Sediment quality management in the Netherlands

Measures and Prevention

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Sediments and Water Framework Directive

- Dutch Water Act: implementation Water Framework Directive (WFD)

- Sediment quality integral part water management: No sediment quality standards

- But: Sediments (might) still have adverse effect on water body
Water Framework Directive

• WFD objectives
  – Good chemical status
  – Good ecological status

• Programme of Measures

• Prevention
Composing set of WFD Measures

Regional Planning Process

Water quality is not in order

Determine causes

Determine possible measures

Assess measures

Lay down measures in water plan

Determine contribution of sediment
Determine contribution of sediment

- Water Framework Directive and other water functions

Objectives

Guidance document establishes (quantitative) relationship between sediment quality and objectives/standards

Sediment quality
Use of Guidance Document - WFD

• objectives not met
  – chemical standards
  – macrofauna
  – nutrients

• chemical standard - sediment relevant?

• other sources sufficiently dealt with?
Where to use this Guidance Document?

Pre-screening project in National Waters

Research questions for each water body

1. Is sediment a source?

2. Is sediment a relevant source?

3. Should the Guidance Document be used?
4 river basins
52 water bodies

1. Rhine Delta (n=24)
   - North (n=3)
   - Middle (n=6)
   - East (n=3)
   - West (n=12)

2. Ems (n=3)

3. Meuse (n=14)

4. Scheldt (n=11)
Sediment relevant substances that exceed water standards

Chemical objectives

No. exceeding standard?

No. sediment relevant?

17 substances
Water bodies where sediment relevant water quality standards are not met

- **PAH’s** - 45
- **PCB’s** - 30
- **PBDE** - 17
- **TFT** - 16
- **Thallium** - 14
- **Copper** - 13
- **Boron** - 9
- **Zinc** - 9
- **Cobalt** - 8
- **TBT** - 5
Legal tools for prevention

• Decree for Discharges in Waters
  – Temporal discharging (spill)

• Handbook Managing Immissions
  – Discharges from deeper (exposed) layers

• Dutch Soil Decree
  – Relocation of dredged material
Prevention
Dutch Soil Decree – relocation of dredged material

> Trigger value) \(\rightarrow\) Considered **Waste**

Current sediment quality

Applied dredged material

- Free use (< AW2000)
- Class A
- Class B

- Free use (< AW2000)
- Class A
- Class B

- Free use (< AW2000)
- Class A
- Class B

> Trigger value)
Handbook Immission – Sediment Immissions

• release of contaminants sediment = emission – contributes to water quality

• permitted emission depends on current state water quality
Handbook Immission – Sediment Immissions

Chemical status not good           Good chemical status

Water quality standard

Permitted immission depends on current state
Sediment Immission - Tool

$T_0$: SM content with SM quality
$T_1$: SM content + extra discharge with “new” SM quality
With Contributions of Deltares

Thanks for listening!

The Guidance Document is available in English