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JRC SCIENTIFIC INFORMATION SYSTEMS AND DATABASES REPORT

Knowledge Hub for Water

*Scientific knowledge, data
and web tools supporting EU
water policy*

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Abstract

Water policy and management needs to take into account and integrate different water uses and the protection of water resources and aquatic ecosystems. Better policy is based on best scientific and technical knowledge. The availability of scientific knowledge is key to integrate environmental, agricultural and other sectoral policy objectives, as required by the Green Deal through the Zero Pollution and the Farm to Fork Strategy.

The objective of the Knowledge Hub for Water (<https://water.jrc.ec.europa.eu/>) is to provide scientific evidence, data and web tools developed in JRC projects to support EU water policy and its integration with other sectoral policies, such as agriculture, energy, climate, with a focus on environmental and health protection, as required by the EU Green Deal.

Acknowledgements

We thank JRC colleagues and external experts that have contributed to the different projects showed in the Knowledge Hub for Water. Their contribution is also acknowledged by the cited references in the web pages.

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1 Introduction

Water is a key resource for several sectors: agriculture, energy production, domestic supply, industry. Aquatic ecosystems are also home to a rich biodiversity and offer many cultural and recreational opportunities. Water policy and management needs to take into account and integrate different water uses and the protection of water resources and aquatic ecosystems. Better policy are based on best scientific and technical knowledge. The availability of scientific knowledge is key to integrate environmental, agricultural and other sectoral policy objectives, as required by the Green Deal through the Zero Pollution and the Farm to Fork Strategy.

The **objective** of the **Knowledge Hub for Water** (<https://water.jrc.ec.europa.eu/>) is to provide scientific evidence, data and web tools developed in JRC projects to support EU water policy and its integration with other sectoral policies, such as agriculture, energy, climate, with a focus on environmental and health protection, as required by the EU Green Deal.

The vision is to develop a flexible web platform including scientific knowledge and data tools **supporting** both the **water policies and their integration with other sectoral policies**, with a specific focus on the environmental impacts of the agricultural policy, using water as an integrative element. Policy makers and implementers at the EU, national and regional level will find an easy entry point and visualization of relevant scientific information, by using map viewers, dash boards, story maps, and ad hoc synthesis.

The Knowledge Hub for Water showcases relevant outcome of JRC assessments to support the implementation and integration of EU water, agricultural and other sectoral policies. It was built on and it is the continuation of the experience of the Knowledge Hub for Water and Agriculture (Grizzetti et al. 2018; Vigiak et al. 2019; 2021).

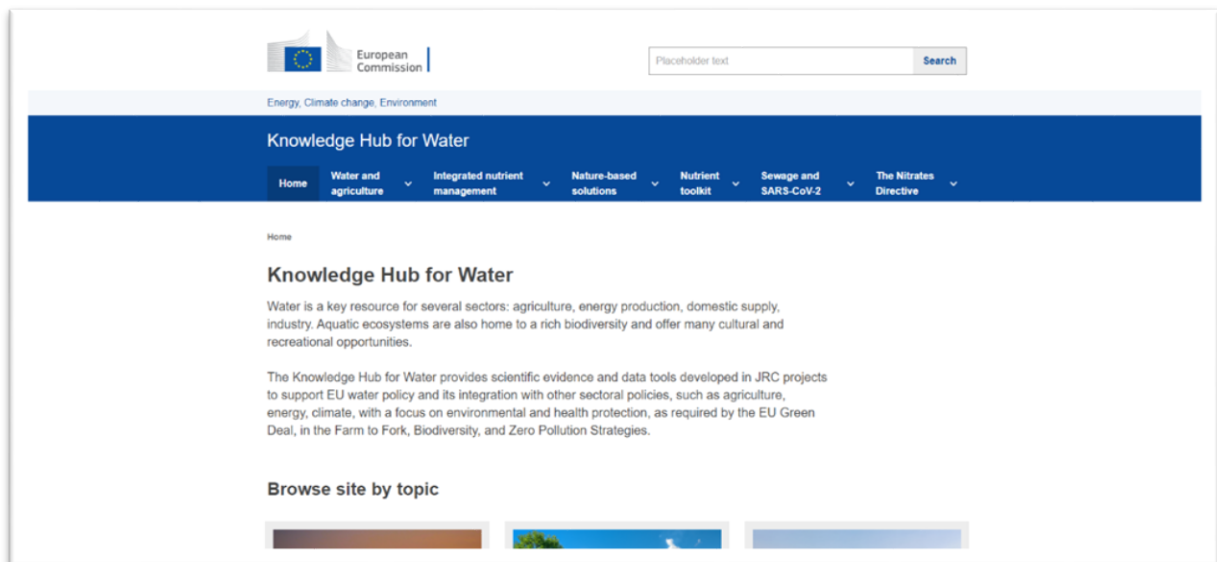
This report describes the main features of the Knowledge Hub for Water, as in December 2022. The web portal is conceived as a flexible space, developed by building blocks, that in future could be further expanded hosting the outcomes of other JRC projects relevant for water policy support.

The Knowledge Hub for Water is called Water Portal in the JRC GOVIS registration system.

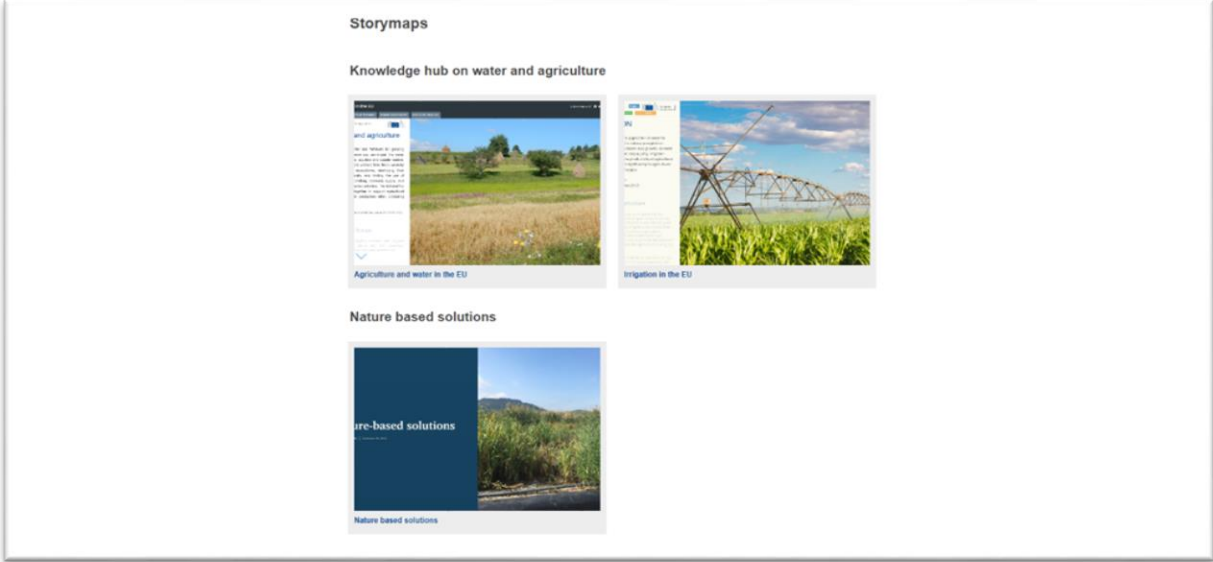
2 Knowledge Hub for Water – Content and structure

The entry page (<https://water.jrc.ec.europa.eu/>) of the Knowledge Hub for Water describes the purpose of the web site and offers the possibility to explore the content by topics. As at December 2022, six topics have been developed:

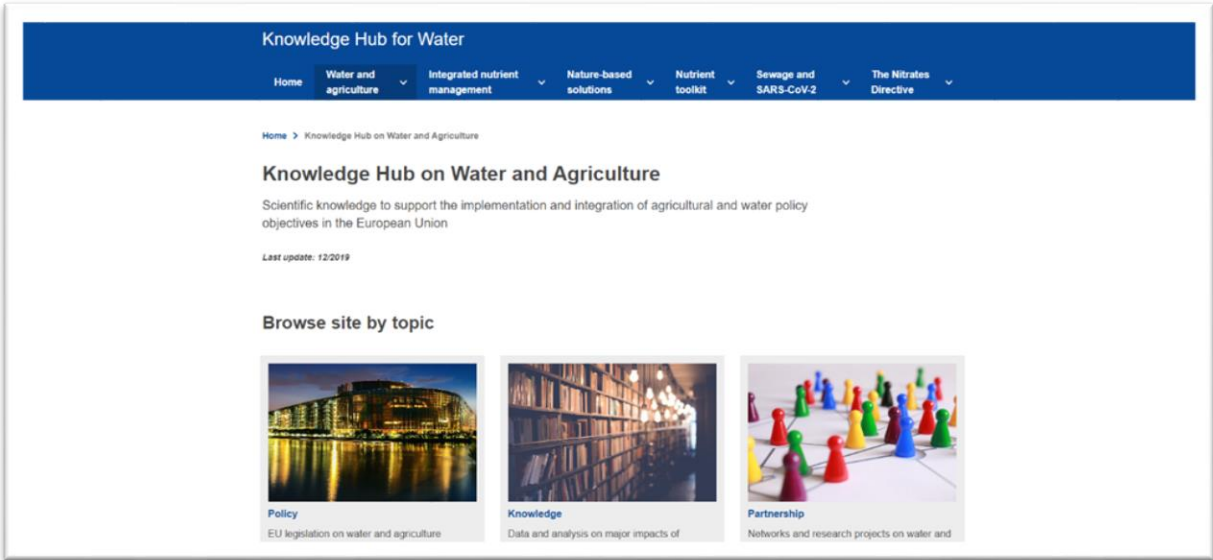
1. **Water and agriculture** – former Knowledge Hub on Water and Agriculture (no updates, only new layout) (see Grizzetti et al. 2018; Vigiak et al. 2019; 2021).
2. **Integrated nutrient management** – results and data of the JRC INMAP study, which will be published in 2023 together with the Commission’s Integrated Nutrient Management Action Plan (INMAP)
3. **Nature-based solutions** – results and data of the JRC Nature-based solutions project.
4. **Nutrient toolkit** – best practice for establishing nutrient concentrations to support good ecological status
5. **EU Sewage Sentinel System for SARS-CoV-2** – European Commission Digital European Exchange Platform for SARS-CoV-2 and its variants
6. **Nitrates Directive viewer** – The Nitrates Directive dashboard by JRC – Reporting Period 7 (2016-2019)



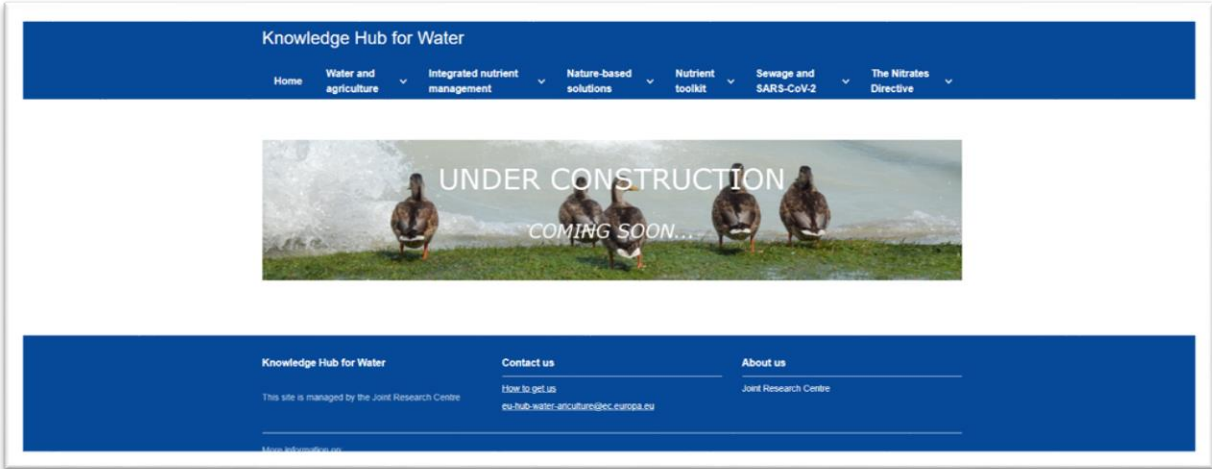
From the entry page the reader can also directly see the **story maps**, which illustrate fertiliser pollution, irrigation and nature-based solutions in Europe in a friendly and visual manner, and access the **Information data tools of the Knowledge Hub on Water and Agriculture**, where dashboards and maps can be browsed interactively. These interactive tools can also be accessed through from the topic pages.



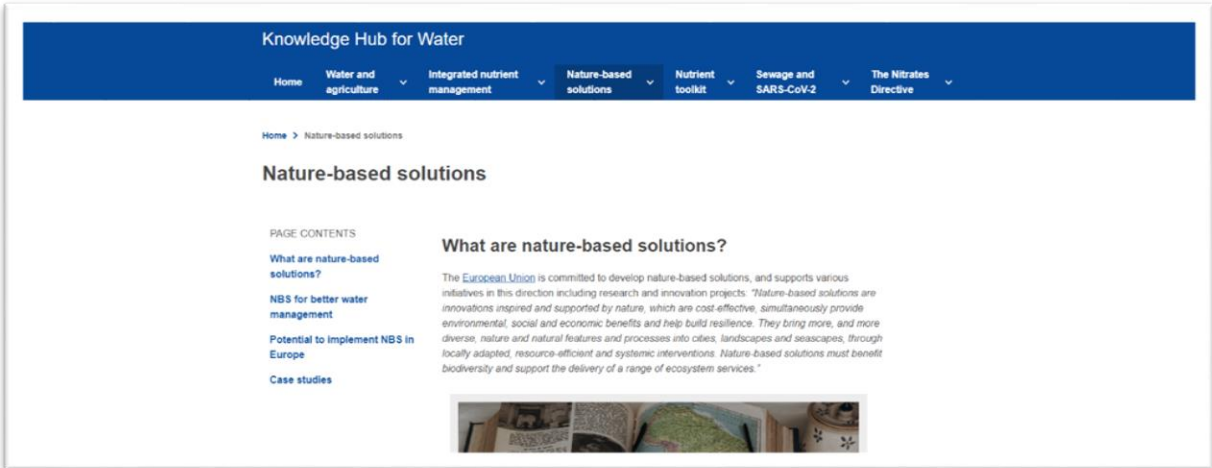
2.1 Water and agriculture



2.2 Integrated nutrient management



2.3 Nature-based solutions



2.4 Nutrient toolkit

The screenshot shows the 'Knowledge Hub for Water' website. The navigation bar includes 'Home', 'Water and agriculture', 'Integrated nutrient management', 'Nature-based solutions', 'Nutrient toolkit', 'Sewage and SARS-CoV-2', and 'The Nitrates Directive'. The breadcrumb trail is 'Home > Nutrient toolkit'. The main heading is 'Best practice guide and Nutrient toolkit'. The text discusses eutrophication and provides a link to 'The Best practice for establishing nutrient concentrations to support good ecological status'. It also mentions that the 'Nutrient toolkit' is available for calculation of boundary concentrations.

2.5 EU Sewage Sentinel System for SARS-CoV-2

The screenshot shows the 'Knowledge Hub for Water' website. The navigation bar is the same as in the previous screenshot. The breadcrumb trail is 'Home > Sewage and SARS-CoV-2'. The main heading is 'Sewage and SARS-CoV-2'. Under 'PAGE CONTENTS', there are two links: 'EU Sewage Sentinel System for SARS-CoV-2' and 'The Digital European Exchange Platform for SARS-CoV-2'. The 'EU Sewage Sentinel System for SARS-CoV-2' section includes a paragraph about wastewater reflecting human settlements and another paragraph about the EC's Recommendation of 17 March 2021. The 'The Digital European Exchange Platform for SARS-CoV-2' section is also listed.

2.6 Nitrates Directive viewer

Knowledge Hub for Water

Home Water and agriculture Integrated nutrient management Nature-based solutions Nutrient toolkit Sewage and SARS-CoV-2 The Nitrates Directive

Home > The Nitrates Directive


The Nitrates Directive

PAGE CONTENTS

- The Nitrates Directive
- Links

The Nitrates Directive

In 1991, the European Commission adopted the Nitrates Directive to protect surface water, groundwater and coastal and transitional areas from pollution with nitrate from agricultural origin. Member States (MS) have to identify Nitrate Vulnerable Zones (NVZ) which are areas that are affected by nitrate pollution or that could be affected if no measures are taken. Action Programmes, including specific measures for minimizing pollution from nitrate, have to be implemented in NVZ. Action Programmes must include specific measures for reducing the pollution at the source, and comprise periods of prohibition of fertilizer application, restrictions for application on sloped soils, and on soaked, frozen, or snow covered soils, restrictions for application near watercourses, limits on the total amount of livestock manure that may be applied to land. Member States have to report progress on implementation every 4 years.

 The Nitrates Directive dashboard by JRC - Reporting Period 7 (2016-2019)

THE NITRATES DIRECTIVE IN A NUTSHELL

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