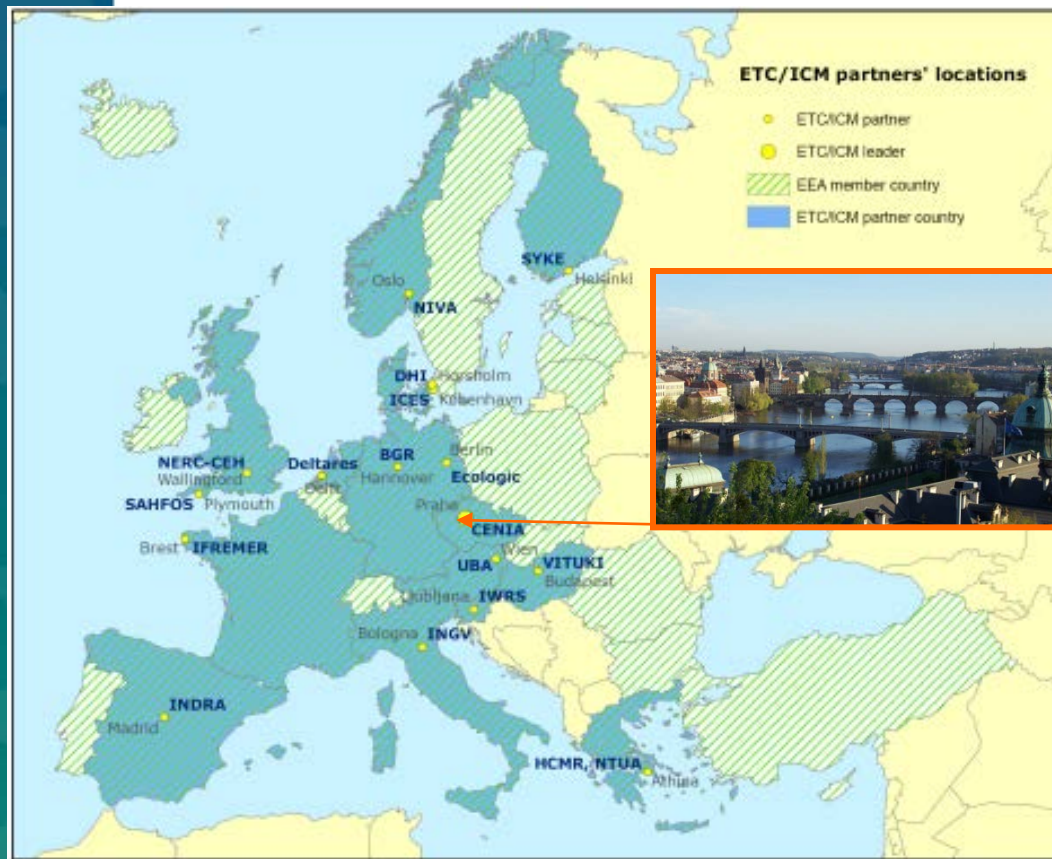


The role of the European Topic Centre on Inland, Coastal and Marine Waters (ETC/ICM)

Needs for comparable groundwater body geo-data
at European level

Dr. Anita Künitzer
Leader of ETC/ICM

European Topic Centre on inland, coastal and marine waters (ETC/ICM)



Partner	Freshwater	Marine/Maritime
BGR	x	
CENIA (lead)	x	
Deltares	x	x
DHI	x	x
Ecologic	x	x
HCMR		x
ICES		x
IFREMER		x
Indra	x	x
INGV		x
IWRS	x	x
NERC-CEH	x	
NIVA	x	x
NTUA	x	
SAHFOS		x
SYKE		x
UBA	x	
VITUKI	x	
Total: 18	Total: 12	Total: 12

<http://water.eionet.europa.eu/>

Activities of ETC/ICM

- **Framework Partnership Contacts of CENIA with EEA 2007-2010 and 2011-2013.**
- **To support the work of EEA in the water area on data handling, indicators and assessments:**
 - Annual SoE data collections from 38 EEA countries on water quantity and water quality of rivers, lakes, groundwater, transitional/coastal/marine waters, emissions to water – publication of datasets in waterbase on EEA website
 - Water Directive data handling for EU-27 on BWD, UWWTD, support to other Water Directives
 - Annual update of EEA core set indicators and WISE interactive maps, both on the EEA website
 - Contribution to EEA reports with assessments and methodological developments (e.g. Water 2012 Report, Blue print on water, Climate change impacts report, Coastal Report))



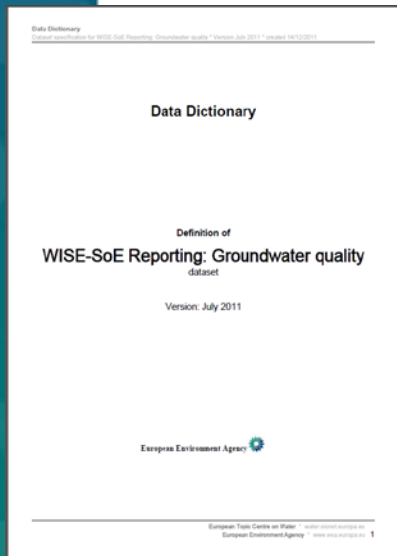
Data collection on groundwater quality



EEA member and collaborating countries



Annual SoE data request on groundwater



- Chemical quality data on the concentrations of **Nutrients** and general physico-chemical determinands (especially Nitrate, Nitrite, Ammonium and Dissolved Oxygen)
- Chemical quality data on the concentrations of **hazardous substances** and other chemical determinands in groundwater
- Any occurrences of **saltwater intrusion** caused by groundwater overexploitation
- Attribute data referring to geographical data sets of **groundwater bodies**

Quality assured database published in Waterbase on the EEA website

Waterbase - Groundwater

Topics: [Water](#)

Waterbase is the generic name given to the EEA's databases on the status and quality of Europe's rivers, lakes, groundwater bodies and transitional, coastal and marine waters, and on the quantity of Europe's water resources


This is the latest published version. [See older versions.](#)

European data set

Waterbase - Groundwater (4 tables)

Dataset contains data selected from reporting of member and collaborating countries on chemical quality of groundwater, characteristics of groundwater bodies and sampling sites. Reported data have been assessed and processed by the ETC-Water and the EEA. Disaggregated records were annually aggregated by groundwater body, substance and year, and statistic value calculated. Results of quality assessment have been incorporated into the individual data tables.

[+] [Show table definition](#)

-  [Waterbase_Groundwater_v11_csv.zip](#) (ZIP archive)
6.57 MB [Download file](#)
-  [Waterbase_Groundwater_v11_mdb.zip](#) (ZIP archive)
11.72 MB [Download file](#)

Additional information

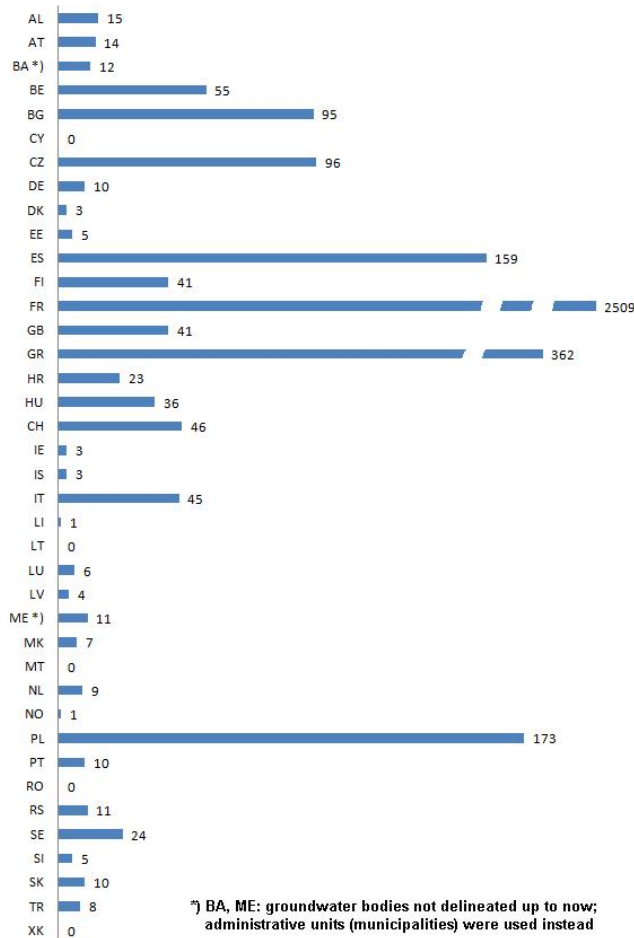
Code lists

Lists and description of codes of selected fields present in the Waterbase-Groundwater data tables. Table "[Drinking water threshold](#)" is included.

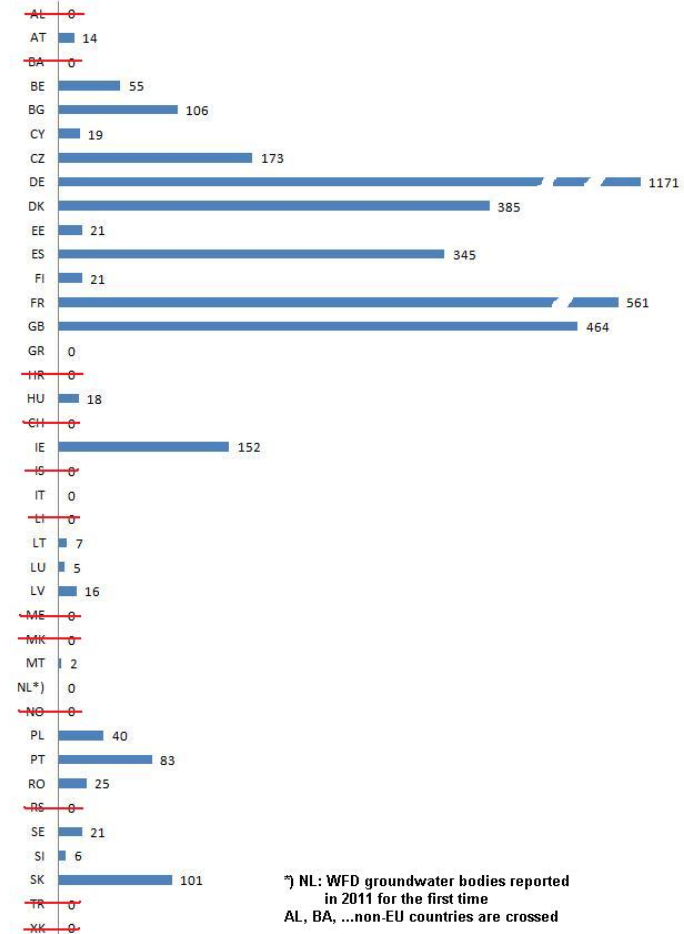


Groundwater bodies reported under Eionet (SoE) and WFD

Number of EIONET groundwater bodies per country



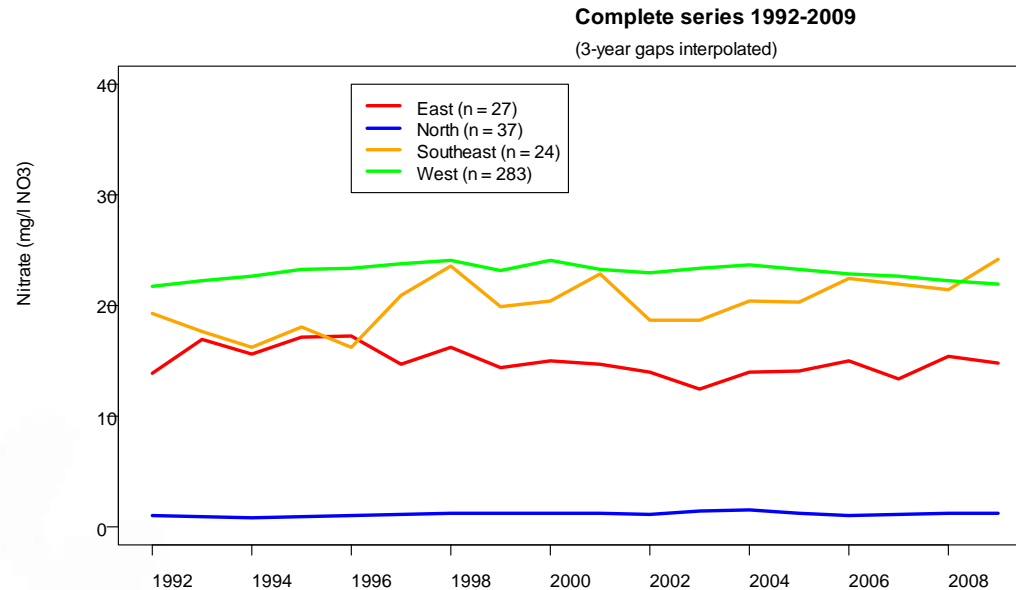
Number of WFD Art.5 groundwater bodies per country



Indicators on groundwater quality

CSI020: Nutrients in freshwater

Are nitrate concentrations in our groundwater decreasing?



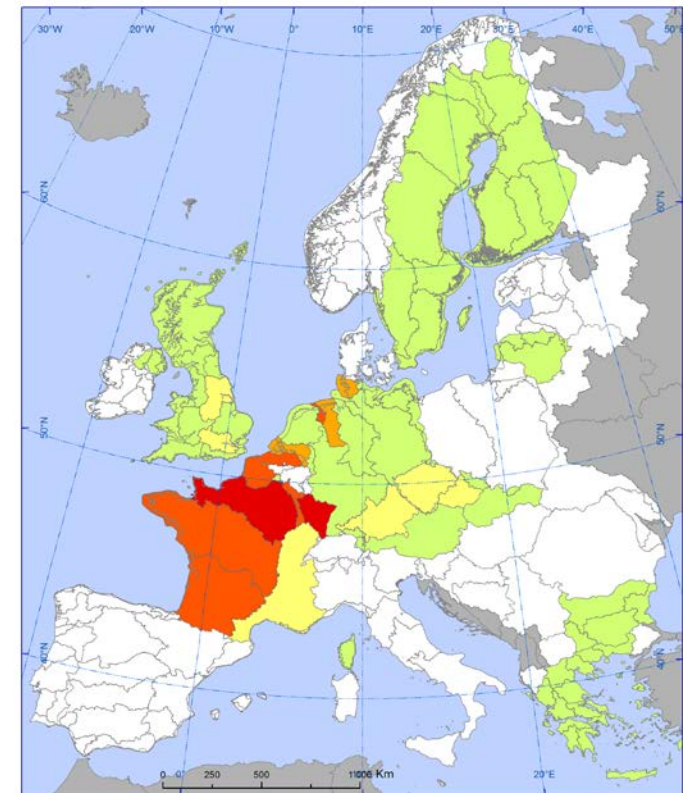
- **Fig. 2: Nitrate concentrations in groundwater between 1992 and 2009 in different geographical regions of Europe.**
- **Note:** The data series per region are calculated as the average of the annual mean for groundwater bodies (GWBs) in the region. Only complete series after inter/extrapolation are included (see indicator specification). The number of groundwater bodies included per geographical region is given in parentheses. The South region is not shown, due to few data (4 GWBs); The nitrate concentration here decreased from about 20 to 11 mg/l over the period.
- **Data source:** WISE-SoE Groundwater (version 11)

Agri-Environmental Indicator AEI 27.2 Water Quality – Pesticides in freshwater

Figure: Percentage of groundwater bodies above the regulatory threshold due to pesticides by river basin district.

Data source: WISE-SoE Groundwater

Several countries in Europe report that groundwater has levels of pesticides that exceed regulatory levels. Across this European dataset, about 8 % of groundwater bodies reported exceed the levels for one or more pesticides. Atrazine is the pesticide most frequently detected above the regulatory level throughout Europe. Groundwater at risk appears to be located in areas used intensively for agriculture.

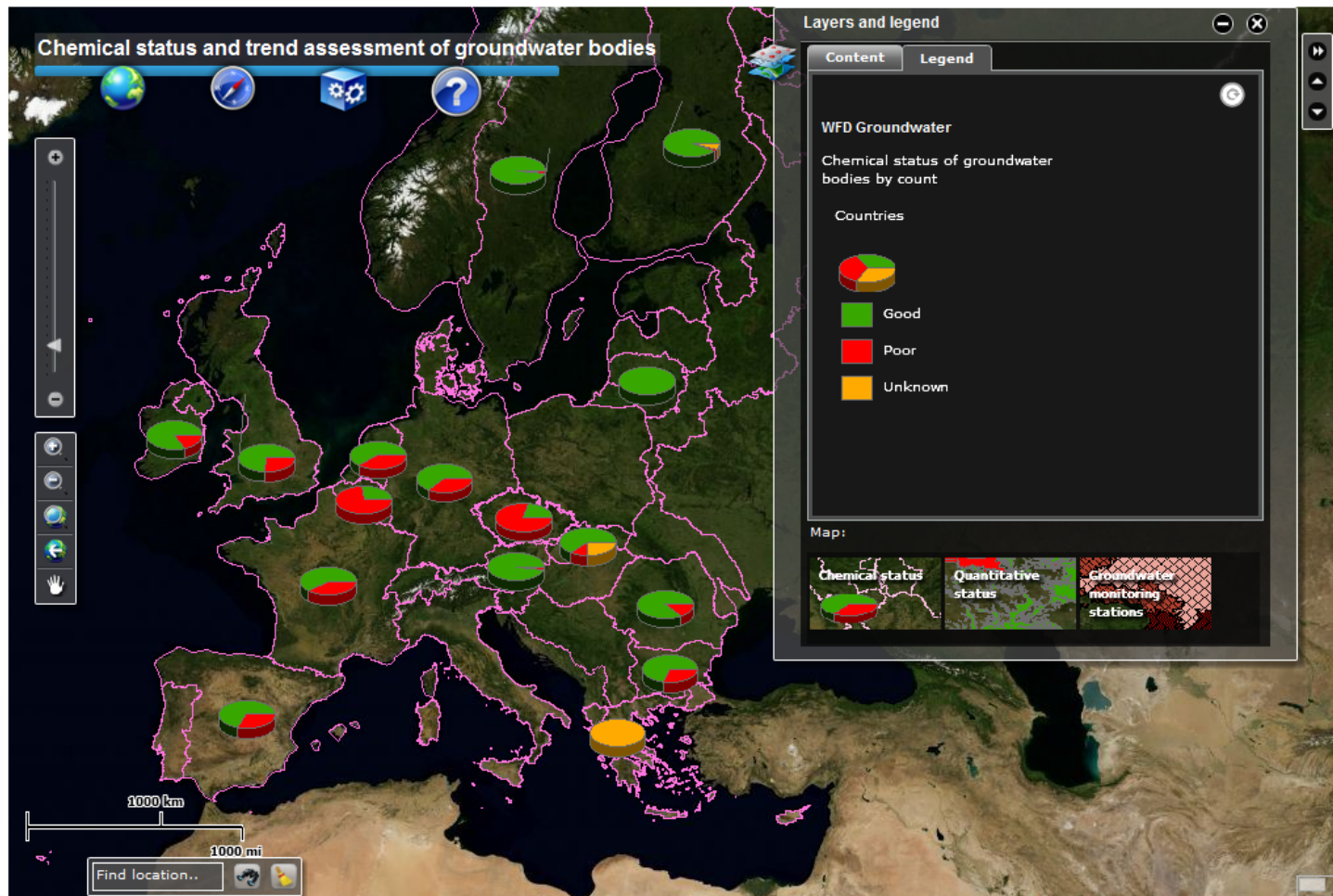


Maps on groundwater quality



WFD viewer: Groundwater chemical status European overview by RBD

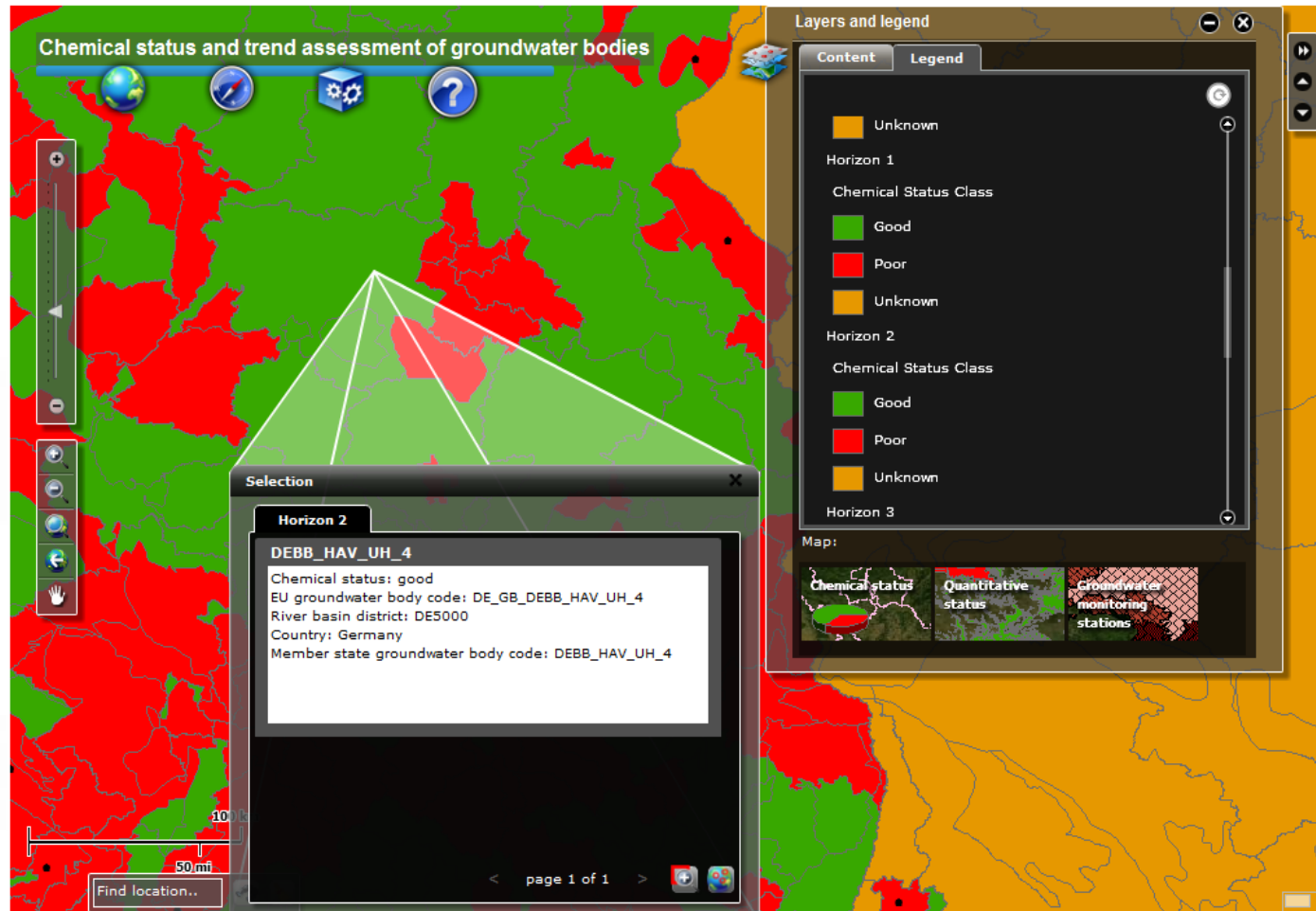
1st draft of WFD ground water viewer



WFD viewer: Groundwater chemical status

Groundwater bodies by horizon

1st draft of WFD ground water viewer



Assessments on groundwater quality

WFD chemical status

ETC/ICM background document on groundwater chemical status by Vit Kodes (for Europe)

- There are only two countries with all groundwater bodies in good chemical status in EU.
- EU Member States have approximately 80% of all groundwater bodies (in good chemical status, around 15% of all groundwater bodies in poor chemical status and around 5% of all groundwater bodies in unknown chemical status.

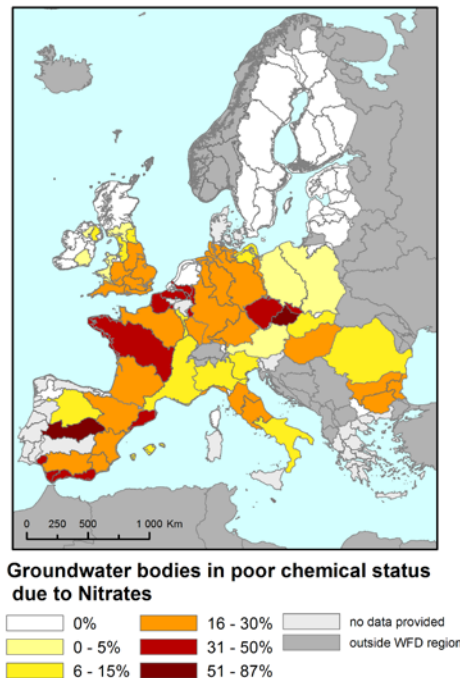


Fig. 9: Percentage of water bodies in national RBDs in poor chemical status due to nitrates

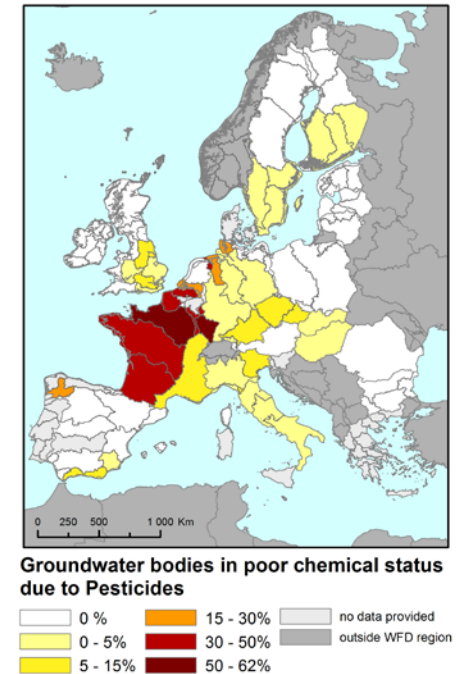


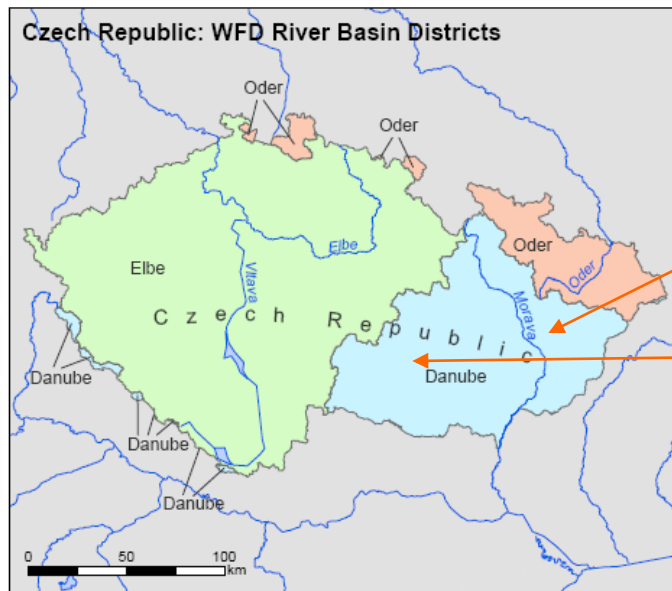
Fig. 10: Percentage of water bodies in national RBDs in poor chemical status due to pesticides

WFD chemical status

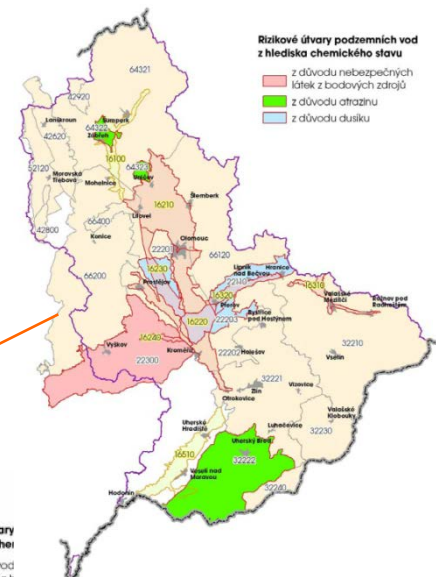
ETC/ICM background document on groundwater chemical status by Vit Kodes (by country)

Czech Republic

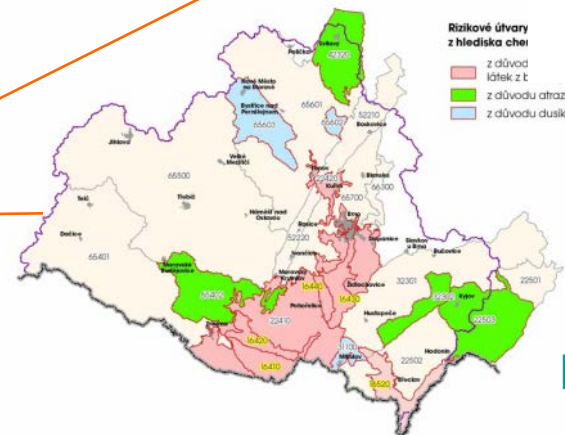
Groundwater in the catchment areas of the Danube: Dyje and Morava threatened by the presence of dangerous/hazardous substances (red), atrazine (green).



WFD map:
CZ RBDs



Morava
CZ map

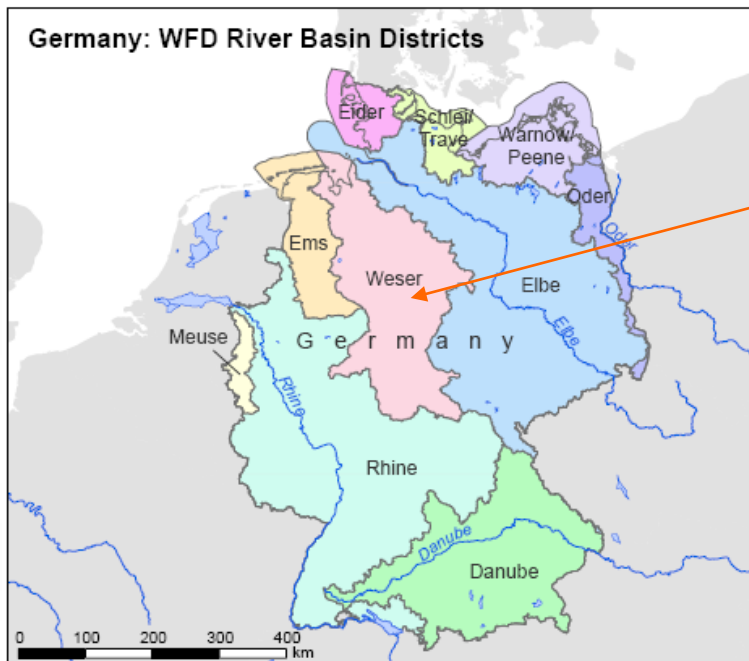


Dyje, CZ map

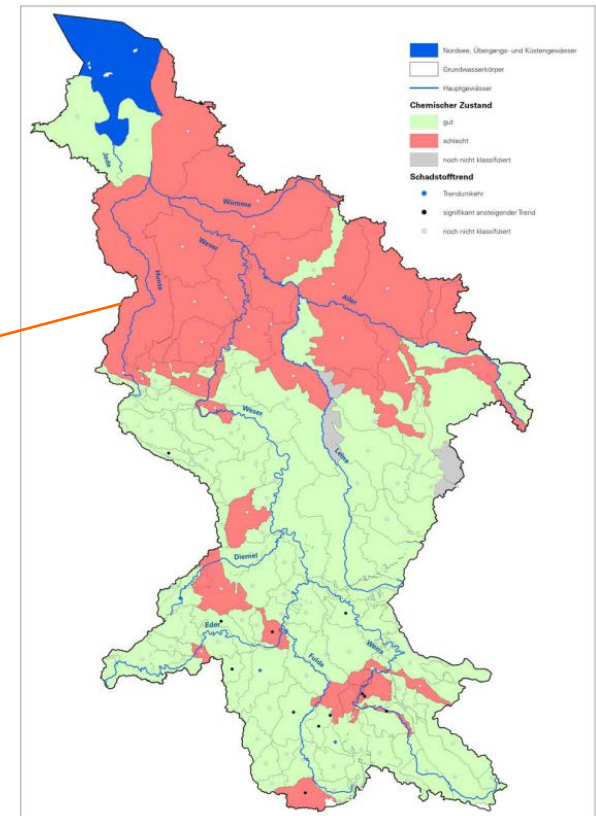
WFD chemical status

ETC/ICM background document on groundwater chemical status by Vit Codes (by country)

Germany

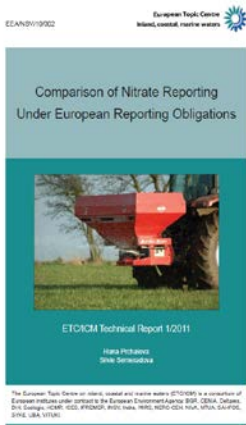


WFD map: DE RBDs

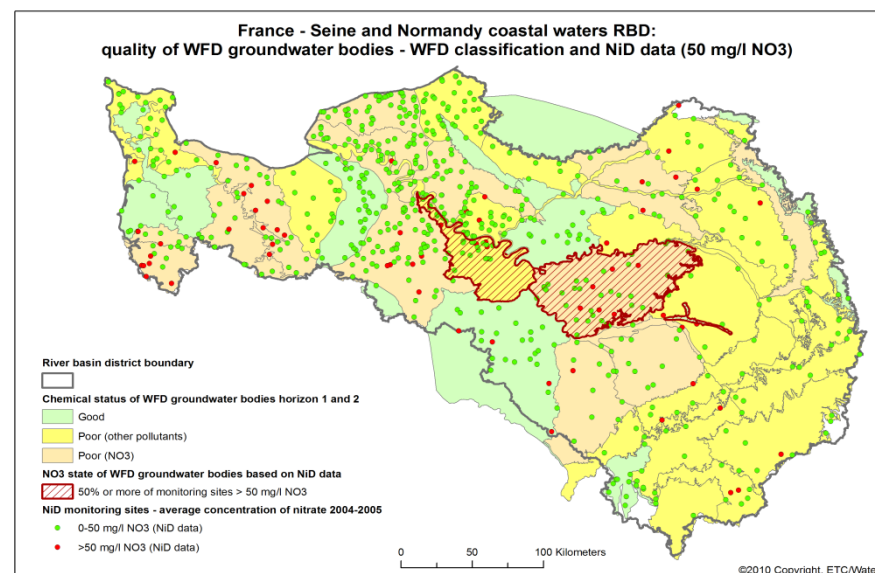
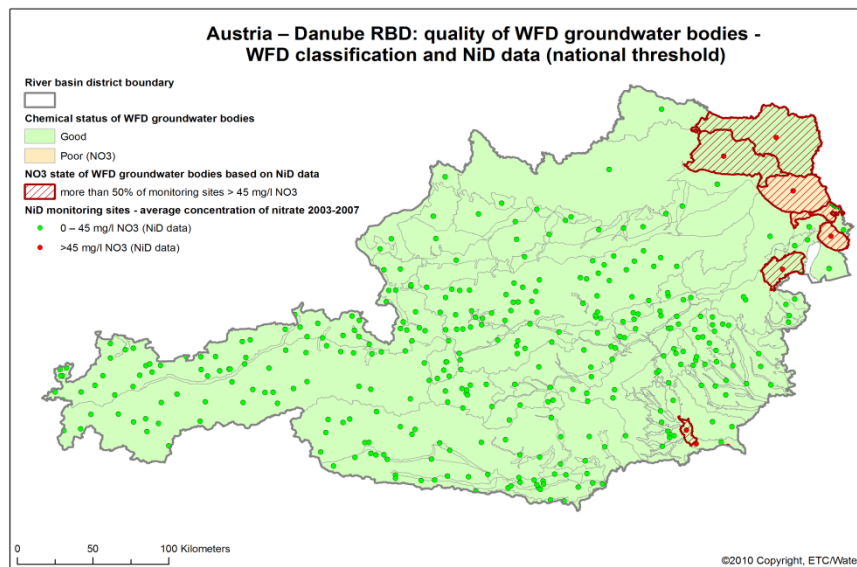


Groundwater chemical status in the Weser RBD

Comparison of Nitrate reporting under different European Reporting Obligations



Interpretation of **NiD data** (based on national threshold value for AT and on 50 mg/l limit for F), shown with **quality of WFD groundwater bodies** under WFD classification



Why do we need a harmonised approach on groundwater body delineation across Europe?

- To analyse and present national information on groundwater body status per River Basin District (RBD) in a harmonised and comparable way across Europe
- To be able to link groundwater data to spatial information
- To avoid searching for groundwater maps on 170 RBDs on more than 27 national websites in national languages
- We need a European level GIS reference layer on groundwater bodies in all 170 RBD as basis for analysis, assessments and presentation of results
- The aim of this workshop is to provide the methodological means for an improved delineation by countries for future reporting.

Thank you for your attention!

