

Strategic Research Agenda (SRA)

Summary:

- Understand the sediment balance. It's crucial to know if there is an excess (loss of water depth, flooding) or shortage (erosion, shore scouring) of sediments.
- For the sediment balance we need to look on river catchment scale, including the impact on the coastal area.
- We should look into the impact of climate change, leading to higher discharges and longer periods of draughts. We also do not know enough on the current natural fluctuation in the sediment transport behavior, and the timescale of changes.
- We need to share the knowledge available in Europe on contaminated sediments. This includes differences in legislation and the impact this has on the use of sediment as a resource. This could result in a EU guideline.
- We should look into (emerging) contaminants, and ways to clean up sediments without disturbing the natural sediment balance (in-situ treatment?)
- We should look into the Social cost and benefits of more or less sediments. Looking both at cross boundary issues and benefits for local communities.

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Group 1:

- Sediment balance, from the land to the water site. Effective measures to restore the sediment balance.
- Sediment transport at the river basin scale. Understand the sediment balance. What is the system carrying capacity for withstanding change. Hysteresis of the system (timescale).
- What is the impact of the sedimentation behind hydro dams. Pressure on the one site, scouring on the other site. Quantification of risk. Priority setting for measures.
- Effect of sediment load on the river discharge capacity. Also including the wave height and flow velocity.
- Management of the contaminated sediments. Risk evaluation and bio-availability. Is there a risk. Standardization.

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Group 1:

- Clear legislation. What is done where? Dissemination of knowledge. EU sediment guideline. Strive for a common approach.
- Lack of knowledge on sediment balance in rivers and coastal area's. Prevent scouring and erosion.
- Social cost and benefits of more or less sediments. Look at cross boundary issues.

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Group 2:

- High floods, sediment quality events in relation with flood events, erosion of contaminated sediments.
- Gathering all information on the impact of sediment on the water quality (chemical and ecological; how does it impact the WFD system status).
- Impact of climate change scenario's on hydro morphology.
- Investigate cleaning of sediments instead of taking them out.
- More studies on the long term impact of additives like polymers. It has to be sustainable, not postpone the problem.
- Temporal aspects of sediment loading. Draughts versus periods of high discharge.
- Do we have a good understanding of the baseline? As an example variation of turbidity.

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Group 2:

- Keep the sediment navigable
- Impact sediment deposition on water shed health
- Better methods to detect contaminants

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Group 3:

- Link between the local economy and the river/sediment function/service. Cost of doing nothing not always clear.
- Communication. Bio-availability of contaminants. How to combine functions/reuse the material in which context? More awareness on fit for purpose of sediments.
- Share information on impact of measures, like dewatering and re-application of the sediment. What is the water quality and impact on sediment properties.
- Understanding morphological behavior of the sediment. Validation data and model development.
- Sediment distributed on soil during flooding. Soil quality after flooding

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Group 3:

- Coastal mapping quantity and quality. Results available for all.
- Risk evaluation of sediments, if total sediment concentrations are exceeded. Also, if you have a ecotoxicological impact, what is causing this impact?
- Define criteria for reuse.
- Sediment radar. What is the risk for a forecasted flooding on spreading of contaminated sediments?
- Correlate sediment to water quality, including all the drivers like shipping, channel depth, wind waves, etc. Derive the right parameter for each water body.
- Correlation between soil and sediment, what is the same and what is different?
- Bringing together all the results on sediment pollution studies.