



Summary report SedNet Special Session

Dredged material assessment nowadays and in the future

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The special session on “Dredged material assessment nowadays and in the future” was organised and held in cooperation with DGE. **DGE** (Dredging in Europe) is a European platform for exchanging knowledge, information and experiences in the field of sediment and dredged material management.

The session was structured into two main sections. It started with three invited talks given by Chris Vivian (Cefas, UK), Todd Bridges (U.S. Army Engineer Research and Development Centre), and Wolfgang Ahlf (Technical University of Hamburg, Germany). In England and Wales (C. Vivian) dredged material assessment is a two part process of (i) information gathering and (ii) detailed assessment focusing on what the environmental implications are likely to be and on their acceptability. The final advice to the management authorities comprises an examination of the most likely environmental problems, a consideration of mitigation options, and the assessment of compliance of dredging with the Water Framework Directive (WFD). The dredged material assessment in the United States (T. Bridges) in the last 10 years moved toward a risk-informed decision making. In the risk assessment and management process a weight-of-evidence (WOE) approach is applied relying on multiple lines-of-evidence (LOE) thus reaching conclusions regarding the potential risks to receptors identified within the used conceptual model, e.g. for the placement of dredged material in open water. A tiered process of (i) evaluation of existing data, (ii) chemistry, screening, and models, (iii) toxicity and bioaccumulation bioassays, and (iv) site or region specific analysis is followed as far as necessary to make a decision. Finally a risk-informed decision is taken that can be justified in terms of quantitative evidence about risk reduction. The European research project SMOCS (W. Ahlf) aims at a participatory approach to establish guidelines for sustainable dredged material assessment in the HELCOM region. Clearly, risk reduction is not only a question of reducing the concentration of pollutants, but also reducing bioavailability. The SMOCS vision makes obvious that a sustainable sediment management is only achievable on a new spatial and time scale by including principles of life cycle thinking into management decisions.

The second section was opened with short statements of representatives from six European countries (Denmark, France, Germany, Italy, The Netherlands and UK) each addressing major problems in dredged material assessment from their respective national perspectives. These statements were followed by an audience discussion and the agreement on key messages from the session to the conference.

Dredged material assessment nowadays and in the future:

- has to account for the whole life cycle and address sustainability
- needs for better integration of different legislative and guidance frameworks
- has to be problem-oriented/risk-based
- has to be proportionate
- should integrate the management and protection goals
- should make better use of options through improved communication with stakeholders based on dredged material as a resource
- should be based on a better understanding of the system and its interactions; in that respect monitoring could be crucial



- as for protected areas there is a need to demonstrate that conservation objectives are not compromised. The environment outside the dredging and disposal sites should not be significantly affected
- should rely on effect-based criteria (sediment quality guidelines based on the response of the ecosystem in situ and at the relocation site); environmental quality standards of sediments should be based on a regional (e.g. river basin) approach taking local conditions into account
- should use WOE approaches and a better understanding of integrating the LOE
- is integrated as relevant issue from the very start when developing new technical and environmental specifications e.g. applying working with nature approach
- is transparent and scientifically sound, thus helping to overcome negative risk perception of dredging and dredged material in the public domain
- should be developed in a dialogue between scientists, regulators, users and practitioners
- does not replace the decision but provides a scientific assessment of decision options.

Dredging is one of the core activities in order to maintain and develop ports, harbours and navigable waterways. Globally, many hundreds of million cubic meters of sediment are dredged annually, mostly in coastal areas. There are many ways that dredging and disposal may affect the environment. The overall management goal of any dredging project should be to achieve a sustainable solution, weighing and balancing all the associated risks and benefits. While in the past economic benefits were maximized while minimizing environmental damage, in the future the benefits should be expanded and optimized across all three sustainability domains.