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How to access groundwater quantitative and chemical status assessments of European groundwater bodies

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EU GREEN WEEK PARTNER EVENTS

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EuroGeoSurveys European Geoscience for Society
The Geological Surveys of Europe

EU GREEN WEEK 27.8.2024, 9 – 12.00

Contents:

- Groundwater, the largest available freshwater ressource, in a global and European perspective
- Brief introduction to groundwater quantitative and chemical status assessment according to EU directives and how to access guidance documents
- How to access groundwater status assessments reported by EU member states via the EEA website and the WISE Freshwater Information System for Europe etc.

Make groundwater visible – the UN WWDR 2022

Groundwater accounts for approximately **99%** of all liquid freshwater on Earth

GROUNDWATER
Making the invisible visible

SHORT SUMMARY

The vast potential of groundwater and the need to manage it sustainably can no longer be overlooked

It is essential that countries commit themselves to developing an adequate and effective framework for groundwater governance

Groundwater data collected with public funds should be freely accessible

https://www.unwater.org/publications/un-world-water-development-report-2022/

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Eionet Portal

https://www.eionet.europa.eu/

Reportnet ETCs Abo

Eionet

European Environment Information and Observation Network

What is Eionet?

The European Environment Information and Observation Network (Eionet) is a partnership network of the European Environment Agency (EEA) and its 38 member and cooperating countries. EEA and Eionet gather and develop data, knowledge, and advice to policy makers about Europe's environment.

Overall, Eionet consists of the EEA and circa 400 national institutions from 38 countries, with expertise in environmental issues, and eight centres of thematic expertise contracted by the EEA, called European Topic Centres (ETCs).

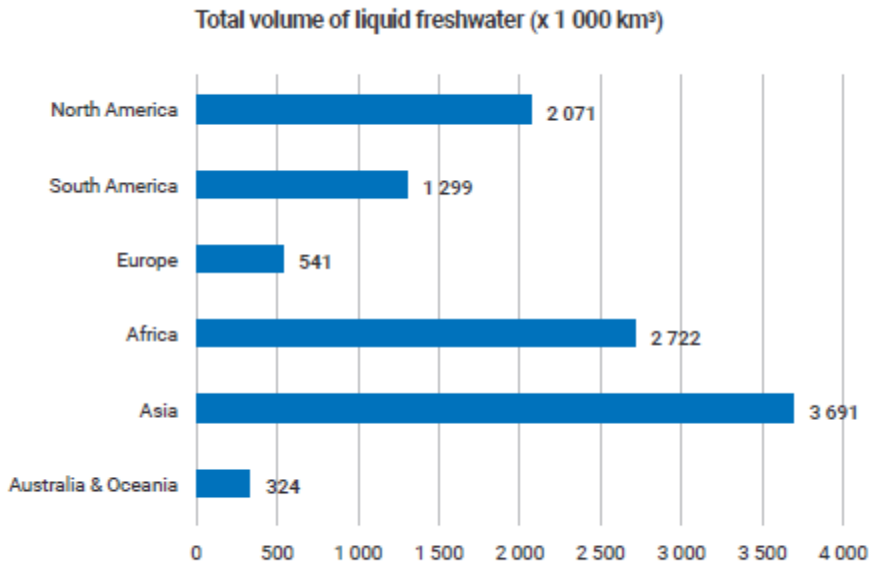
The EEA is responsible for developing Eionet and coordinating its activities together with National Focal Points (NFPs) in the countries. The NFPs are the country institutions appointed to serve as the primary link between the EEA and the country. NFPs facilitate and coordinate networks of national experts involved in national activities related to the EEA work programme.

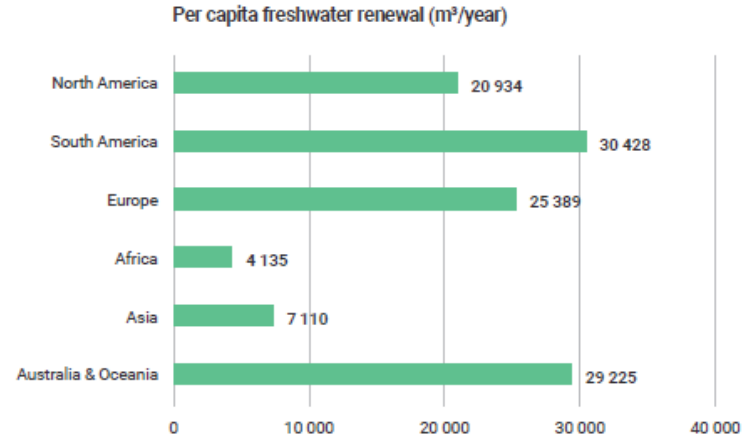
Eionet for the future

The EEA-Eionet Strategy for 2021-2030 gives the direction for EEA and Eionet in this decade. The joint task of EEA and Eionet is to give EU policy makers and the public the best available knowledge to reach the targets on environment and sustainability.

https://www.eea.europa.eu/en/about/working-practices/docs-register/eea-eionet-strategy-2021-2030

Available freshwater on the continents

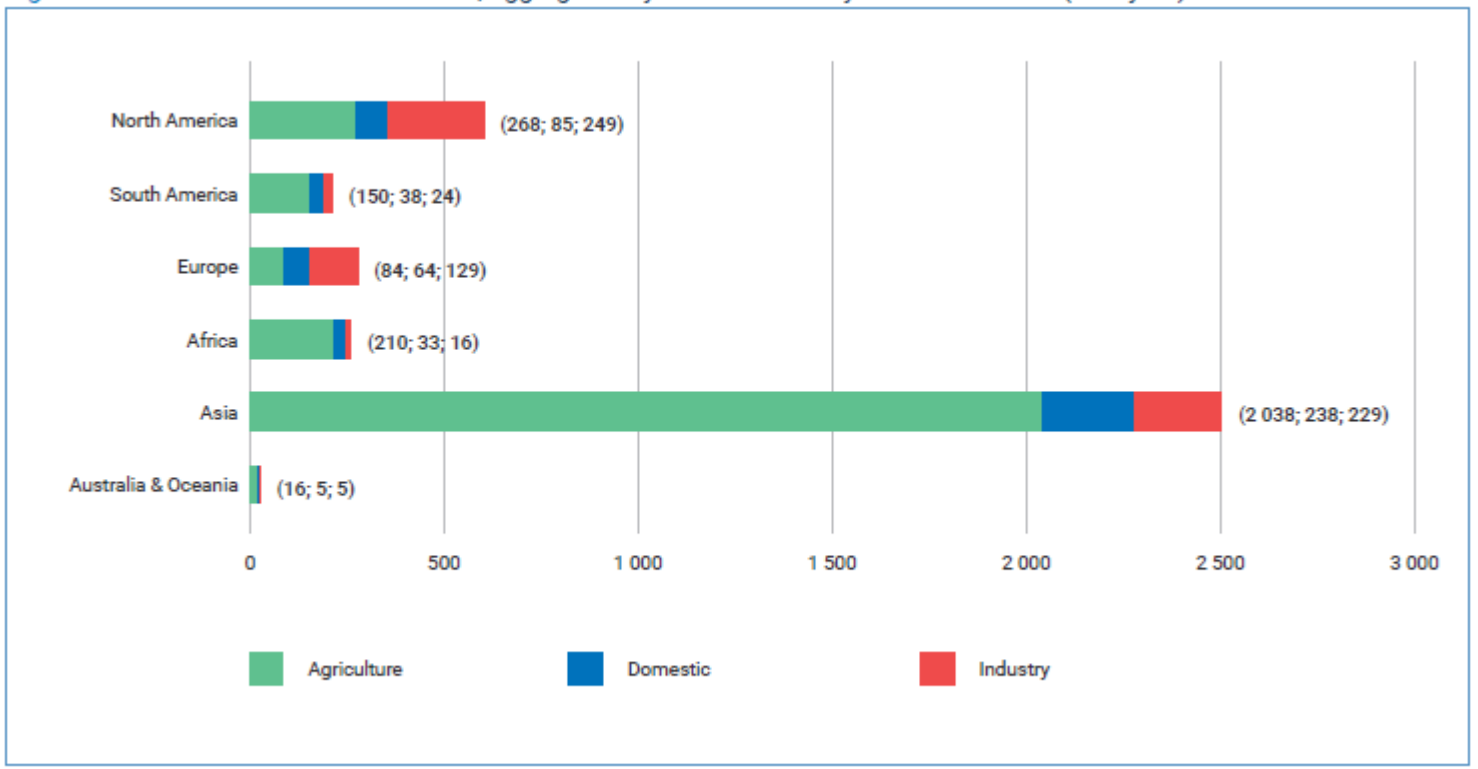




[5] Source: https://www.unwater.org/publications/un-world-water-development-report-2022

Freshwater use by agriculture, households and industry

Figure 3 Freshwater withdrawal in 2017, aggregated by continent and by water sector use (km³/year)



Source: Based on data from Aquastat (n.d.).

Source: https://www.unwater.org/publications/un-world-water-development-report-2022/

Groundwater and UN SDGs

Although only one SDG target makes explicit reference to groundwater in its wording (Target 6.6), no less than 53 targets appear to be interlinked with groundwater

Source: https://www.unwater.org/publications/un-world-water-development-report-2022/

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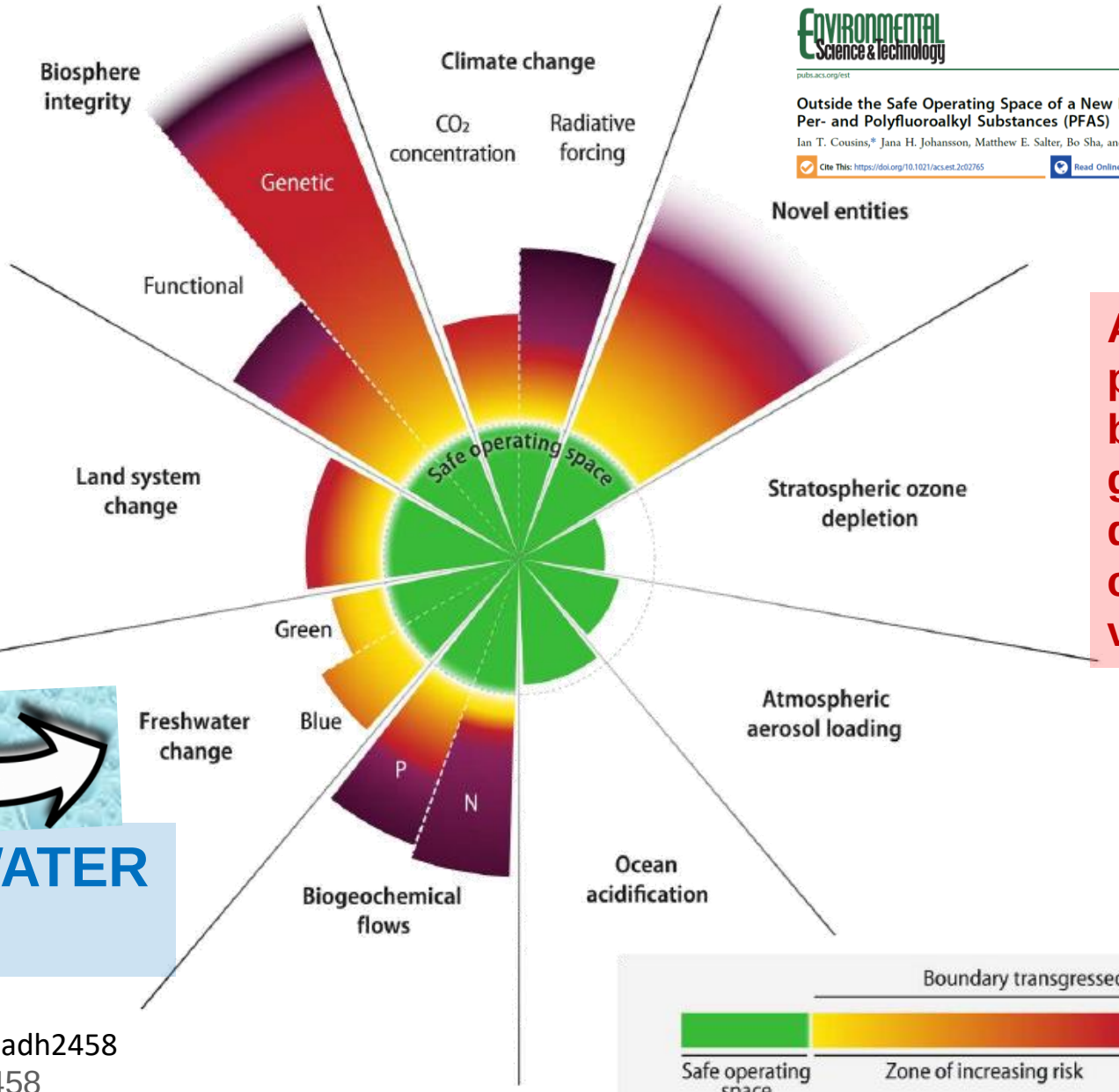
Earth beyond six of nine Planetary Boundaries



FRESHWATER change

All the transgressed planetary boundaries impact groundwater quantitative and chemical status or vice versa

Richardson et al., 2023. *Sci. Adv.* **9**, eadh2458
https://doi.org/10.1126/sciadv.adh2458

Groundwater status assessments in EU

- The European Union (EU) has established several requirements for its member states to ensure the good status of water bodies under the **Water Framework Directive (WFD)** and the **Groundwater Directive (GWD)**, which were adopted in 2000 and 2006, respectively.

Link to the Water Framework Directive in all EU languages

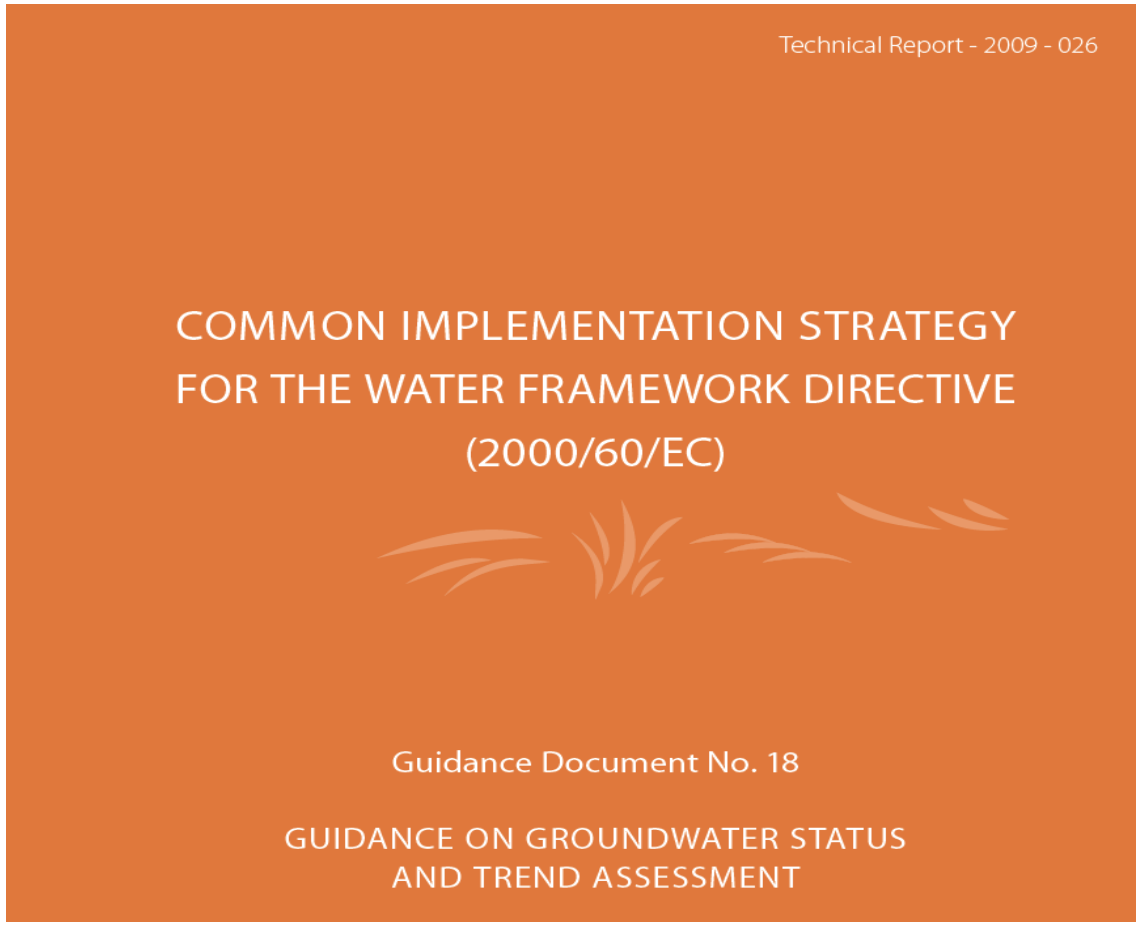
Link to the Groundwater Directive in all EU languages

Link to CIS Working Group Groundwater documents on CIRCABC

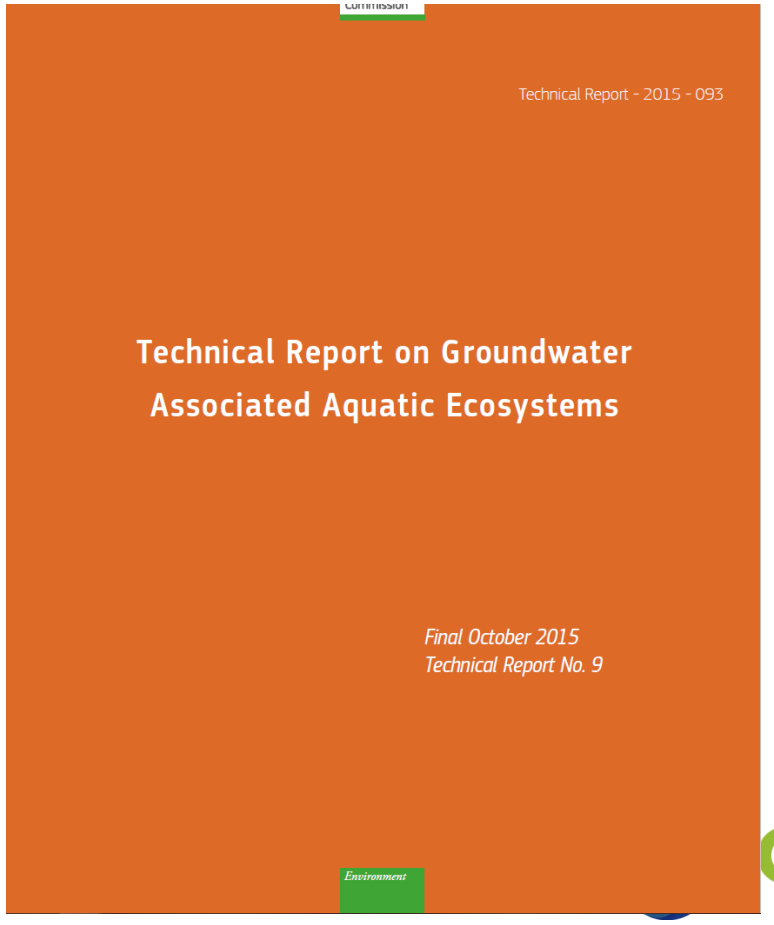
Exampels of guidance and technical reports regarding groundwater status assessments:

link to: CIS guidance documents

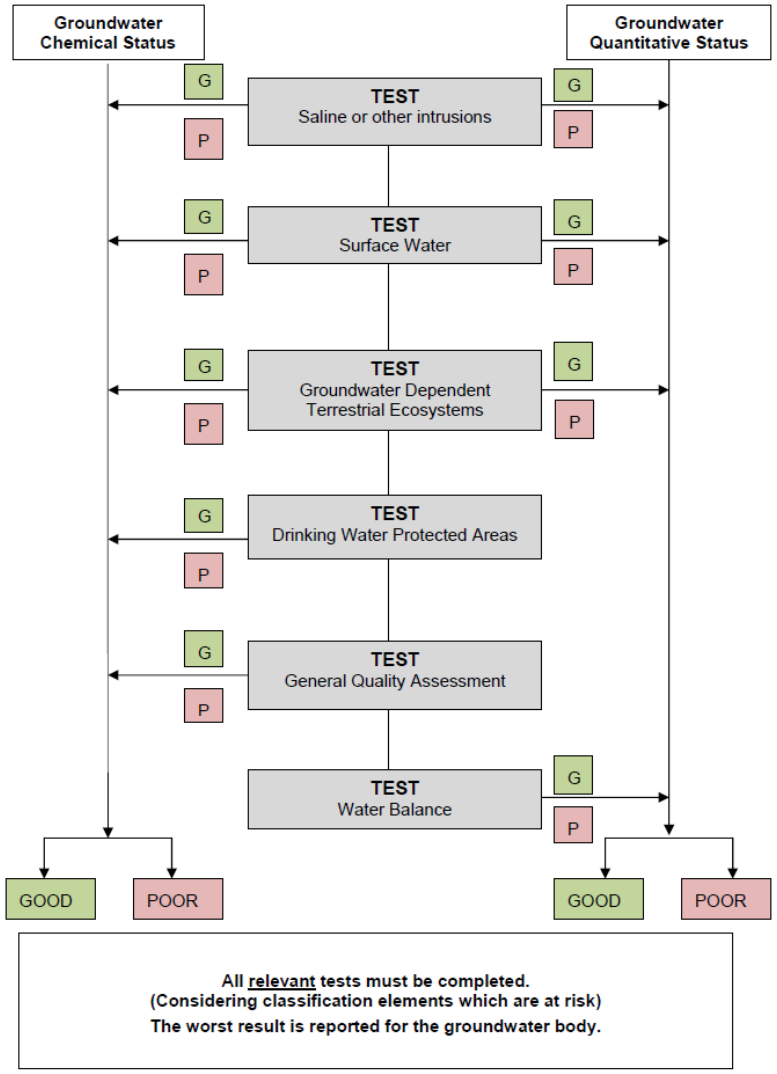
Link to guidance no. 18 on CIRCABC



Link to technical report no. 9, 2015 on CIRCABC



EU MS have to conduct groundwater quantitative and chemical status assessment in three RBMPs to ultimately ensure good status in 2027 at the latest



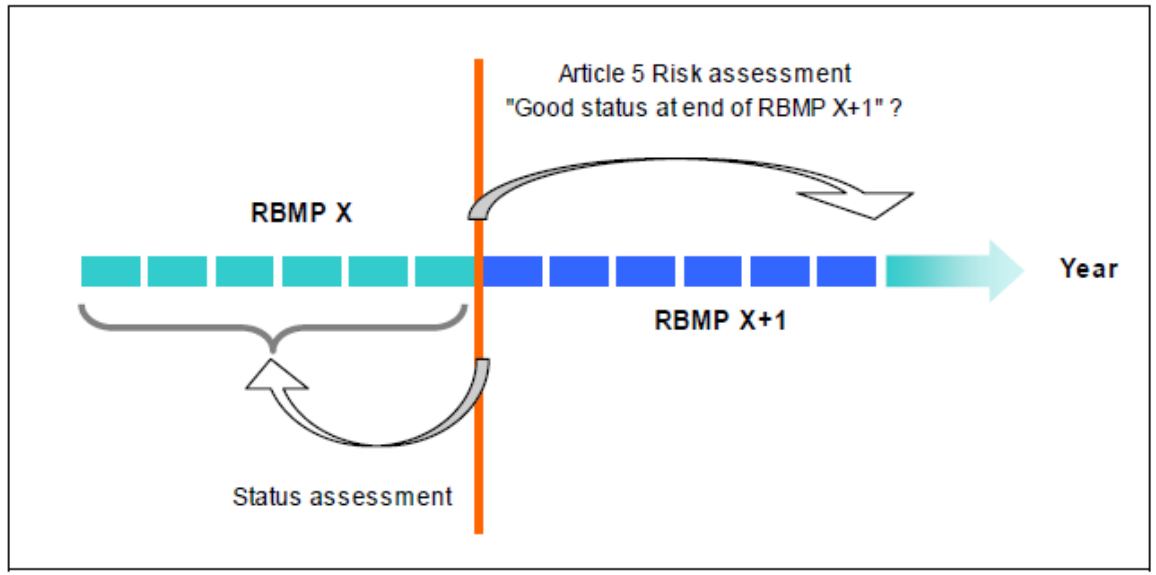
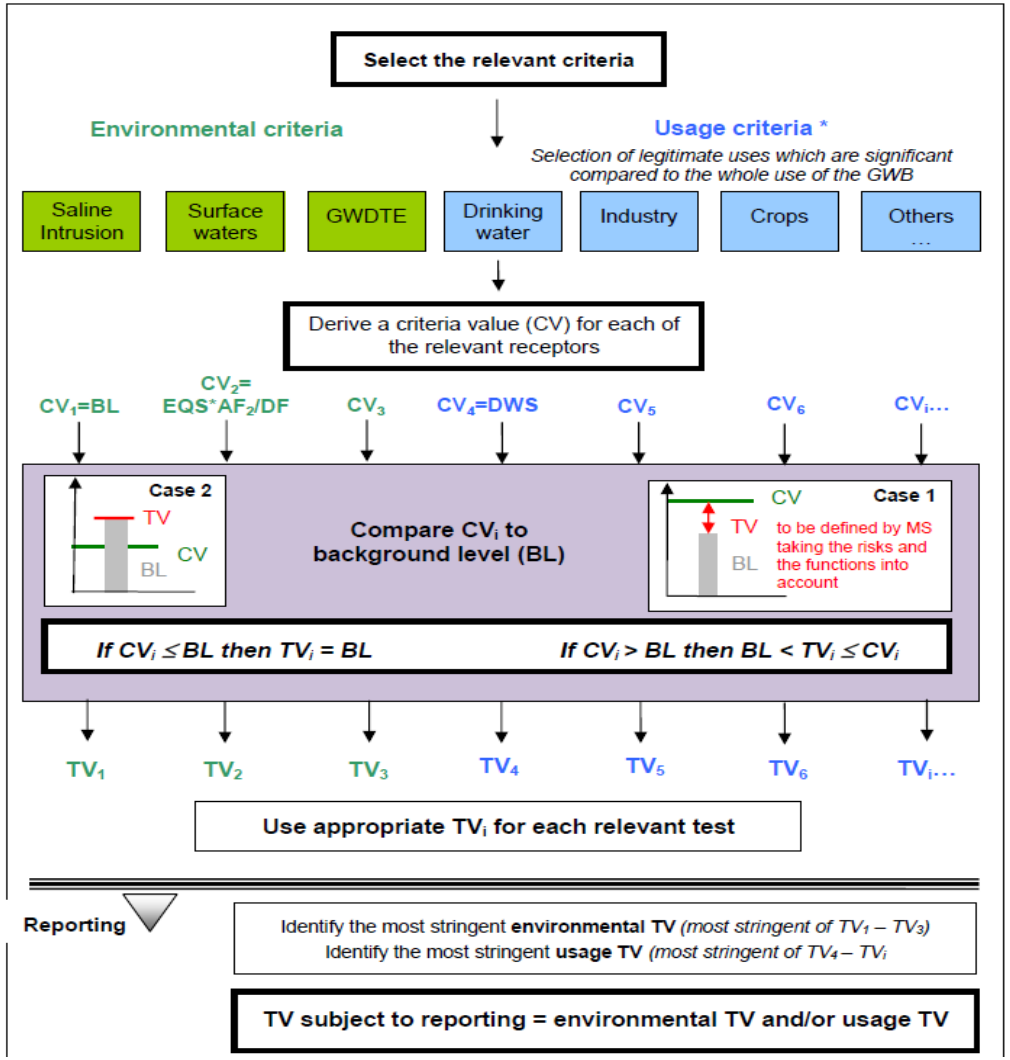


Figure 2: Risk assessment looks into the future whereas status assessment looks back on the performance.

Link to guidance no. 18 on CIRCABC

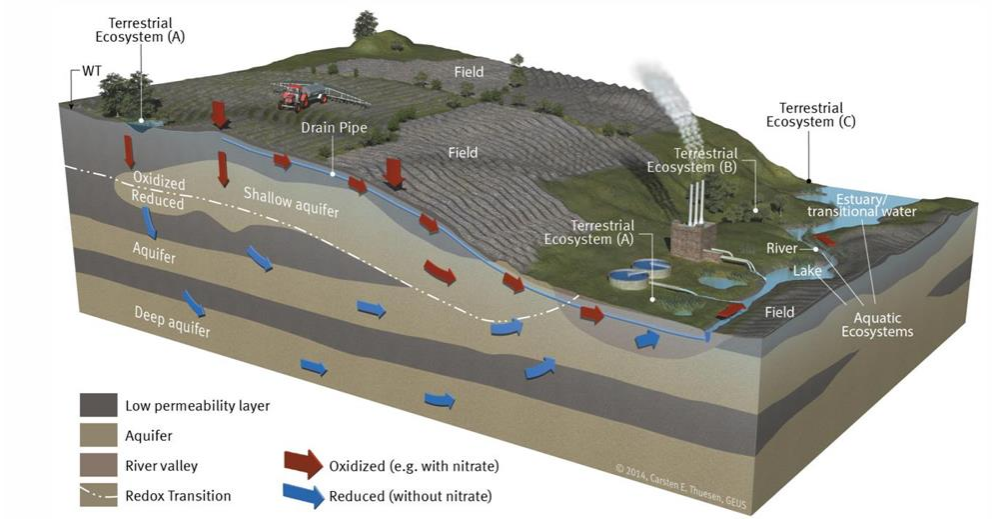
Status assessments have to be performed based on requirements of environmental (ecosystems etc.) and usage criteria (legitimate uses: drinking water etc.)



Link to guidance no. 18 on CIRCABC

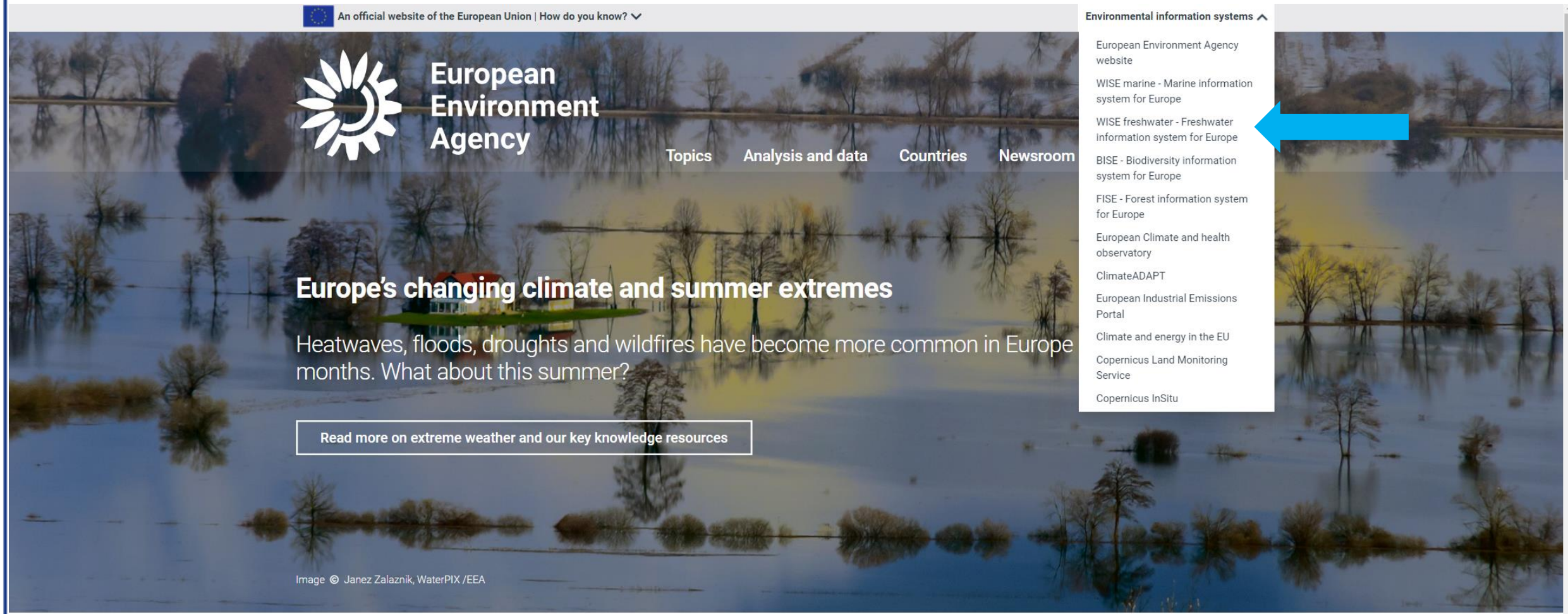
Environmental criteria:

Groundwater-dependent terrestrial and associated aquatic ecosystems



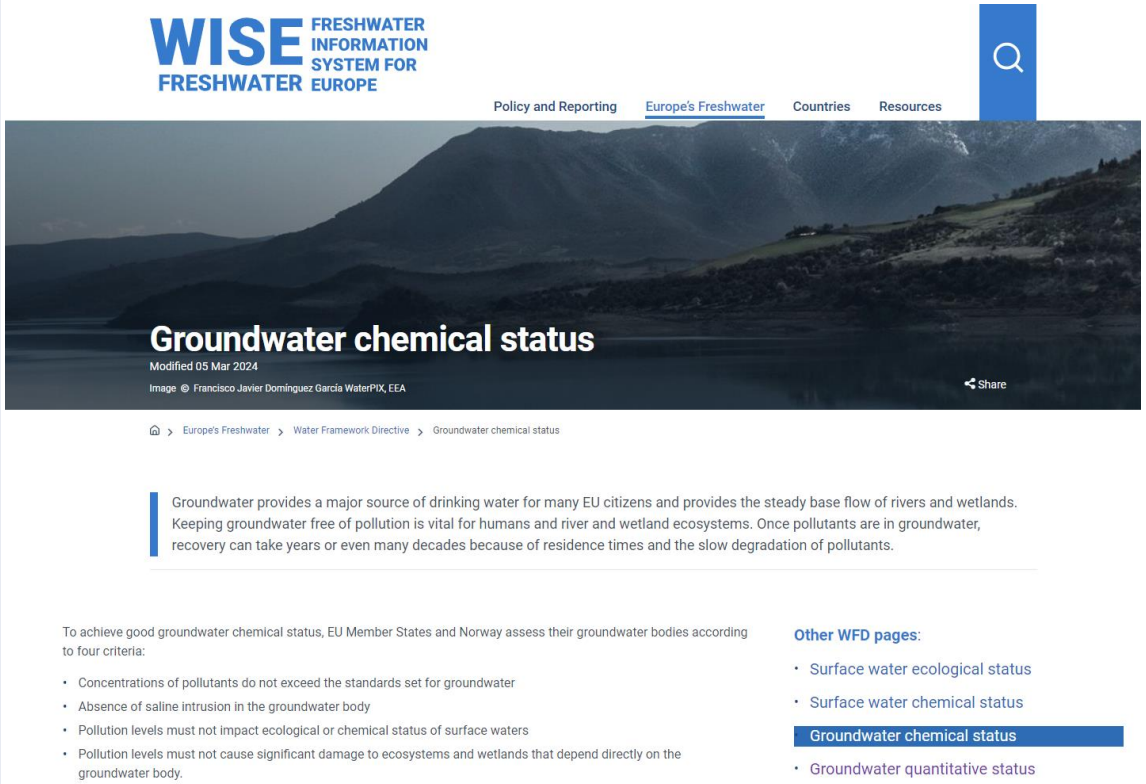
Link to technical report no. 9, 2015 on CIRCABC

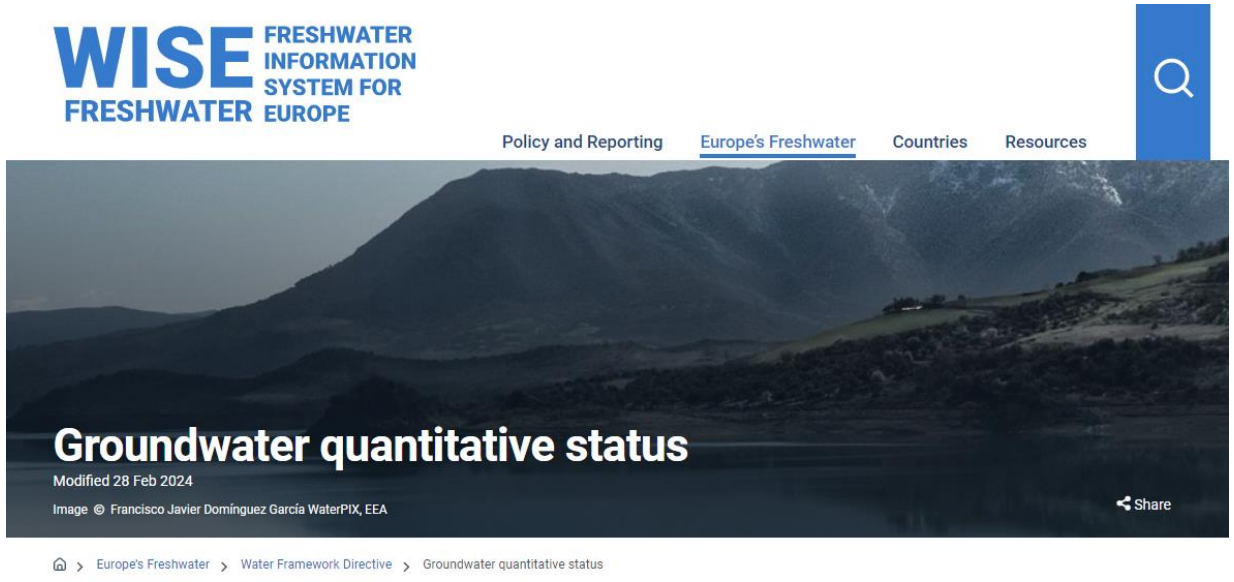
Access to groundwater status assessments by European member states via EEA and WISE Freshwater websites:



WISE Freshwater / EEA information platforms

https://water.europa.eu/freshwater





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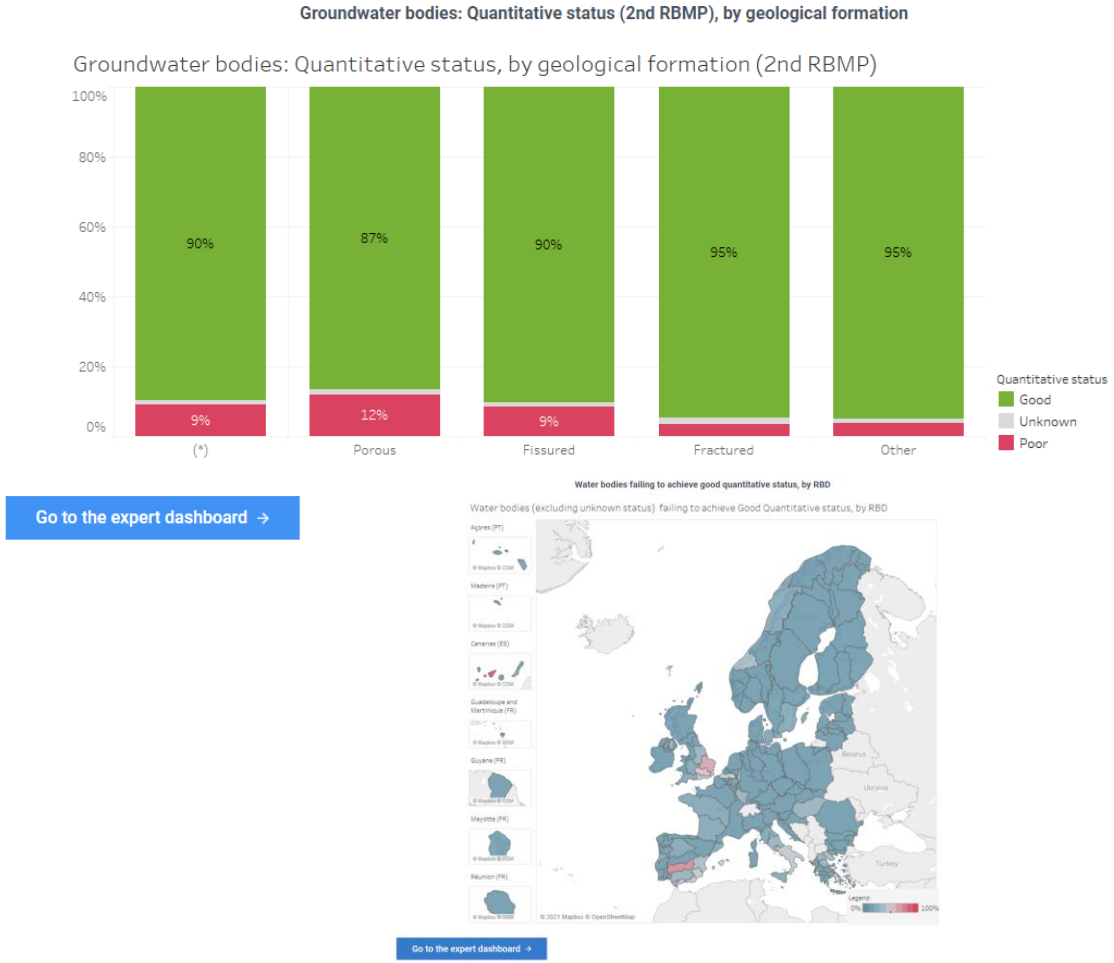
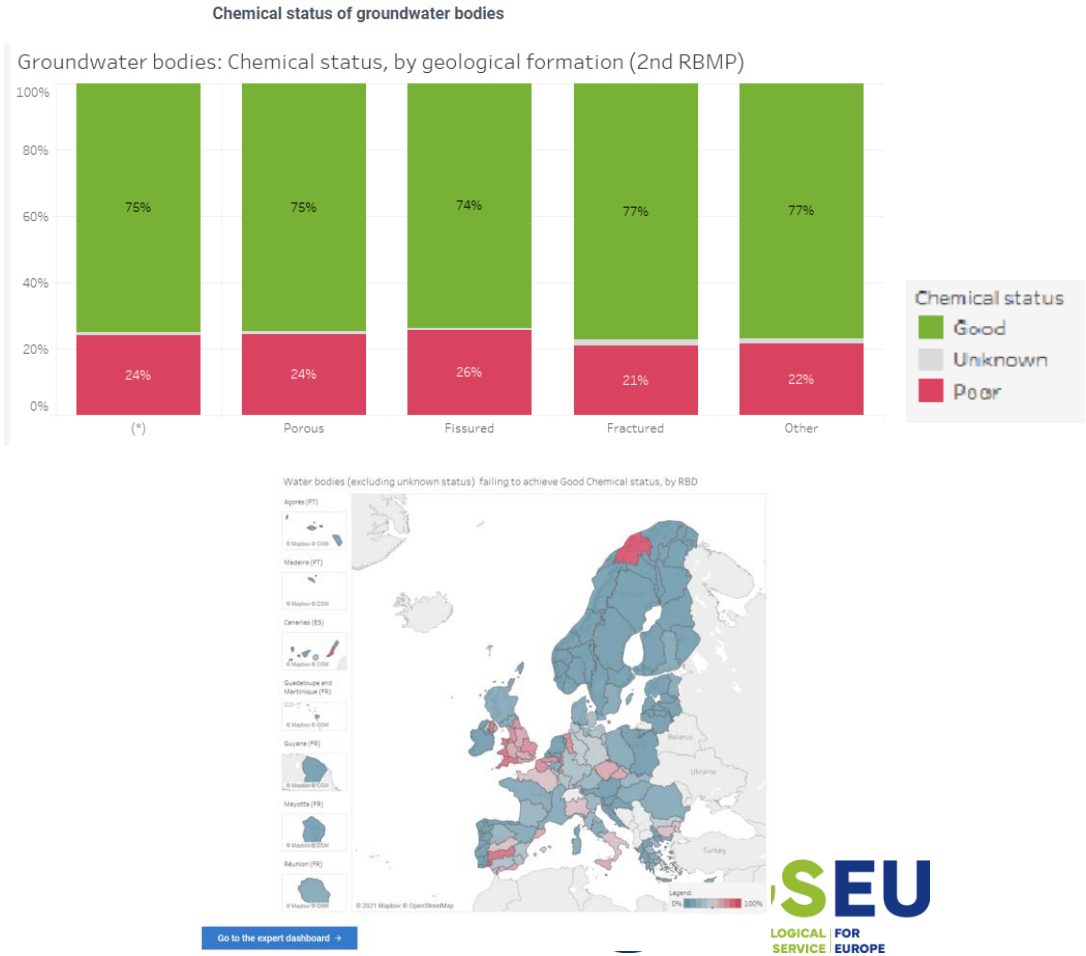
Groundwater quantity and quality (chemical) status by geological formation/porosity type



https://water.europa.eu/freshwater/europe-freshwater/water-framework-directive/groundwater-quantitative-status

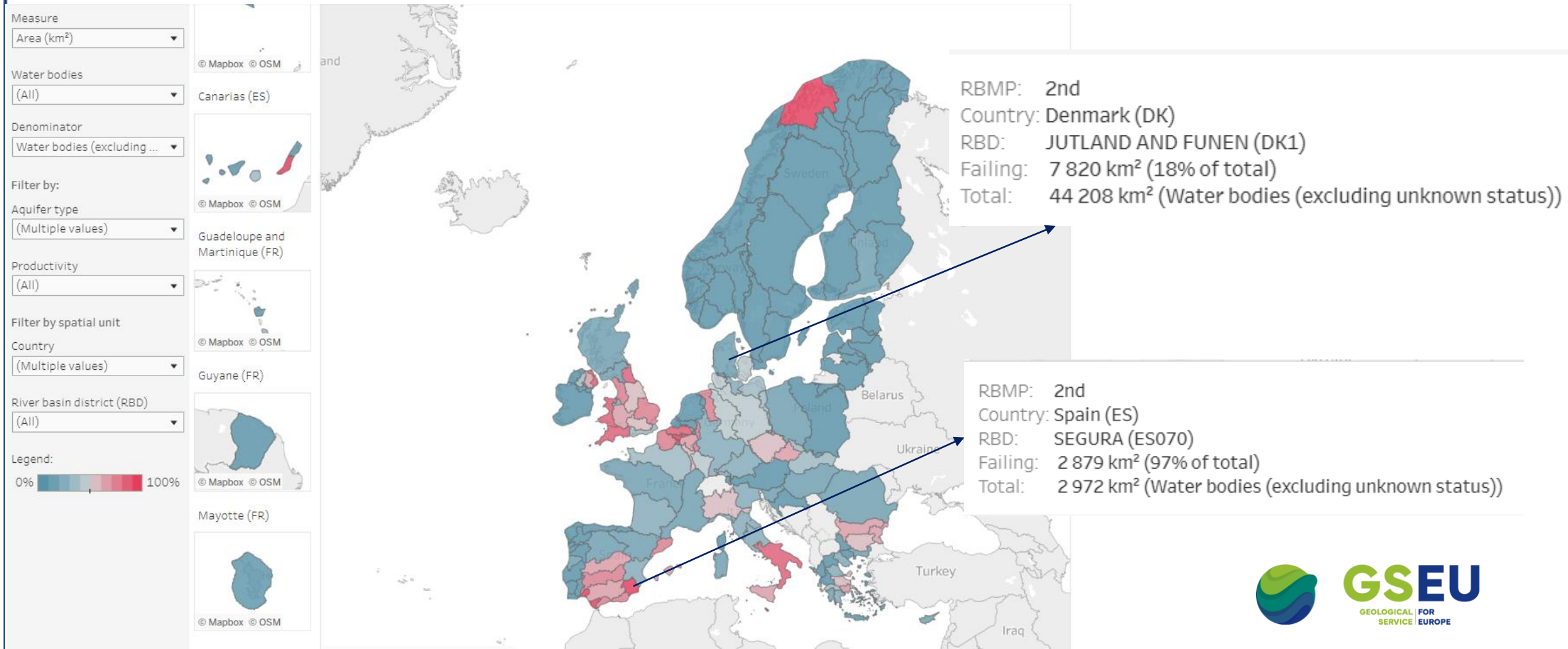


https://water.europa.eu/freshwater/europe-freshwater/water-framework-directive/groundwater-chemical-status

Groundwater bodies failing to achieve good chemical status

https://water.europa.eu/freshwater/resources/metadata/dashboards/quantitative-status/groundwater-bodies-proportion-failing-to-achieve-good-status-by-rbd-map

European Environment Agency



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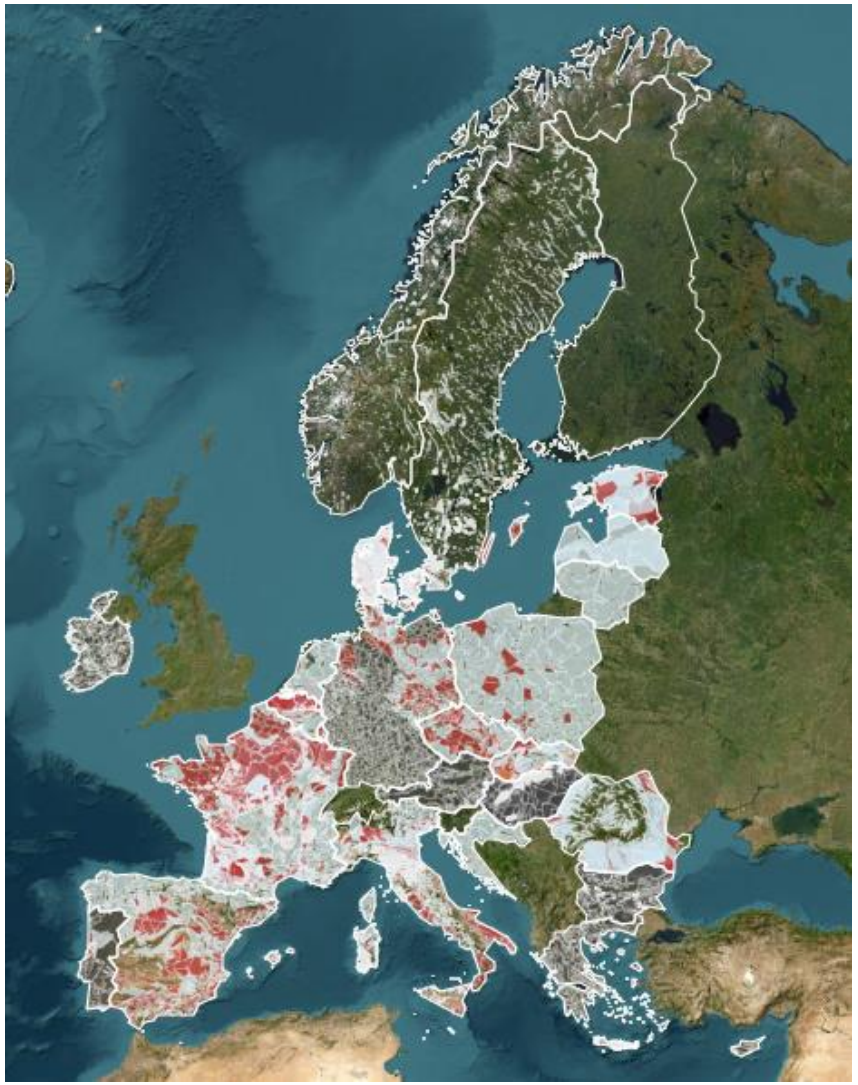
Europeanwaters.eu: New initiative by European journalists & media focusing on increasing the awareness about and discussing the status of European groundwater as reported by EU member states - https://europeanwaters.eu/



https://journalismarena.eu/

https://www.datadista.com/

Arena for journalism in Europe

Arena for Journalism in Europe coordinated this project and wrote the European story.

Journalists: Zeynep Sentek, Jelena Prtoric, Sarah Pilz

Design and web: Dominik Heusel, Benedikt Hebeisen

DATADISTA

Datadista in Spain collected, analysed and prepared the European data for each national partner, and designed the European map.

Journalists: Ana Tudela, Antonio Delgado

Project partners

Le Monde

Le Monde, France

Journalists: Raphaëlle Aubert, Léa Sanchez

Designers: Léa Girardot, Elsa Delmas

dS De Standaard

De Standaard, Belgium

Journalists: Ine Renson, Maxie Eckert

investico onderzoeksjournalisten

Investico, the Netherlands

Journalist: Marieke Rotman

FACTA

Facta, Italy

Journalists: Elisabetta Tola, Marco Boscolo

Information

Dagbladet Information, Denmark

Journalist: Marie Saehl

REPORTERS UNITED

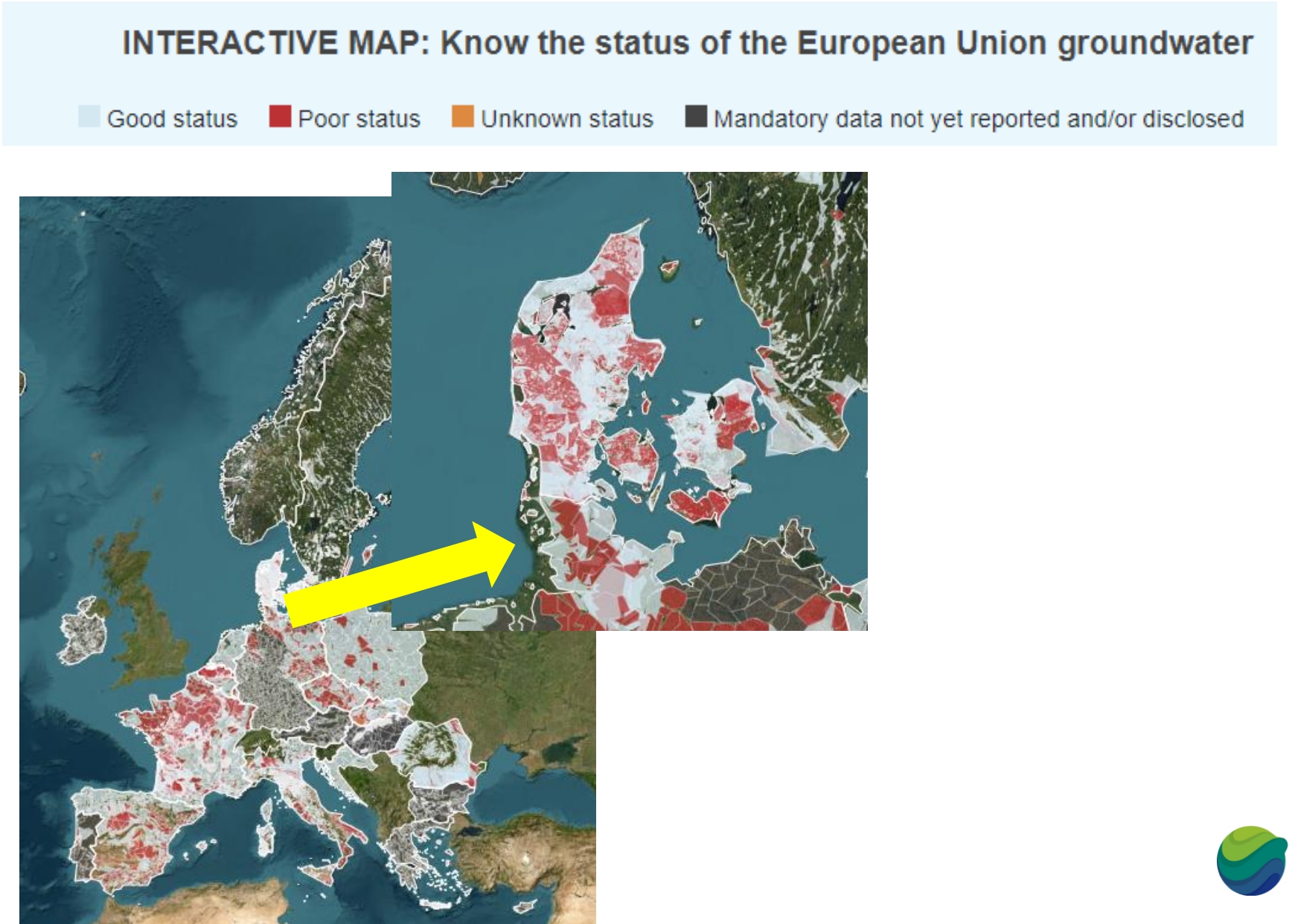
Reporters United, Greece

Journalists: Myrto Boutsi, Eurydice Bersi

SERVICE | EUROPE

https://europeanwaters.eu/

www.europeanwaters.eu



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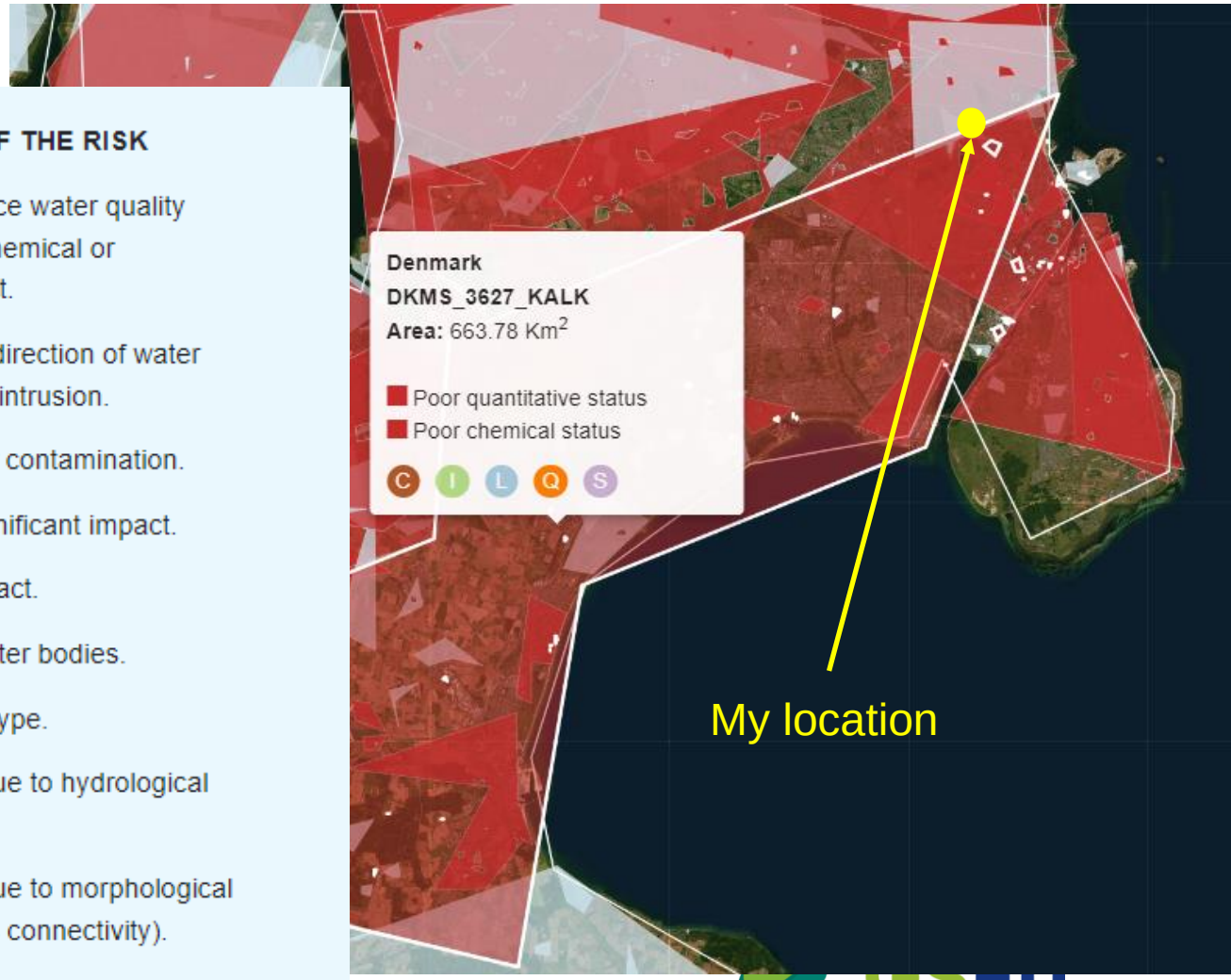
Examples of issues causing poor status

IMPACT DESCRIPTION OF THE RISK	
L	Groundwater level decrease (aquifer depth, water volume) due to extractions.
N	Nutrient pollution, mainly from fertilizers and animal waste, above the legal limit (50 mg/l) or close to the limit with an upward trend.
C	Chemical pollution other than nutrients (mainly pesticides but also metals, hydrocarbons, etc.) above the legal limit or close and with an upward trend.
E	Impact on terrestrial ecosystems dependent on groundwater.
M	Microbiological contamination.
O	Organic contamination.

IMPACT DESCRIPTION OF THE RISK	
Q	Decrease in surface water quality associated with chemical or quantitative impact.
I	Alterations in the direction of water flow due to saline intrusion.
S	Saline intrusion or contamination.
T	Other types of significant impact.
N	No significant impact.
A	Acidification of water bodies.
U	Unknown impact type.
H	Altered habitats due to hydrological changes.
Y	Altered habitats due to morphological changes (includes connectivity).



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