

The SedNet logo consists of the words "Sed" and "Net" stacked vertically in a blue, sans-serif font. To the right of the text is a circular arrangement of twelve orange stars, similar to the European Union flag.

SedNet progress 2024: status 29 November 2024

Sediment in Grensmaas (picture J. Brils)

Jos Brils, SedNet Steer Group member & SedNet Brussels contact

SedNet: the European Sediment Network (www.SedNet.org)

Mission:

Inclusion of sediment issues and knowledge into European strategies and policies to support the achievement of a good environmental status and developing of new sediment management tools

Focus:

- Sediment quality AND quantity issues
- Entire water system scale: river to coastal sea
- Fresh water, estuarine and coastal/marine sediments

Identity:

- Network of sediment professionals: science, policy, management and practice
- Independent platform to expert advice on sediment management
- Window on sediment issues to EC DG Environment



SedNet progress topics in 2024:

1. Rhine Commissions workshop 'sediment management', 24 & 25 June 2024, Strasbourg, France
2. Water Framework Directive (WFD) Common Implementation Strategy (CIS):
 - a) Strategic Coordination Group (SCG): WFD CIS SCG
 - b) Working group (WG) Ecological Status (ECOSTAT): WFD CIS WG ECOSTAT
 - c) Working group (WG) Chemicals (CHEM): WFD CIS WG CHEM
3. Enlarged Soil Expert Group (eSEG)
4. SedNet working groups:
 - a) SedNet WG Circular Economy (CE)
 - b) SedNet WG Sediment Quality
 - c) SedNet WG Education-Science-Policy Interfacing & Sediment Management Concepts (ESPI&SMC)
5. SedNet 2025 conference call for abstracts



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1. Rhine Commissions workshop 'sediment management', 24 & 25 June 2024, Strasbourg, France

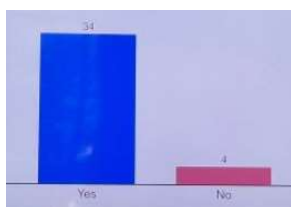
Sediment in Grensmaas (picture J. Brils)



Workshop wrap-up in LinkedIn post Jos*

Unique: 3 Rhine river commissions (Protection, Navigation and Hydrology), together with authorities and knowledge, discussed Rhine sediment management in Strasbourg. A few conclusions (my interpretation):

1. Yes, a plan is necessary →
2. Quantity and quality together
3. Share data FAIR cross-border
4. Measure/observe/monitor more, long-term and preferably harmonised
5. Thus, increase system knowledge (from source/mountain/land-to-sea)
6. Also learn-by-doing (pilots, x-border?)
7. WFD RBMPs provide an opportunity to connect the integrated Sediment Management Plan (iSMP) to
8. Use WFD CIS sediment guidance
9. Share experiences x-border and x-basins



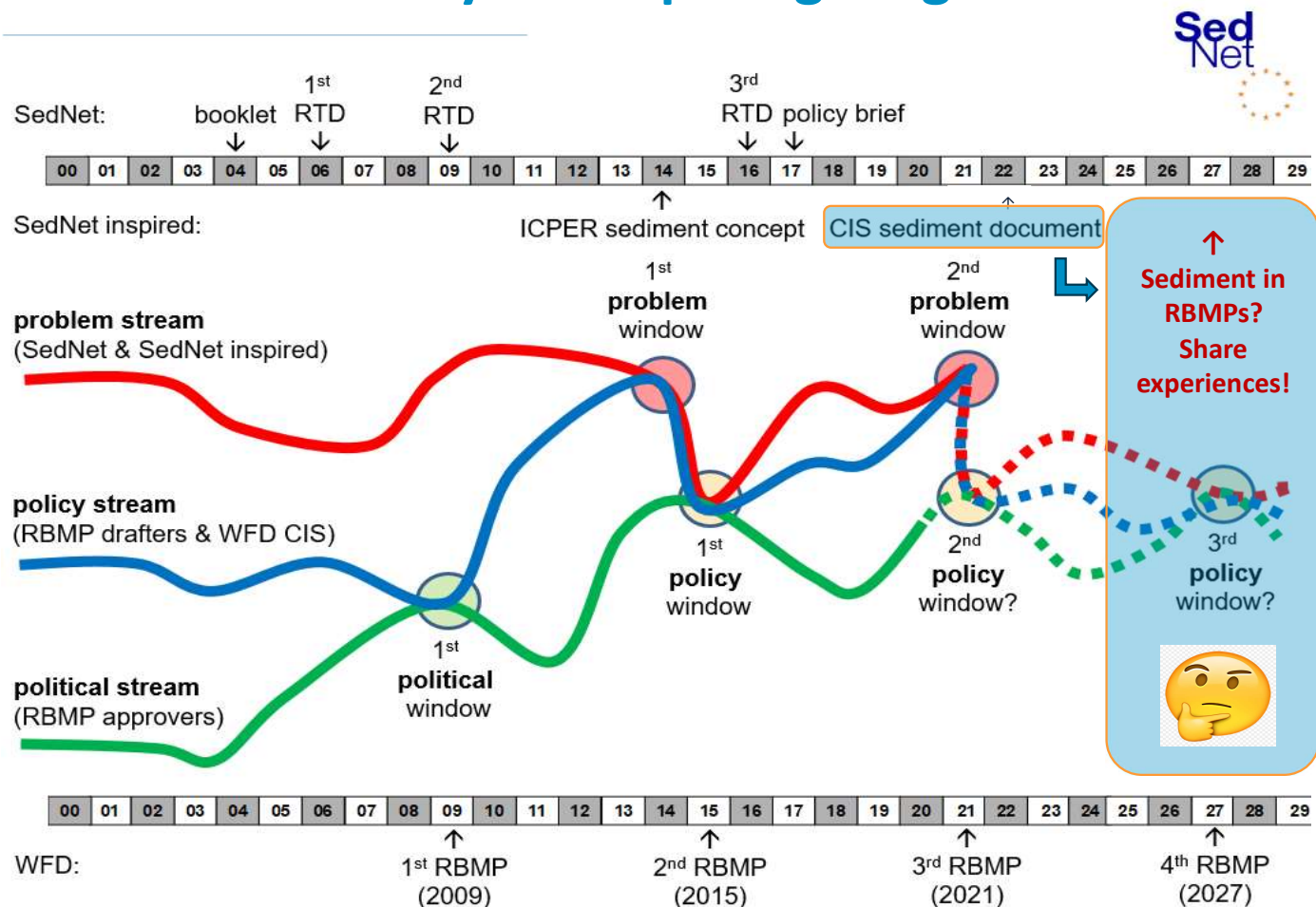
Status on these 9 points to date (ICPR secretariat):

- Report *in prep.* with insights and recommendations from the workshop until 2027.
- Final recommendations include aspects on all 9 points
- Special focus on:
 - development of a measurement database,
 - finalization of ongoing measures,
 - revise substance catalogue
 - collaborative approach to formulate shared research questions to close major gaps in knowledge
- Report shared with ICPR members on 6 November and if agreed published on 5 December this year

→ See next slide

* https://www.linkedin.com/posts/jos-brils-a3484914_rhine-sediment-fair-activity-7211420232861528064-neQe/?utm_source=share&utm_medium=member_android

SedNet's advocacy: anticipating Kingdon's windows*



RTD:
Round Table Discussion

ICPER:
International Commission for the
Protection of the Elbe River

CIS:
Common Implementation Strategy
(of the WFD)

WFD:
Water Framework Directive

RBMP:
River Basin Management Plan

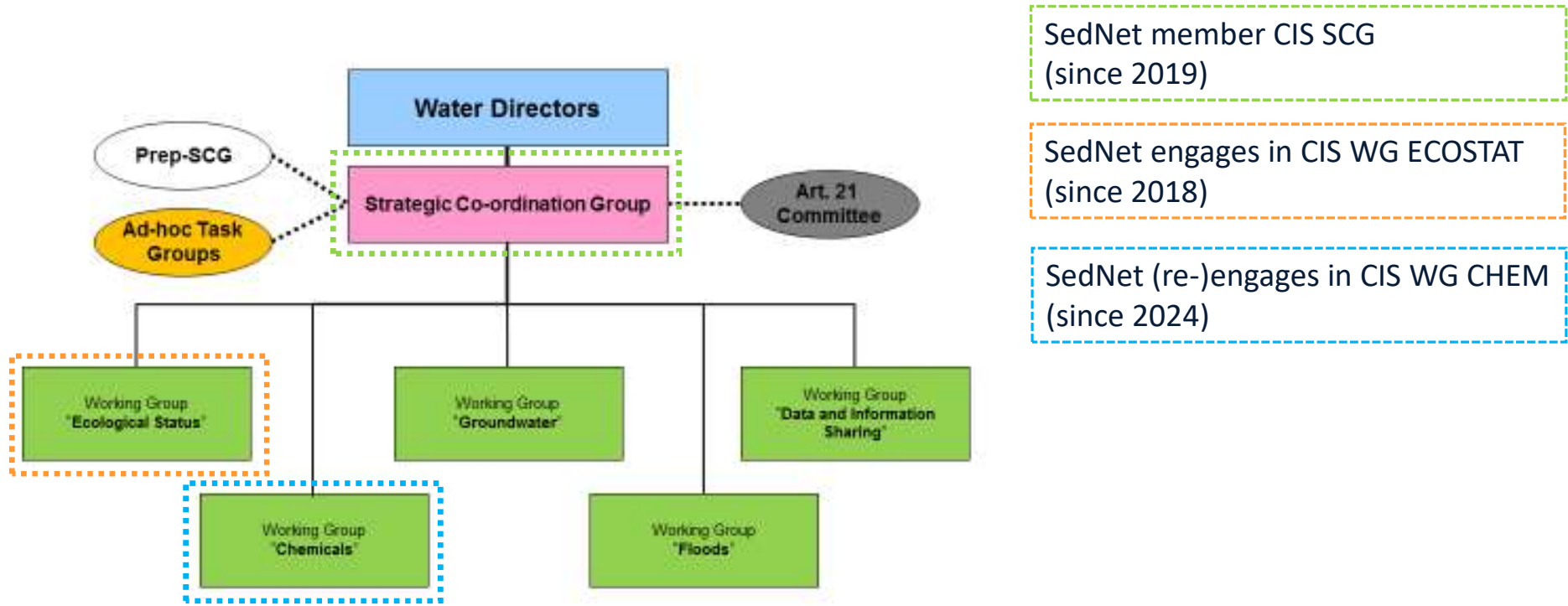
* Brils J (2020) Including sediment in European River Basin Management Plans: twenty years of work by SedNet. *Journal of Soils and Sediments*



2. Water Framework Directive (WFD) Common Implementation Strategy (CIS):

Sediment in Grensmaas (picture J. Brils)

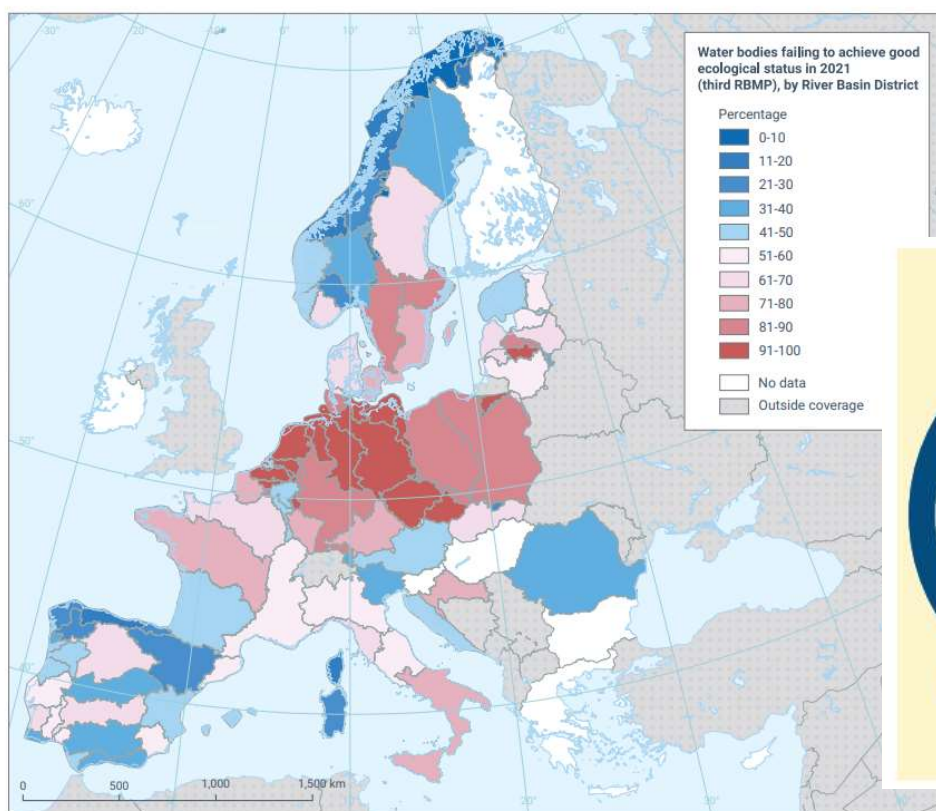
WFD CIS Organisation*



* CIS = Common Implementation Strategy of the WFD & Flood Directive (FD)

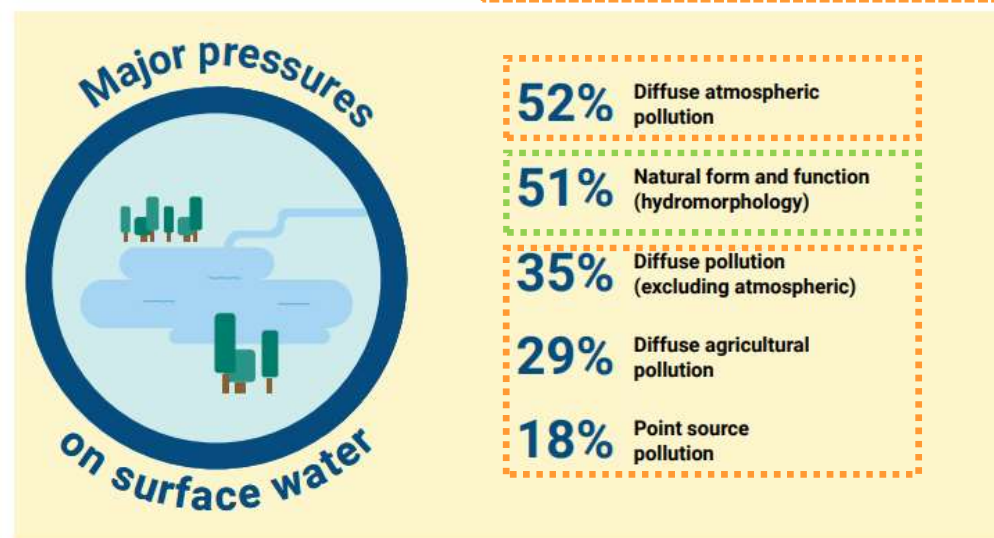
WFD status to date (3rd RBMP)*

Map 2.1 Water bodies failing to achieve good ecological status in 2021 (third RBMP), by river basin district



Directly linked to sediment management!

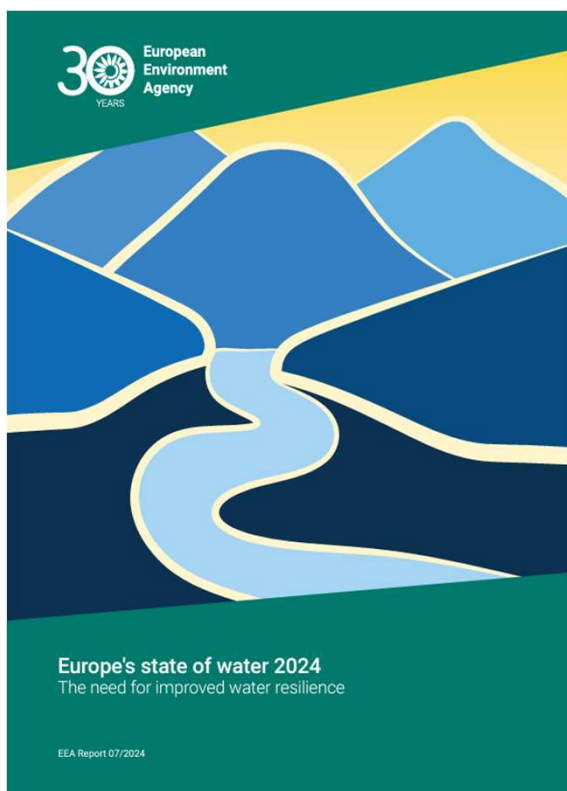
Indirectly linked to sediment management



Reference data: © EuroGeographics, © FAO (UN), © TurkStat Source: European Commission – Eurostat/GISCO

* <https://www.eea.europa.eu/en/analysis/publications/europes-state-of-water-2024>

WFD status to date (3rd RBMP)*

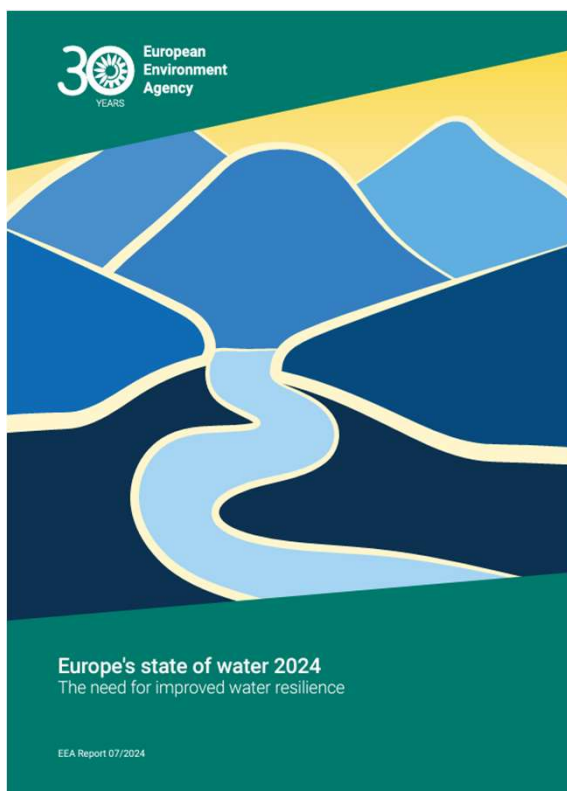


Sediment management key-references in report:

- **Restoration measures** such as restoring river banks, river remeandering, **sediment management** and restoring connectivity of rivers and their floodplains **can improve the ecological condition of surface** water bodies and also **contribute to the recovery of habitats** and species protected under EU nature policies. (p31)
- The restoration highlights the need to reduce external loads of nutrients from the catchment as a pre-requisite before measures are applied to tackle internal **sources of nutrients from the lake sediments**. Often, a combined approach is needed in lake restoration to **tackle legacy pollution** from the catchment that has accumulated over decades in the lake basin. (p32)
- The **dynamic nature of water and sediment needs to be recognised and managed** in a way that is favourable to aquatic and water-dependent ecosystems. This requires recognising the need to address pressures not only in protected areas but also upstream and downstream, and in the land surrounding protected areas, including the interaction of groundwater flows with freshwater and terrestrial ecosystems. (p38)

* <https://www.eea.europa.eu/en/analysis/publications/europes-state-of-water-2024>

WFD status to date (3rd RBMP)*

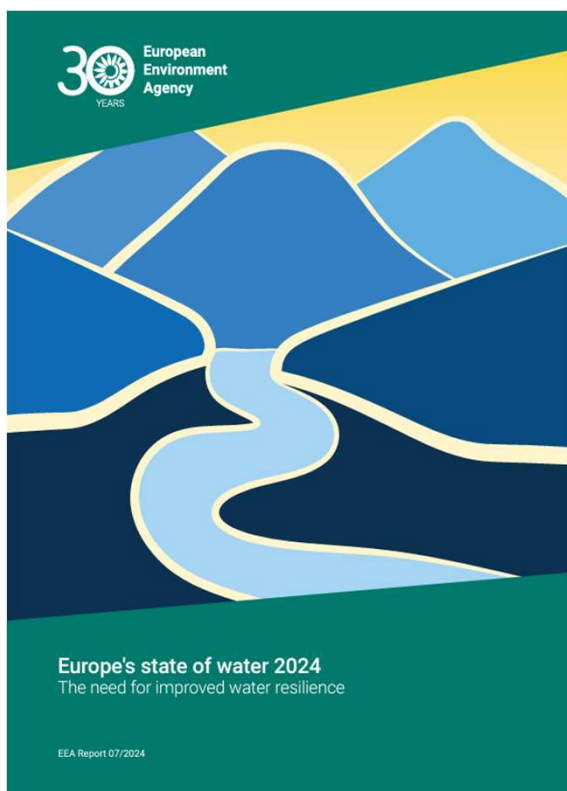


Sediment management key-references in report (continued):

- **Healthy rivers require a high degree of connectivity** between river sections and between rivers and their floodplains. Such connectivity supports the complex life cycles of many aquatic species and delivers water to water-dependent ecosystems. A **natural flow of water and sediments** in rivers **supports populations of migratory fish** such as salmon and eel with recreational and economic value. (p38)
- **Transversal barriers include dams, weirs and sluices** used for various purposes, such as hydropower or water storage for drinking water supply, flood protection and irrigation. They profoundly **alter rivers' longitudinal continuity**, i.e. the **upstream and downstream movement of water, species and sediments**. (p39)
- A **free-flowing river supports connectivity of water, sediment, nutrients, organic matter and organisms** within the river system and with surrounding landscapes ... (p39)

* <https://www.eea.europa.eu/en/analysis/publications/europes-state-of-water-2024>

WFD status to date (3rd RBMP)*



Sediment management key-references in report (continued):

- **Free-flowing rivers** help limit and control flooding, **carry** nutrients and **sediments**, ... (p39)
- **Wetlands can act as riparian buffers** between polluting land uses such as agriculture and freshwater ecosystems, helping to remove nitrogen, phosphorus and pesticides, as well as **reduce sediment erosion and delivery** before entering water bodies. (p44)
- **Flow regimes influence the functioning of aquatic ecosystems** through habitats, water quality, temperature, nutrient cycling, **sediment flows** and geomorphological processes. (p70)

* <https://www.eea.europa.eu/en/analysis/publications/europes-state-of-water-2024>

2.a WFD CIS SCG:

- This period not much discussed of direct relevance for sediment management
- However, in meeting of 13th of October 2023. raised the next when “Progress in the implementation of the current **CIS Program 2022-2024** was presented by COM:
 - “The Co-Chair (FI) and several participants (SedNet, LU, FI, NL, FR) stressed that in light of adverse circumstances and challenging topics, the progress on tasks is positive.
 - **SedNet** noted that for Task 8, the **workshop on sediment management is missing, yet would be a valuable activity to pursue.**”

PS:

- Workshop Not held in 2024
- Hope it will be included in next ECOSTAT work program (see next slide)

2.b WFD CIS WG ECOSTAT:

Work Program 2022-2024 for Working Group ECOSTAT

Task 8 - Exchange of information on sediment by producing guidelines of best practices and organizing a workshop



Description	<p>Sediments are key components of aquatic ecosystems. They consist of solid particles of various sizes, which form the bed and bank of rivers and their floodplains, of lakes, estuaries and coastal ecosystems. Sediments acts as host for all categories of aquatic species, including aquatic and riparian plants, which use it as a substrate, fish that use sediment as spawning sites, and different benthic organisms (e.g., invertebrates) which use it as their habitat. It plays therefore a vital role for ecosystems</p> <p>Applying “integrated sediment management planning” requires a preliminary analysis of the sediment dynamics in the river basin. It is generally recommended to start by setting objectives at the catchment scale, and then derive them at more local scales. Identifying measures at local scale without assessing both the cause of the problem and the effects of the measures at the larger scale risks being <u>counter-productive</u> as measures may not bring the expected benefits. It is also recommended, where relevant, to address both sediment quantity and contamination aspects as these may be closely linked.</p>
Core-group/ organisations	Core-group comprises following organisations: ENV, JRC, ES, DE, IT, NGO SEDNET, NGO NTG
Progress/ deliverables 2022	CIS Guidelines: Integrated sediment management - Guidelines and good practices in the context of the Water Framework Directive (9/2022)
Future activities	Workshop on sediments (to be decided)

In final ECOSTAT 2024-2027 work plan the next is included:

“Equally, the links between water and land are gaining increased attention also with the upcoming adoption of the Soil Monitoring Law and the Forest Monitoring Law.

In this context, **more work might be needed on exchanging information on the management of sediments from the quantitative and qualitative aspects.**

If necessary, the Commission will **organise a workshop on barriers and successes of sediment management.”**

2.c WFD CIS WG CHEM:

- Susanne Heise (& Carmen Casado as back up) joined in WG since mid this year
- First, upcoming meeting in Brussels is scheduled for 23-24 October, 2024
- Susanne stated:
 - “We currently cannot say anything about any progress,
 - other than that sediments seem to not have been tackled at all up to now
 - neither sediments nor soils are mentioned in the documents that refer to the WG chemicals
 - We hope to be giving some input on this in the future”.

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3. Enlarged Soil Expert Group (eSEG)



SedNet membership of eSEG

Enlarged Soil Expert Group (eSEG):

- Engaged MS delegates, stakeholders and experts of different policy areas
- Advised the EC and provides expertise on the:
 - implementation of the Soil Strategy
 - the development of the proposal for the **Soil Health Law**
- Started of with an **integrated focus on soil-sediment-water**
- “*Proposal for a Directive on Soil Monitoring*” delivered July 2023*

→ continued capacity to support ecosystem services
 → sediment zero times mentioned in the proposal!



SedNet position in eSEG

- ‘Voice for sediments’: brought in sediment management expertise
- Also raised in 1st eSEG meeting (October 4th, 2022) that achieving of soil health takes an ecosystem-based management approach
- EC DG Env. Soil team **at first agreed ... but”**

→ no reference to it in the “*Proposal for a Directive on Soil Monitoring*”

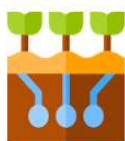
* https://environment.ec.europa.eu/publications/proposal-directive-soil-monitoring-and-resilience_en

SedNet membership of eSEG

In the eSEG meeting at 4 October, EC-DG ENV soil team presented an update of the EU soil strategy for 2030. On slide 10 it mentions:

Key actions

- **Healthy soils for clean water**



- Improve **soil-sediment-water nexus**
- Guidance on sustainable management of **sediment**
- Better integrate soil and land use management in the **River Basin Management Plans**

Asked DG ENV soil team for further details. Response (Bavo Peters by email): We consider the actions of the Soil Strategy you refer to as completed and implemented through:

- The proposal for the Soil Monitoring Law in which various links were integrated e.g. around water storage capacity of soils, the risks of contaminated sites for groundwater, etc.
- The CIS document on integrated sediment management in which SedNet contributed.
- Reporting of the River Basin Management Plans and the Flood Risk Management Plans.



4. SedNet working groups

Sediment in Grensmaas (picture J. Brils)

4.a. SedNet WG Circular Economy (CE)

WG objective:

Stimulate the use of sediments as a mineral resource in a circular economy.

Key achievements (October 2023 - October 2024):

- 26-03-2024: Presentation for US congress workgroup with EPA and USACE) on Contaminated Sediment Beneficial Use
- 04-06-2024: Joined Workgroup Session in Hamburg on Sediment Quality Guidance and Sediment Quality Assessment (Quality) and Circular Economy Sediment as a Resource (CE)
- 01-05-2024: Publication of paper “Beneficial use of sediments, tools, pilot sites and measuring techniques developed and used within seven European Union INTERREG projects”, Journal of Soils and Sediments, <https://doi.org/10.1007/s11368-024-03811-z>
- 05-06-2024: Field visit to the METHA plant in Hamburg on treatment and landfilling of sediment

4.a SedNet WG Circular Economy (CE)

Plans (October 2024 – October 2025):

- Spring 2025: Teams workgroup session.
- Spring 2025: Submittance of Paper “Beneficial use options for dredged sediments: circular economy and climate change-based assessment and classifications”
- Spring 2025: Submittance of Paper “How on-site analytical techniques can help mining waste recovery and valorisation”
- 6-10-2025: SedNet conference Madrid, CE contributions for Theme 1 (Zero Pollution), Theme 2 (Sediment Flows) and Theme 3 (Nature Based solutions)
- 6-10-2025: SedNet congress Madrid, **with SG**: Discussion with EU DG Environment on CE, clean-up and the role of sediments in the EU Soil Strategy and Soil Monitoring law.

4.b SedNet WG Sediment Quality

WG objective:

Sharing knowledge of methods, discussing ideas for improving the assessment of sediment quality and actively collaborating on implementation.

Key achievements (October 2023 - October 2024):

- Exchange of knowledge regarding challenges for direct sediment testing (e.g. reference sediments, sediment storage conditions)
 - Research proposal submitted by groups from Switzerland, Sweden and Germany (“Smart-Sed”)
- Compiling participants’ experience regarding relevant confounding factors (also sediment elutriates)
- Raising awareness that different countries perceive the role/function of SQC differently (e.g. for TBT)

Plans (October 2024 – October 2025):

- Coordinated exercises of WG participants for improving the ostracod test (as a first test system)
- Interlaboratory comparisons of direct sediment tests with natural sediments

4.c SedNet WG Education-Science-Policy Interfacing & Sediment Management Concepts (ESPI&SMC)

WG objectives:

- 1) Improve the communication & education about sediments, by making products that spread the latest scientific and policy related sediment issues.
- 2) Share experiences with structuring and using sediment management concepts as a tool for a more integrated sediment management.

Key achievements (October 2023 - October 2024):

- Workshop on the 4th of June 2024 in Hamburg & online
 - Drafted 4 new ‘Sandy adventures’ stories
 - Drafted the outlines for a Sediment (serious) Game

Plans (October 2024 – October 2025):

- Further develop the 4 new ‘Sandy adventures’ and translate them in several languages
- Develop a website with all the ‘Sandy adventures’, educational tools and existing examples of good sediment communication
- Develop the Sediment Game



Once upon a time... a beach grain of sand

Scientific Literacy | Outreach

[Once upon a time...a beach sand grain \(sandy-story.com\)](https://sandy-story.com)



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5. SedNet 2025 conference call for abstracts

Sediment in Grensmaas (picture J. Brils)

Call for abstracts:



SedNet

GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

CSIC
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

90 ANIVERSARIO
Instituto de Ciencias de la Construcción
Eduardo Torroja

Healthy Sediments

14th International SedNet Conference
6–10 October 2025
Madrid, Spain

Healthy Sediments: What Are They and How Can They Be Achieved?

We tentatively propose six thematic sessions for the conference:

1. **Zero Pollution**
2. **Sediment Flows**
3. **Nature Based Solutions**
4. **Sediment Literacy & Citizen Science**
5. **Data Collecting, Sharing and AI**
6. **Sediment Management Concepts and Policy**

We look forward to your contributions and discussions on these critical topics.



THANK YOU FOR YOUR ATTENTION

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