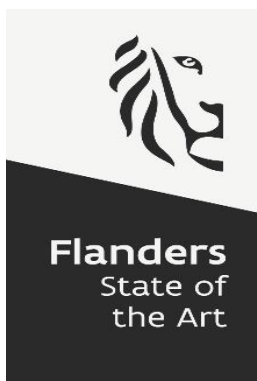


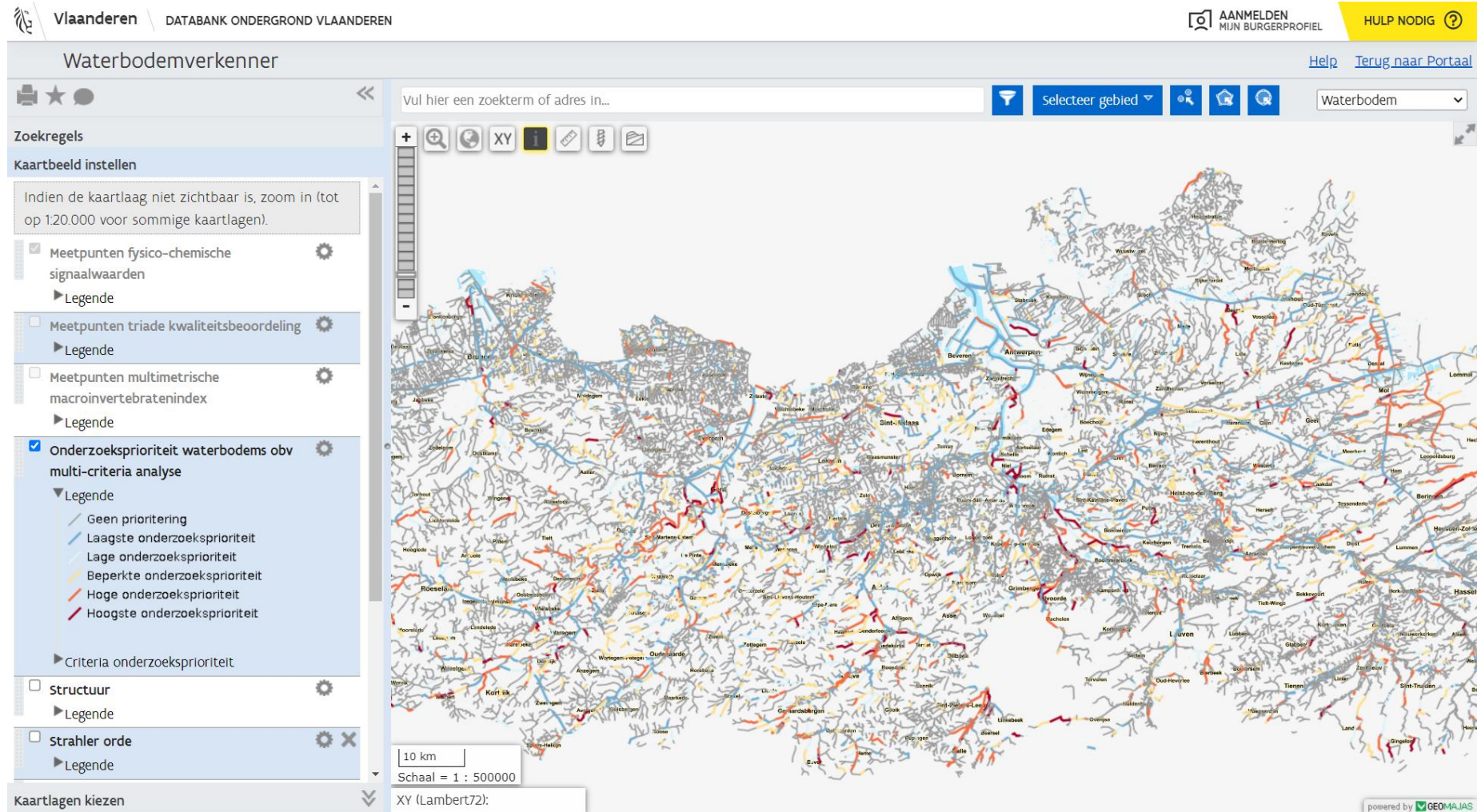
Data-driven approach to implement an integrated water and sediment management strategy in Flanders

Katrien Van de Wiele, OVAM

- ▶ The Sedimentexplorer :
- ▶ a collaboration of



The sediment explorer (dutch: Waterbodemonverkenner)



SAMEN MAKEN WE
MORGEN MOOIER

Integrated approach



Why the sediment explorer?

Spatial explicit approach is needed

To support the identification, prioritization and remediation of contaminated sediments

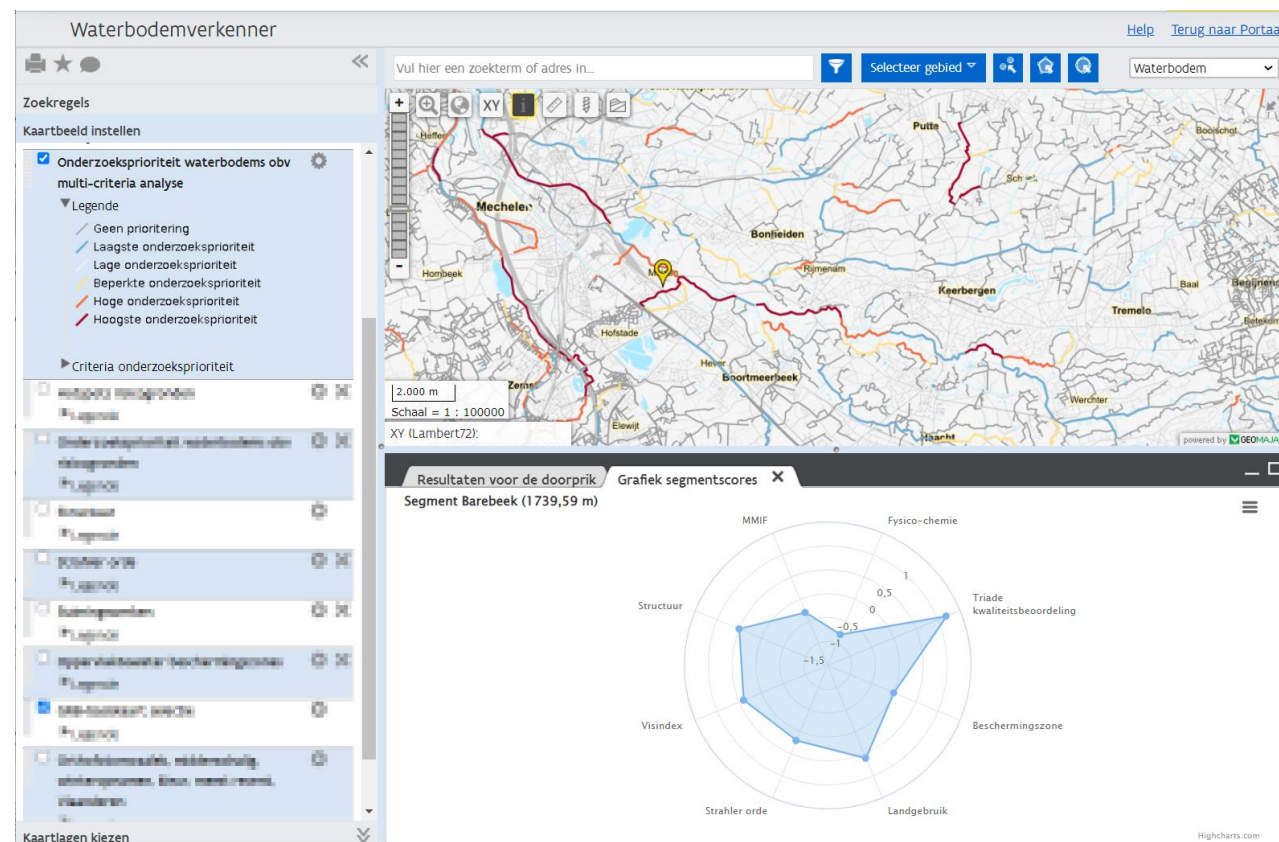
To support integration of spatial data in relation to environmental and policy goals



What can be found on the Sediment Explorer?

Support the identification, prioritization and remediation of contaminated sediments

- Quality data of sullied sediment
- Information on contamination degree and re-use potential
- Research and remediation priority:
 - **MCA** using the relevant technical and environmental variables
 - **Hotspot analysis** using historical and current industrial activities



Waterbodemverkenner

[Help](#) [Terug naar Portaal](#)



vul hier een zoekterm of adres in...



Selecteer gebied



Waterbodem



Bekeergels

kaartbeeld instellen

Indien de kaartlaag niet zichtbaar is, zoom in (tot op 1:20.000 voor sommige kaartlagen).

☒ Meetpunten fysico-chemische signaalwaarden



Legende

☐ Meetpunten triade kwaliteitsbeoordeling



Legende

☐ Meetpunten multimetrische macroinvertebratenindex



Legende

☒ Onderzoeksprioriteit waterbodems obv multi-criteria analyse



Legende

- Geen prioritering
- Laagste onderzoeksprioriteit
- Lage onderzoeksprioriteit
- Beperkte onderzoeksprioriteit
- Hoge onderzoeksprioriteit
- Hoogste onderzoeksprioriteit

Criteria onderzoeksprioriteit

☐ Structuur



Legende

☐ Strahler orde



Legende

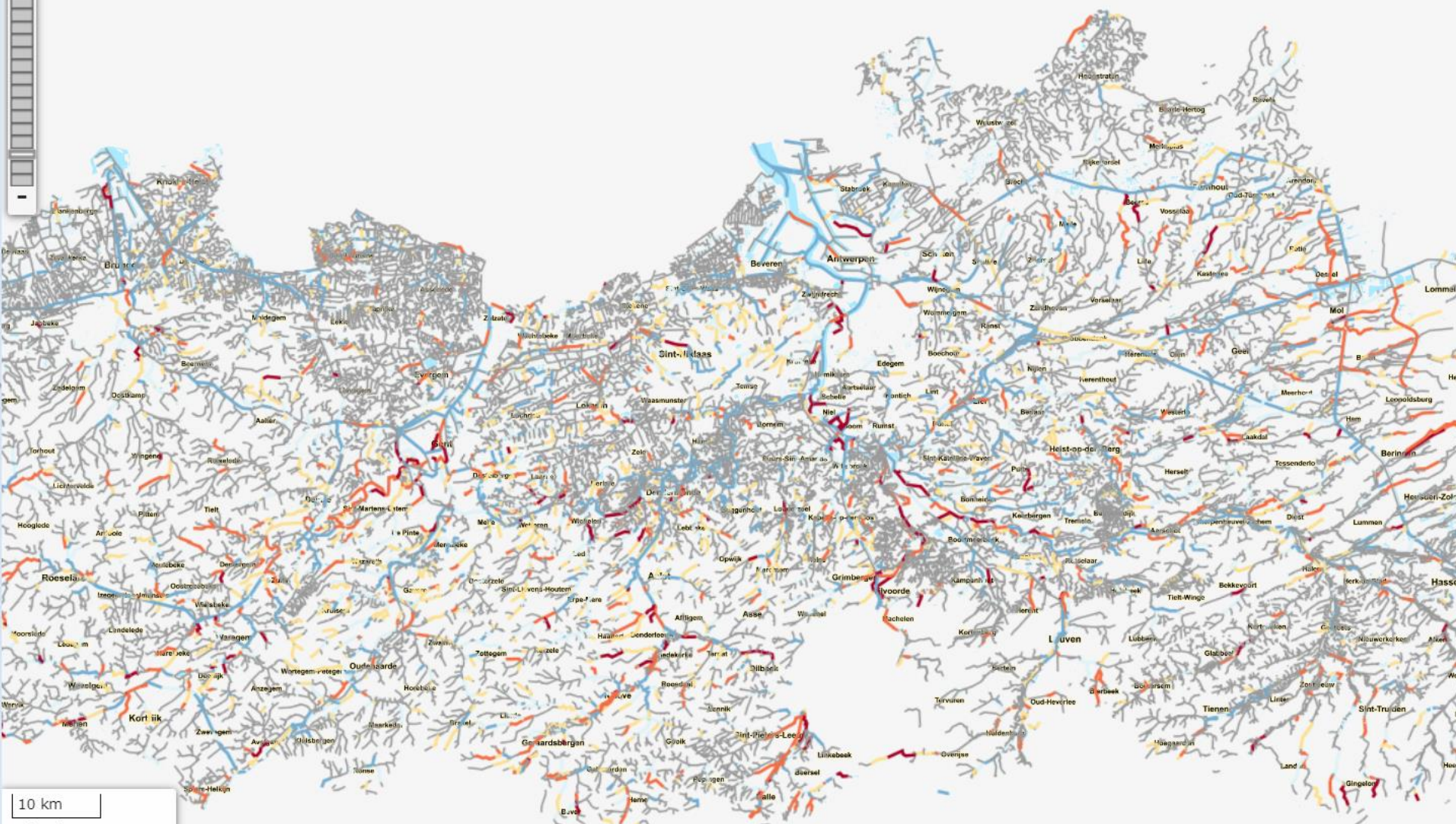
kaartlagen kiezen



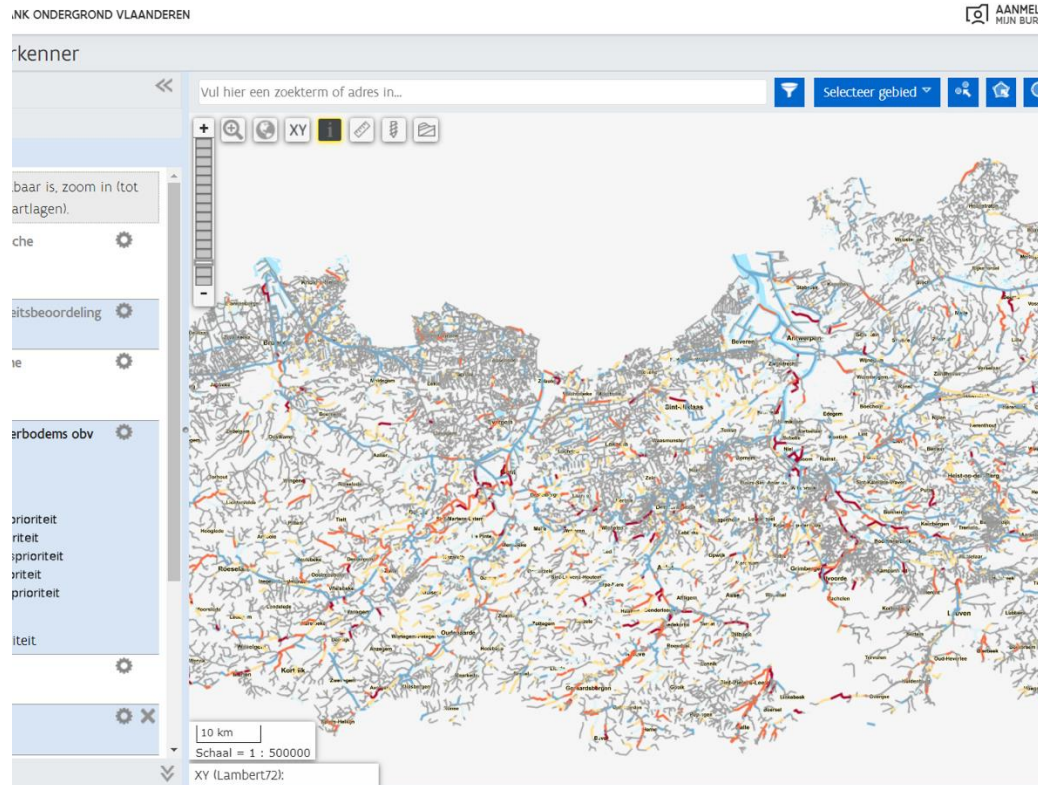
10 km

Schaal = 1 : 500000

XY (Lambert72):



What can be found on the Sediment Explorer?



- ▶ Quality data
- ▶ Period: 2000 till present day
- ▶ Different data sources: Monitoring net, dredging operations, research projects, etc
- ▶ Physical as chemical characteristics:
- ▶ Standard analysis package: Metals, Hydrocarbons, PCB's en PAH
- ▶ Pesticides, Emerging pollutants etc
- ▶ Texture, Organic C, pH
- ▶ Contamination degree and re-use potential are assessed

What can be found on the Sediment Explorer?

Research and remediation priority using a multi-criteria analysis

- **Result:** A ranking of a Flemish waterbodies using a weighted score based on the relevant technical and environmental variables per stream in Flanders.
- **Criteria:**



*Level of
pollution*



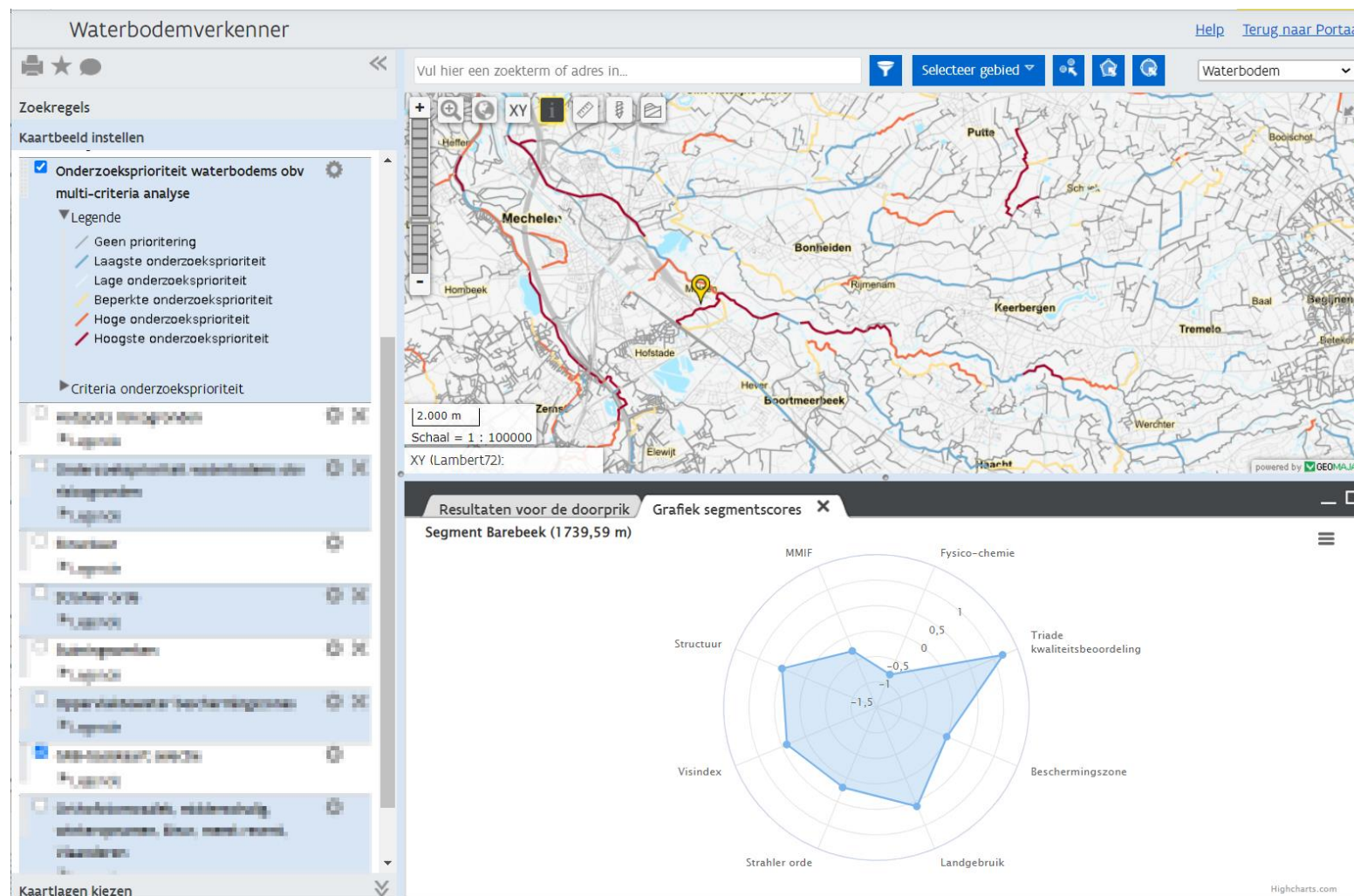
*Environmental
risks*



*Sustainable
remediation*

What can be found on the Sediment Explorer?

Research and remediation priority using a multi-criteria analysis

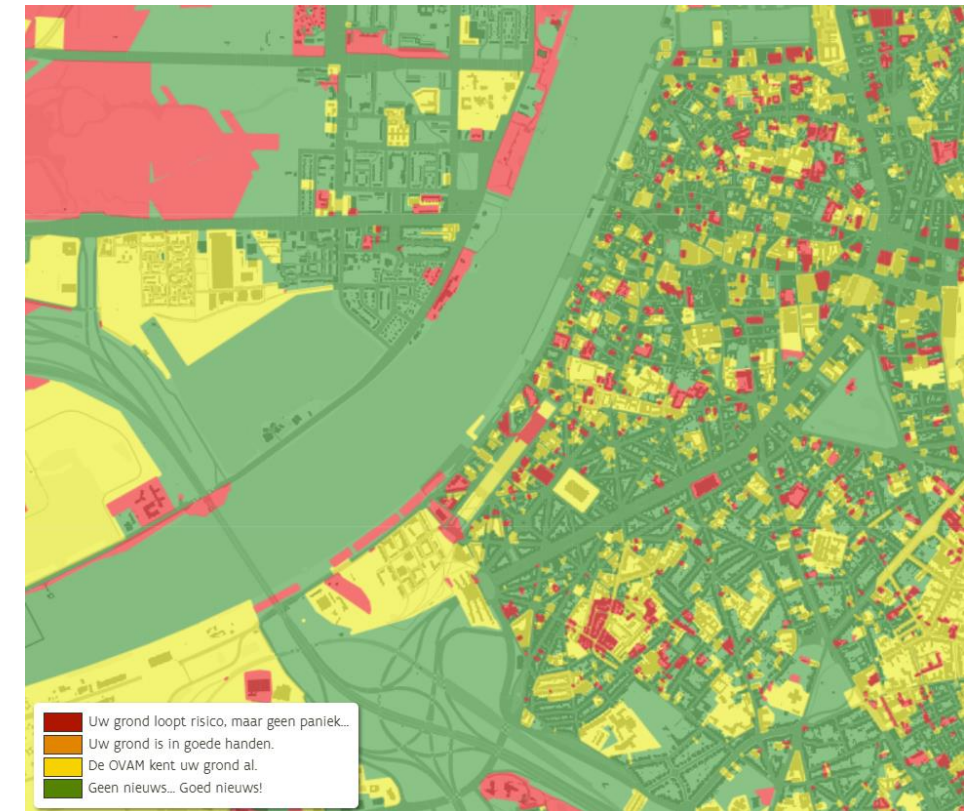


What can be found on the Sediment Explorer?

Research and remediation priority by identifying potential hotspots based on historical and current activities along the watercourse

Flanders inventory:

- At the level of (cadastral) plot
- Historical and current permits for certain activities
 - Scoring of risk activities



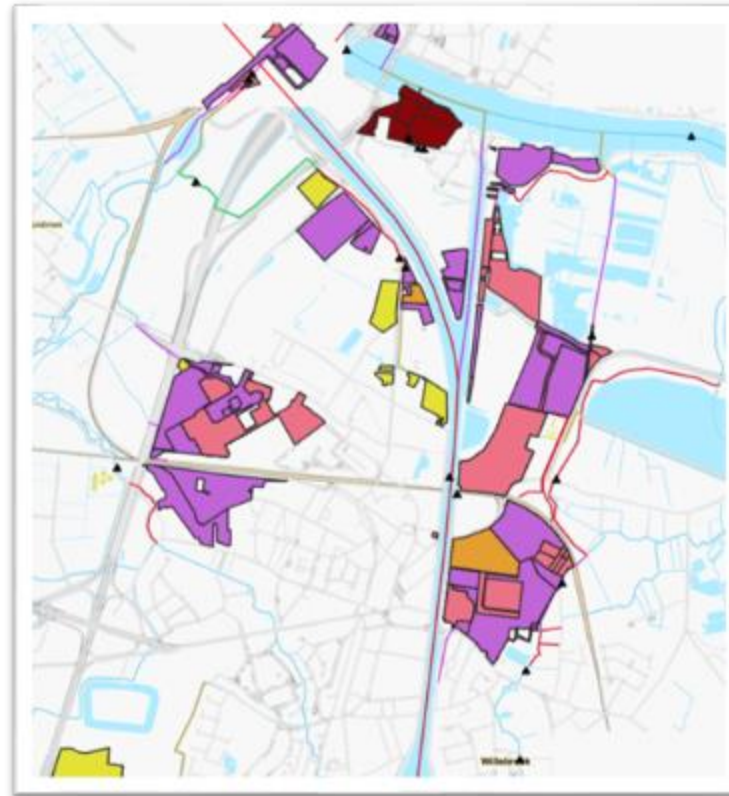
What can be found on the Sediment Explorer?

- **Result: A ranking of potential hotspot activities along watercourses and a ranking of Flemish watercourses from low to very high priority to be investigated based on risk activities.**

Hotspots risk activities

▼ Legende

- Limited suspicious, investigated
- Limited suspicious, not investigated
- Suspicious, investigated
- Suspicious, not investigated
- Very suspicious, investigated
- Very suspicious, not investigated
- Extremely suspicious, investigated
- Extremely suspicious, not investigated



Priority watercourses based on risk activities

▼ Legende

- Lowest priority, investigated
- - - Lowest priority, not investigated
- Limited priority, investigated
- - - Limited priority, not investigated
- Moderate priority, investigated
- - - Moderate priority, not investigated
- High priority, investigated
- - - High priority, not investigated
- Very high priority, investigated
- - - Very high priority, not investigated

What can be found on the Sediment Explorer?

Relevant background layers to perform an area-oriented analysis

Area-oriented analysis

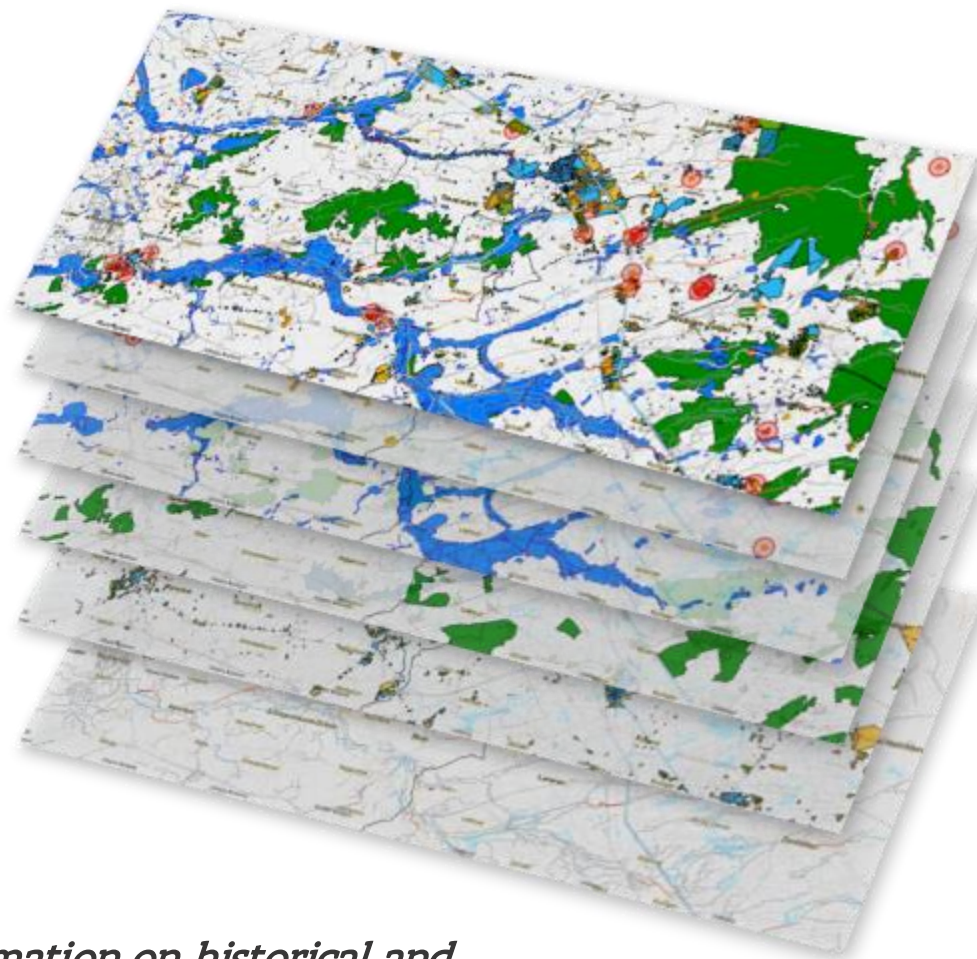
PFAS results

Flood risk

Nature goals (e.g. Natura2000)

Soil data

Sullied sediments



=> WIP: Adding information on historical and current emission from discharge points

What would be the cost to remediate contaminated sullied sediments in Flanders?

A societal cost-benefit analysis (bottom-up approach)

Costs

Research and administrative traject

Removal and processing costs

Benefits

Improved surface waters

Avoided processing costs

*Benefits wrt use riparian zones**

*Benefits wrt flooding**

*Benefits wrt navigability**

*not included as not directly related to improved state of the sullied sediments

What would be the cost to remediate contaminated sullied sediments in Flanders?

A societal cost-benefit analysis (bottom-up approach)

		Economic value (mio €)	
		Min	Max
Costs			
	Navigable	188	864
	Unnavigable	113	598
Total		301	1462
Benefits			
	Navigable	192	635
	Unnavigable	72	197
Total		264	832

- Quantified benefits compensate for 40-95% of the costs for remediation
- Ratio benefits/costs is below one for unnavigable watercourses.



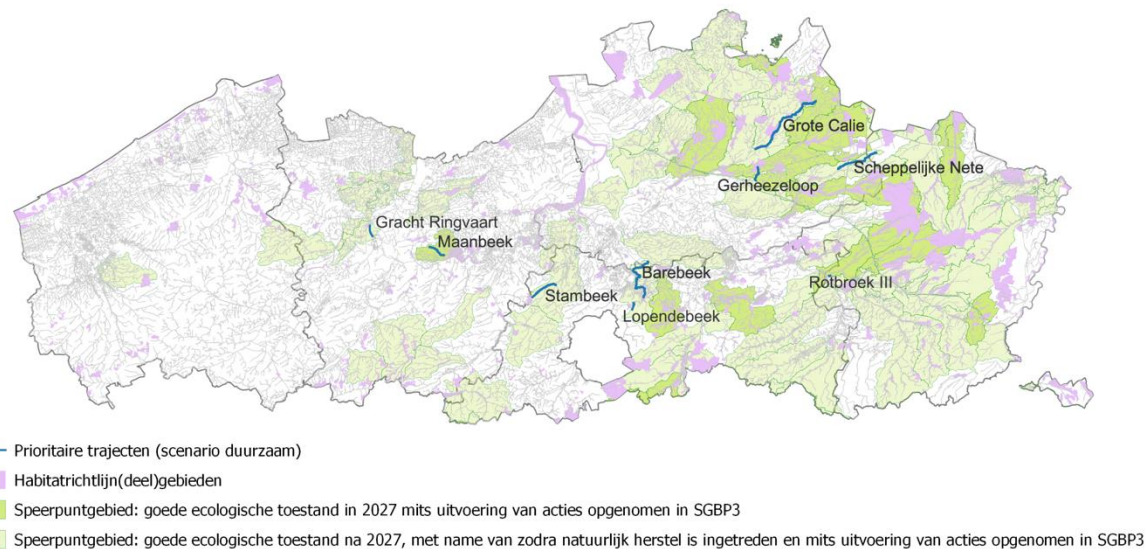
“Sediment remediation is not an end in itself, but a necessary precondition to achieve or safeguard other functions.”

Flemish Government: Regional prioritization

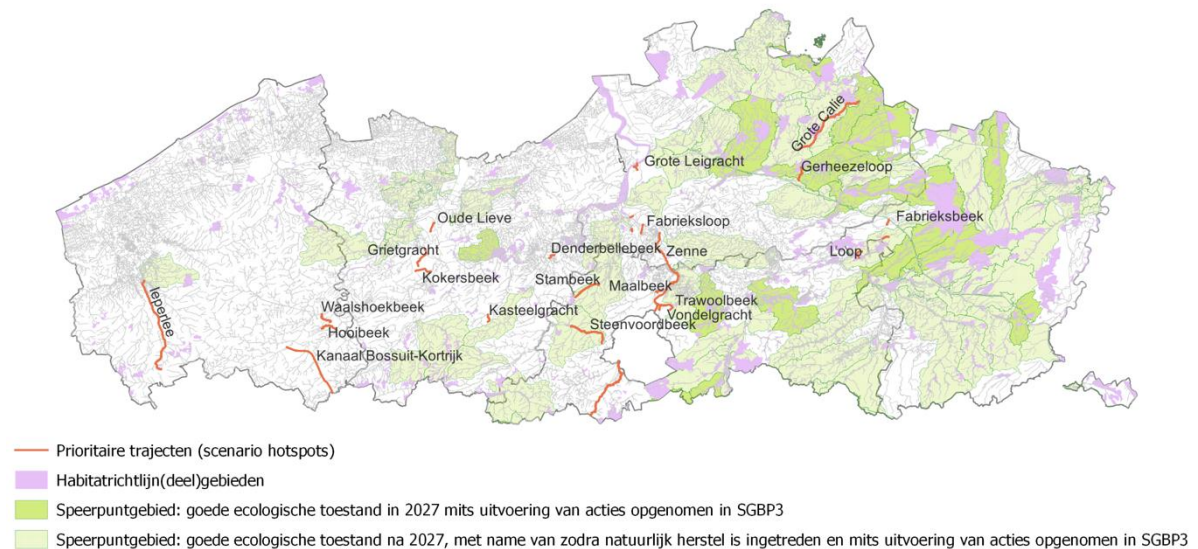
Developed dedicated policy instruments

- **Two lists with highest policy priority => crossed with additional policy goals to achieve co-benefits**

Sustainable remediation
based on MCA



Remediation due to immediate health risks
based on highest exceedance trigger values



Flemish Government: Regional prioritization

Financial support system required

- Clear cases for research and remediation are identified
- Allocated financial support Flemish government is insufficient



- **Advice SERV, SALV + MINA board on Flemish Blue Deal (June 2025)**
 - clear objectives for water quality and security
 - sufficient funding to achieve these goals
 - an integrated approach across policy domains

“Doing nothing will cost more!”



Case Hooibeek – research trajet initiated to investigated sullied sediments

How is the sediment explorer used?

Analysis, policy, ...

- Identify problem parameters at the level of a waterbody
- Identify which factors control the bad sullied sediment quality in a project area
- Prioritize measures at the basin scale by combining the ranking and cost/benefit data



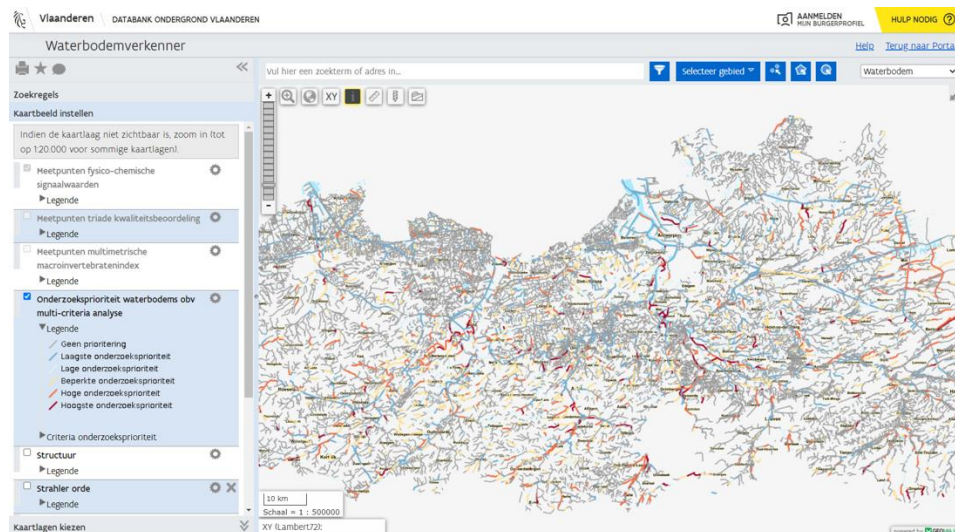
Integral part of guidelines for environmental assessments and supported with a tutorial:

<https://www.dov.vlaanderen.be/themas/waterbodemb>

The sediment explorer a success!

Strengthening each other

- Stimulates and simplifies data exchange
- Increased accessibility of environmental data
- Supports an area-oriented approach to derive scientific and policy insights



**Thank you for
your attention!**

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**A project for the Public Waste Agency of Flanders (OVAM) in
collaboration with:**

