European sediment regulations: Gaps and bridges

Helge Bergmann
Federal Institute of Hydrology
Koblenz (Germany)
Professional background

- contaminants in water
- contaminants in sediments
- dredged material assessments
- dredged material guidelines and standards
  - international (e.g., conventions, PIANC)
  - national (federal coastal waterways)
WG 5 book: Risk management & communication (chapter 9)

“Diversity of sediment regulations and monitoring programmes in Europe“

Helge Bergmann and Vera Maaß (Hamburg)
... In the next minutes ...

- Existing regulations
- Gaps
- Consequences of gaps
- Bridges
Why sediment regulations?

A watercourse may be

- a natural recipient for rain, eroded soil etc.
- a natural ecosystem
- a drinking water reservoir
- an irrigation reservoir
- a waste recipient
- a pleasure space
- a fishing area
- a waterway
Why sediment regulations?

- to agree on the functions of a water body
- to assess their advantages and risks involved
- to integrate demands and boundary conditions from the many claims involved
- to reach regional, national or transboundary agreements
- to obtain optimal water management at a minimum of ecological impacts and costs
Overview

Regulatory instruments for sediment management

- United Nations Economic Commission for Europe
- European Union
- International maritime conventions
- International river commissions
- National regulations
United Nations Economic Commission for Europe

- promoting cooperation among riparian states in a water catchment area
- no intention to develop any guidance for sediment management
European Union

- the European Waste Catalogue (EC, 2000)
- European Landfill Directive (EC, 1999)
{ EU Strategy for Soil Protection (EU, 2002) }
## European Union

<table>
<thead>
<tr>
<th>Directive</th>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Impact Assessment</td>
<td>97/11/EC</td>
</tr>
<tr>
<td>Water Framework Directive (WFD)</td>
<td>2000/60/EC</td>
</tr>
<tr>
<td>Surface Water Directive</td>
<td>75/440/EEC</td>
</tr>
<tr>
<td>Drinking Water Directive</td>
<td>80/778/EEC</td>
</tr>
<tr>
<td>Bathing Water Quality Directive</td>
<td>76/160/EEC</td>
</tr>
<tr>
<td>Groundwater Directive</td>
<td>80/68/EEC</td>
</tr>
<tr>
<td>Fish Water Directive</td>
<td>78/659/EEC</td>
</tr>
<tr>
<td>Shellfish-Water Directive</td>
<td>79/923/EEC</td>
</tr>
<tr>
<td>Wild Birds Directive</td>
<td>79/409/EEC</td>
</tr>
<tr>
<td>Dangerous Substances Directive</td>
<td>76/464/EEC</td>
</tr>
<tr>
<td>Urban Wastewater Treatment Directive</td>
<td>91/271/EEC</td>
</tr>
</tbody>
</table>
### International maritime conventions

<table>
<thead>
<tr>
<th>Name of convention</th>
<th>Convention area</th>
<th>Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>LONDON</td>
<td>Globally marine areas</td>
<td>Specific guidelines for assessment of dredged material LC 22/5/Add.1 (2000)</td>
</tr>
<tr>
<td>BARCELONA</td>
<td>Mediterranean Sea</td>
<td>none</td>
</tr>
</tbody>
</table>
International maritime conventions

- an average volume of 120 Mio. \( m^3 \) (dry weight) of dredged material is yearly managed

- the only Europe-wide harmonised sediment management
International commissions for transboundary rivers
International commissions for transboundary rivers

- action plans focus on pollution abatement and improvement of the ecological status of the waters
- sediment phase does not play any major role in their river management
- Exception: International Rhine Commission has recommendation for the relocation of sediments / dredged material
National regulations

- European member countries of marine conventions have developed their specific national guidelines for handling dredged material in coastal waters
- complex picture
- no overview
Overview: Conclusions

- On a European level sediment management is not covered by specific regulations.

- In part sediment management is taken account of in several European directives (directly - indirectly).

- Guidelines for coastal dredged material have been developed by international maritime conventions.

- Some European countries have developed their specific national guidelines for dredged material.
Gaps in sediment regulations:
1 - International dredged material guidelines

- International guidelines set up by maritime conventions are *per se* limited to sediment management in coastal areas.
- Analogous guidance is lacking in inland waters.
### Gaps in sediment regulations: 2 - Dredged material and waste

<table>
<thead>
<tr>
<th>Source</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Framework Directive on Waste (75/442/EEC), Article 1</td>
<td>“For the purposes of this Directive &quot;waste' shall mean any substance or object in the categories set out in Annex 1 which the holder discards or intends or is required to discard.”</td>
</tr>
</tbody>
</table>
Gaps in sediment regulations:
2 - Dredged material and waste

Dredged material

<table>
<thead>
<tr>
<th>Clean</th>
<th>Contaminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>No ecotoxic effects</td>
<td>Ecotoxic effects</td>
</tr>
</tbody>
</table>

Disposal harmless | Disposal harmful

! EU definition: waste

EU definition: waste
Gaps in sediment regulations:
3 - European Waste Report 2003

- It describes the management of ca. 800 Mio. tonnes of all kinds of waste.
- Dredged material not being mentioned.
- Compared to this amount the dredged material in Europe (> 120 Mio. m³ ) is no negligible quantity.
- Therefore, dredged material was forgotten in the report or was not regarded as waste.
Gaps in sediment regulations: 4 - Control of contaminant sources

The "polluter pays" principle: How should it work?


*In accordance with the ‘polluter pays’ principle, the cost of disposing of waste... shall be borne by:*

- *the holder who has waste handled by a waste collector or by an undertaking...*
- *and / or the previous holders or the producer of the product from which the waste came.*
Gaps in sediment regulations: 4 - Control of contaminant sources

The "polluter pays" principle:  How does it work?

"Be strict on dredged material, but neglect contamination sources"

- Neglects primary contamination of dredged material
- Weak spot in regulatory frameworks.
Gaps in sediment regulations:
5 - EU Water Framework Directive

- In the European Water Framework Directive (152 pages) the word "sediment" appears only eight times.

- Sediment to be included as a natural component of any water body like water and biota.
Gaps in sediment regulations:
5 - EU Water Framework Directive

Annex 8 of the WFD contains in the "Indicative list of the main pollutants":

"10. Materials in suspension"

- suspended particulate matter = pollutant!
Potential causes:

- Knowledge on the role of sediments in the aquatic environment is lacking, even in expert authorities (e.g. EEA).

- Individual stakeholders in the sediment management, i.e. dredging managers, scientists and policy makers, restrict their activities and interests to their own fields.

- Cooperation between these stakeholders in the sediment management is rarely existing or not effective.
Consequences of gaps:

- Information on the role of sediments in the aquatic environment within policy-maker circles (e.g. EU) is partly lacking.
- Policy-makers, e.g. EU, are badly or inadequately advised in their legal projects.
- Inadequate development of legal guidance for the management of sediment and dredged material (e.g. WFD).
- Uncertainties and difficulties in sediment management, particularly in transboundary rivers.
- Unnecessary efforts in costs and time, e.g. for treatment or disposal of dredged material.
Building bridges

Objectives:

- better understanding of the way of thinking and of the problems among dredging managers, scientists and policy-makers

- improved cooperation in developing new policies, research projects or managerial guidance
Cooperation
Effects of „getting together“

- Improvement of understanding of the thinking and of the problems of the other side
- cooperation in management- (i.e. problem-) orientated scientific research
- joint development of new policies and practical guidance for sustainable sediment management
Examples of „getting together“

Positive examples:

- guidelines from international maritime conventions
- guidance and standards from, e.g., PIANC, CEDA
- the ”Dutch-German exchange on dredged material”
Beyond the EU project

Necessary:
- to look closer at the gaps of present and objectives of future sediment management
Beyond the EU project

Also necessary:

- to interlace personal knowledge with objectives
- to communicate ideas in simple terms
- to enhance the mixed “getting together”
- to take into account target readership

Sednet
Strategy
Paper

project
The bridge to regulations

Sednet Strategy Paper

Sediment Guidance Document

Regulations for sustainable sediment management
5 Political support and legislation

Action field of dredged material stake holders

- Science
- Economy
- Ecology
- Policy