SedNet - Special Session

Dredged Material Assessment Nowadays and in the Future

A German Perspective (Federal Waterways)

Birgit Schubert, Federal Institute of Hydrology
Effect categories for risk assessment of dredging and disposal operations

- Contaminants (including toxic effects)
- Water chemistry
- Water balance and sediment transport
- Hydromorphology
- Biology/Ecology

Risk assessment using indicators
Major deficits in the current approach

1. **Rigid regulations, e.g.:**
   - a fixed set of action levels for the whole German North Sea region (including estuaries up to the freshwater limit)
   - Contaminant concentrations in and ecotoxicological effects of dredged material are assessed separately

2. **Characteristics and understanding of the aquatic system are not taken into account sufficiently, e.g.:**
   - dynamics of the water phase, sediment/suspended matter transport, chemical biochemical transformations
Major deficits in the current approach

3. Insufficient consideration of the new European Framework Directives, e.g.

> The assessment does not consider river basins and it differs for inland and coastal waterways

> Criteria for biological/ecological (Flora-Fauna-Habitat) and hydromorphological impact assessments are not described sufficiently
Planned improvements

- Problem-oriented assessment by
  - Better consideration of the understanding of the system
  - Regional assessment criteria for contaminants, regular update
  - Consideration of the dynamics of the system

- Risk based assessment of the environmental effects of dredged material disposal
  - Tiered selection of contaminants;
  - Combination of chemical and ecotoxicological assessment;
  - In case of grounds for suspicion investigations towards cause-effect relation (additional specific ecotoxicological tests);
  - Establishment of criteria for biological/ecological and hydromorphological assessments

- Consideration of cumulative effects
Planned improvements

- Problem-oriented assessment by
  - Better consideration of the understanding of the system
  - Risk based assessment of the environmental effects of dredged material disposal
  - Consideration of cumulative effects

- Reasonableness of efforts compared to problems
  - Routine measures with sufficient information require low efforts
  - Measures with suspected problems (e.g. large amounts of dredged material, high contamination level, sensitive areas) may require complex investigations
  - Complex investigations also may be necessary for other objectives, e.g. related to ecological improvements
Future assessment of dredged material

Schematic, rigid assessments of contamination

No defined scheme for hydromorphological and biological/ecological assessments

More problem-oriented assessments

Dredged Material Management as part of Sediment Management Concepts
Thank you for your attention!

TSHD at Cuxhaven

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