

Implementation of the sediment management concept and examples of measures to improve the sediment status

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Internationales Elbeforum
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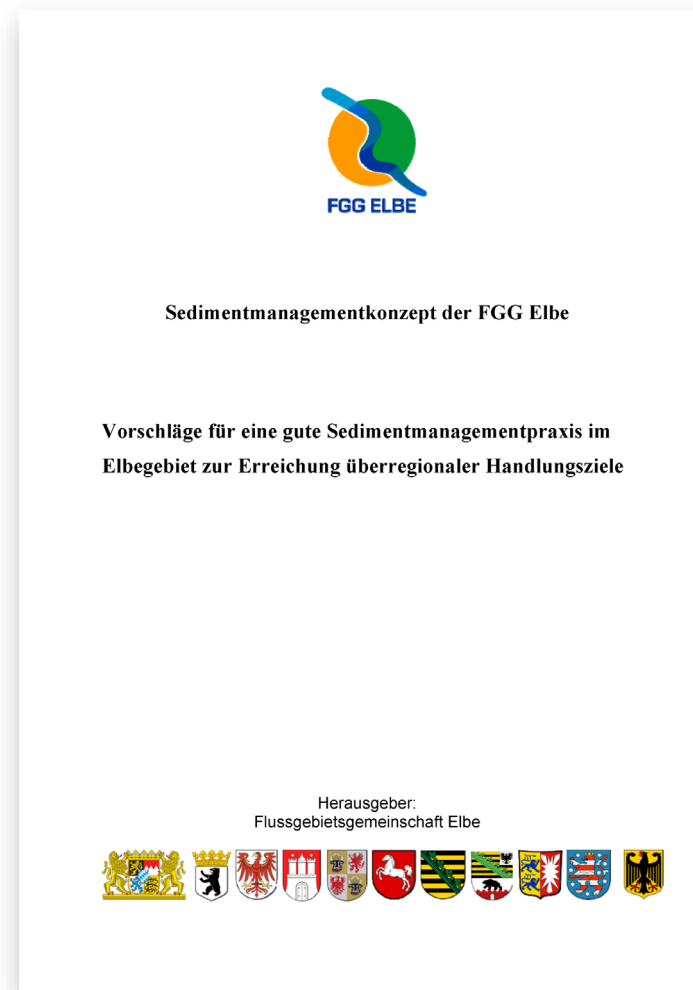


BfG Federal Institute
of Hydrology



Sediment management concepts (SeMC) of the River Elbe

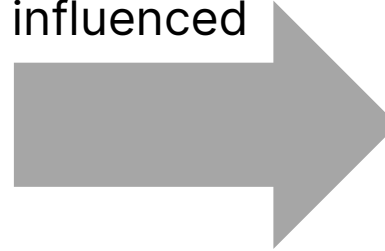
- RBC Elbe and ICPER identified the need to develop a sediment management concept in the first River Basin Management Plan for the WFD in 2009
 - relevant for achieving the objectives of the European Water Framework Directive (WFD)
 - published 2013 and 2014
- Central aim: suggestions for good sediment management practice in the Elbe catchment area in order to achieve supra-regional action goals
- Specific recommendations for action and management options were formulated based on an integral consideration of the aspects of quality, quantity and hydromorphology as well as navigation



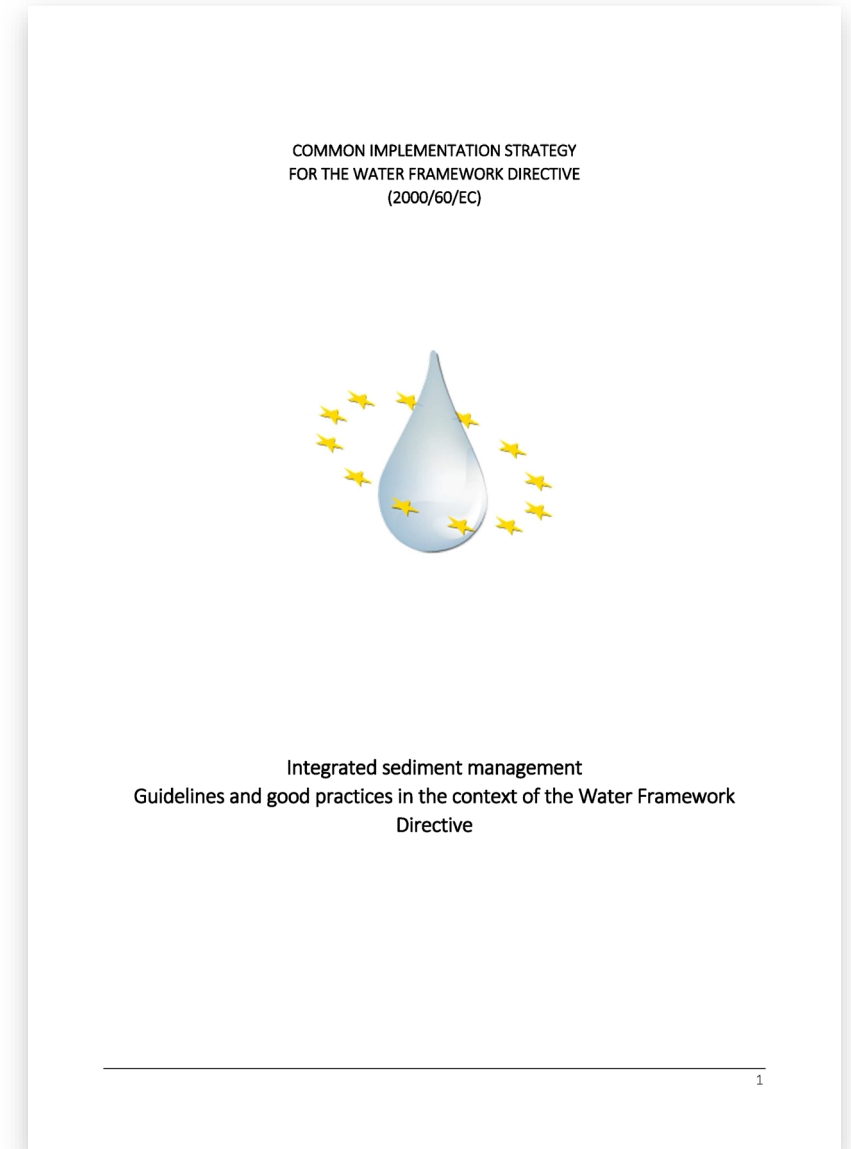
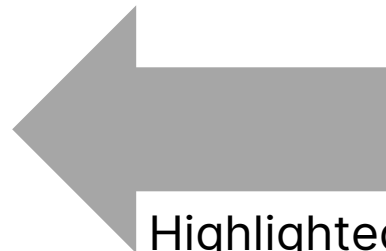
International perception of the SeMC RBC Elbe / ICPER



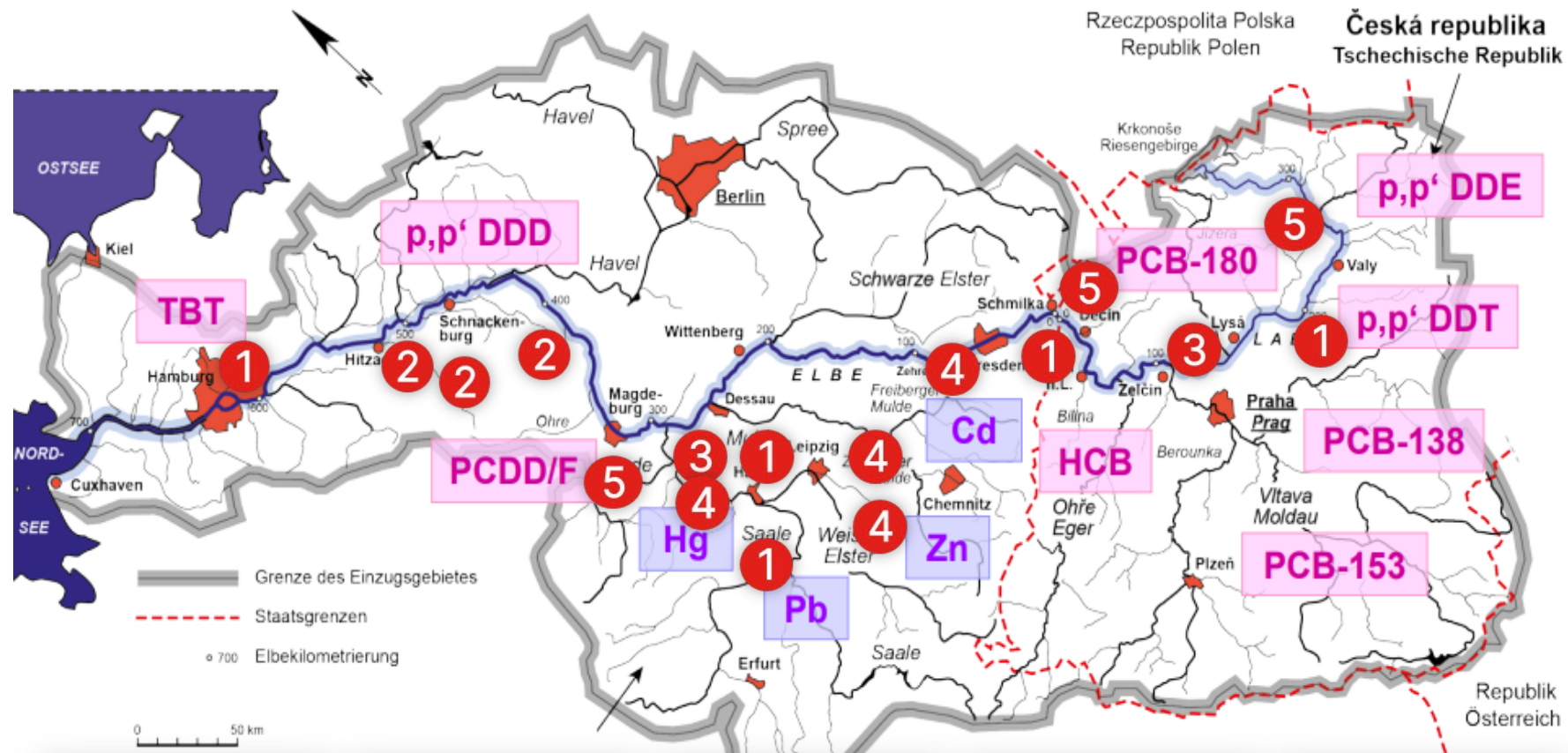
Inspired and
influenced



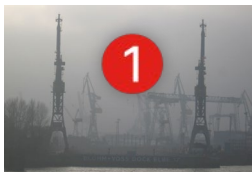
Highlighted
as best
practice



Main sources of sediment-related pollution



industry



side structures



weirs / dams / locks



old mining sites



legacy pollution



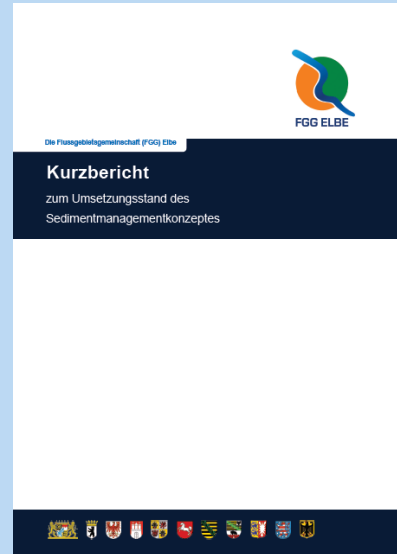
Sediment management concept RBC Elbe - implementation steps taken so far

2014 – Planning of measures



Short report on planning of sediment management (SeM) measures of the Länder (German federal states) for the second management period WFD

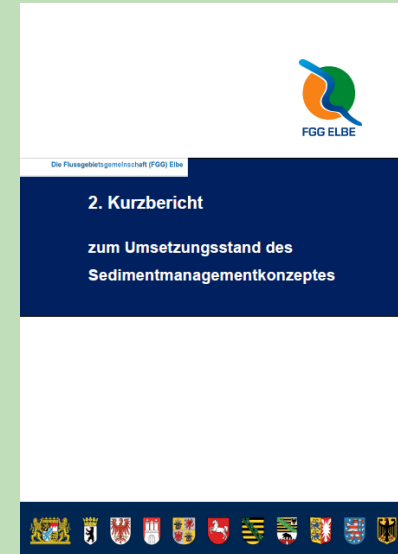
2018 – 1. short report



Content e.g.

- SeM-measures / questionnaire
- monitoring / introduction SQI
- specific examples of measures and actions

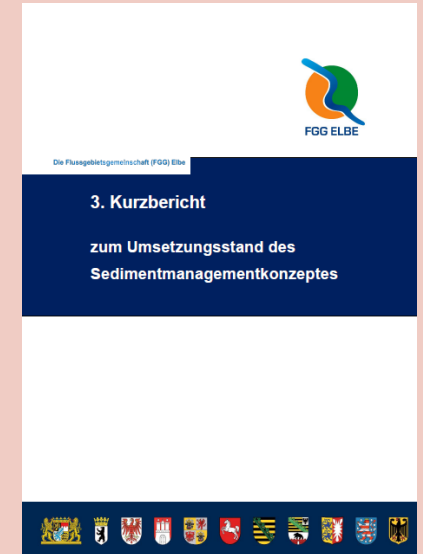
2020 – 2. short report



Content e.g.

- SeM-measures / fact sheets
- monitoring / update SQI
- workshop and position paper (Federal Government and Länder)
- work Ad-hoc AG Um-SeMK
- conceptual analysis of tributaries (hydromorphology)

2023 – 3. short report



Content e.g.

- SeM-measures / fact sheets
- monitoring / update SQI
- work Ad-hoc AG Um-SeMK
- pilot projects WSV
- conclusion conceptual analysis of tributaries

Sediment management concept RBC Elbe - further implementation steps taken so far

2019



Workshop Federal Government and Länder in Hamburg, Germany

- „acting together“
- pilot projects WSV
- Ad-hoc AG Um-SeMK

2020 – Position paper



Position paper of the Federal Government and the Länder
-> 5 fields of action identified

2023



Workshop Federal Government and Länder in Magdeburg, Germany

- follow-up workshop to 2019
- EG SeM as permanent expert group following the Ad-hoc AG Um-SeMK

2024 – Declaration of intent

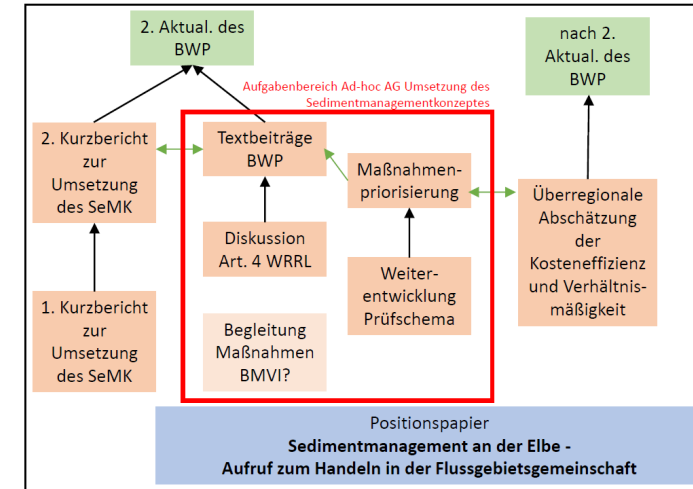


Declaration of intent of the Federal Government and the Länder as an update to the position paper

Establishment of the Ad-hoc AG Um-SeMK (now EG SeM) of the RBC Elbe

Establishment of the *Ad-hoc-AG „Umsetzung des Sedimentmanagementkonzeptes (Um-SeMK)“, 2020*

- assigned to the AG OW RBC Elbe
- participants: several Länder, WSV and BfG (chair BfG)
- 15 regular meetings until end of 2023
- own mandate



Permanent expert group following Ad-hoc AG as *Expertengruppe (EG) „Sedimentmanagement“ (SeM), 2023*

- participants: several Länder (inkl. LAF ST), WSV and BfG (chair BfG)
- until now 4 regular meetings
- continued focus on qualitative sediment management
- part of the mandate of the AG OW RBC Elbe
- further tasks through resolutions of committees, e.g. Elbe-Rat due to concretisation of the declaration of intent

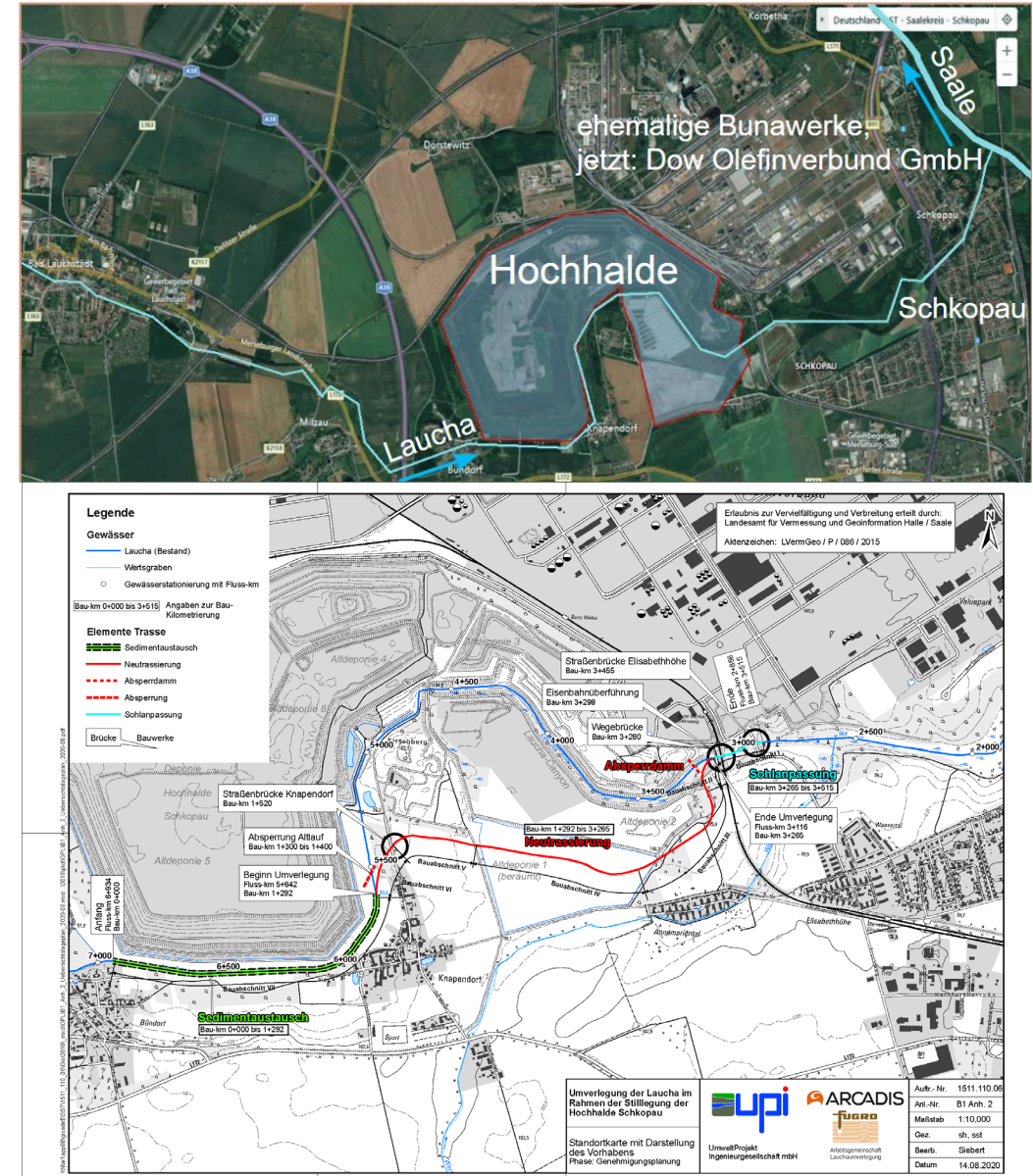
List of measures / prioritisation – working status EG SeM

The image shows a large, complex table with multiple columns and rows. The table is partially obscured by a grid overlay, and some cells are highlighted in yellow and blue. The table appears to be a list of measures and their prioritisation status, with columns for measure details, status, and other relevant information. The table is organized into several sections, with some rows highlighted in yellow and others in blue. The table is a working status EG SeM, and it contains a list of measures and their prioritisation status.

- measures not only taken from the fact sheets of the short reports (new enquiry Länder / Federal Government, directly derived from SeMC)
- first attempt prioritisation / categorisation
 - currently rather based on formal criteria
 - effectiveness of measures only described qualitatively, mainly due to lack of data
- **effectiveness of measures (achievement supra-regional action goals)?**
 - **tool required for quantitative estimation**

Example 1 – Safeguard / remediation measure Hochhalde Schkopau (Saxony-Anhalt)

- Direct contamination of the stream Laucha in the area of the old landfill site Hochhalde Schkopau
 - Concentrations far above EQS values
 - Mainly mercury
 - Impact on downstream waterbodies (Saale)
- Solutions
 - Measures for landfill site decommissioning
 - Measures at the stream Laucha
 - Relocation of the watercourse (2500 m)
 - Replacement of sediments (1300 m)
 - Start construction / realisation 2026
 - Estimated costs 27 Mio. Euro (only relocation)



Figures provided: Landesanstalt für Altlastenfreistellung (LAF)

Example 2 – Contaminated site project SAXONIA (Freiberg, Saxony)

- Remediation measures at old mining sites / metallurgical plants
 - Prevention / reduction of the spread of pollutants (metals and arsenic)
 - via air
 - into the river Freiburger Mulde
- In total 50 single objects (e.g. smelters, landfill sites) remediated
 - Decommissioning of contaminated sites / plants
 - Covering / sealing of contaminated areas and landfill sites
- Ongoing chemical monitoring of the effectiveness of the measures

1989: Plateau Grobbergehalde Davidschacht



2018: Plateau Grobbergehalde Davidschacht



Pictures: SAXONIA Standortentwicklungs- und verwaltungsgesellschaft mbH

- Project costs 38 Mio. Euro (1993 – 2013)
- Aftercare and further remediation measures in the area, e.g. at the Davidschacht Freiberg 2012 – 2035 (5 to 10 Mio. Euro)

Conclusion on the current implementation / objectives of the declaration of intent

- Significant improvement in terms of pollutants typical for the Elbe in the period after 1990
 - Nevertheless, the recommendations of the sediment management concept of the RBC Elbe and ICPER have only been implemented to a limited extent to date
- Objectives of the declaration of intent
 - Consistently continue to prioritise measures (work expert group)
 - Planning and implementation of measures
 - Cost-benefit analysis
 - Exploit existing and examine new financing options
 - Holistic view -> development of „win-win-situations“
 - concerning the water body itself / various areas of law
 - Integration of other approaches, e.g. integrated watercourse and floodplain development
 - Clarification of key issues relating to the reuse and disposal of contaminated sediments in line with the circular economy („sediment as a resource“)

Conclusion on the current implementation / objectives of the declaration of intent

- Further objectives of the declaration of intent
 - Continue to realise all necessary, proportionate, sediment-related and near-source measures to achieve the requirements of the WFD and MSFD (sustainable reduction of pollutant loads)
 - The required reduction of pollutant discharges and displacements can only be achieved,
 - if identification and realisation of the most effective and cost-efficient measures together possible (national / international level with the help of the Länder and the Federal Government)
 - targeted within a 10-year period
 - if reduction of pollutant loads is given the necessary environmental policy weight
 - Sediment management expert group RBC Elbe: continue to closely and actively support the process, concretisation of tasks e.g. by the *Elbe-Rat* RBC Elbe

Thank you for your attention.

Many thanks to

- Matthias Wolf (RBC Elbe's Liaison Office)
- Susan Zimmermann / Michael Trump (Saxony-Anhalt)
- Dr. Christin Jahns (Saxony)
- Ilka Carls (Hamburg)

for contributions to the presentation.

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Available on the website of the RBC
Elbe's Liaison Office (in German):

- SeMC RBC Elbe
- Short reports Implementation SeMC
- FG-/L-Position paper
- FG-/L-Declaration of intent
- Conceptual analysis of tributaries (hydromorphology)

<https://www.fgg-elbe.de/dokumente/fachberichte.html>
(subitem „Sedimentmanagement“)

SeMC ICPER available here:
<https://www.ikse-mkol.org/publikationen> (subitem
„Wasserrahmenrichtlinie“)