously updated with new datasets, models, and policy inputs, supporting European and regional water authorities.
The AI assistant can be expanded to ingest knowledge from additional Horizon Europe and national research projects, thereby strengthening cross-project interoperability and improving the consistency of water-governance insights across Europe.

Key benefits

Converts model results into strategies and recommendations

Supports decision-making



Impacts

Scientific: Improves understanding and use of InnWater's scientific outputs by providing clear, traceable explanations and supporting consistent interpretation of governance assessments, modelling results and pilot-site data.
Economic: Simplifies access to complex tools, reducing analysis and learning costs for stakeholders. Its open-source, modular design supports cost-effective reuse and future scaling.
Societal: Strengthens institutional and stakeholder capacity by translating technical content into accessible insights, fostering broader engagement and more informed participation across WEFE sectors.
Environmental: Indirectly supports better environmental decisions by improving understanding of governance and modelling information, contributing to more sustainable and resilient water management.

Replicability

Fully replicable for other river basins and governance contexts. The modular architecture allows integration with local data sources, ensuring transferability to other EU and non-EU regions.

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