

WFD Lille 2010

# **Sediment – an essential, integral and dynamic part of any river system – in European River Basin Management Plans**

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# SedNet

## Mission:

A European network aimed at incorporating sediment issues and knowledge into European strategies to support the achievement of a good environmental status and to develop new tools for sediment management.

## Identity:

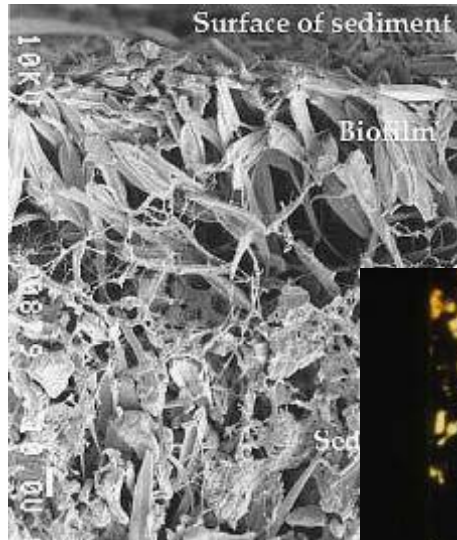
- Network of sediment professionals
- Independent platform to expert advice
- Positioned between science and stakeholders
- Window on sediment issues to EC DG Environment

## Focus:

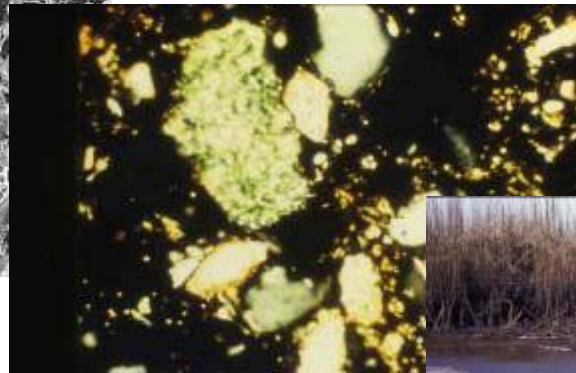
- Sediment quality AND quantity issues
- River basin scale
- Including marine / estuarine sediments



# Sediment looks fascinating...



through electron  
microscope



through light  
microscope



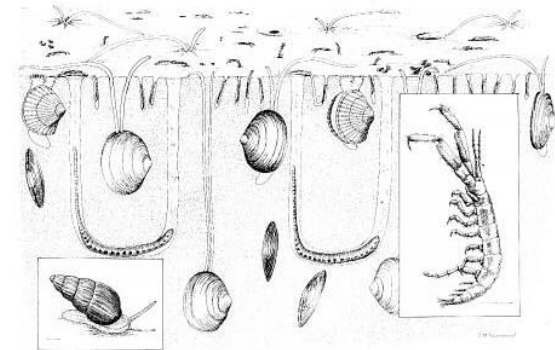
in the field

from the air



# The importance of sediment (Martin, 2002)

Too much sediment	Too little sediment	Sediment as resource
Obstruction of channels Rivers fill and flood Reefs get smothered Turbidity	Beaches erode Riverbanks erode Wetlands are lost River profile degradation	Construction material Sand for beaches Wetland nourishment Soil enrichment Habitat and food for life



Sediment =  
essential and integral part of our river basins



# Perception of sediments

(Hakstege, SedNet conference 2004)



Invisible



Toxic



Difficult



Waste



Not sexy

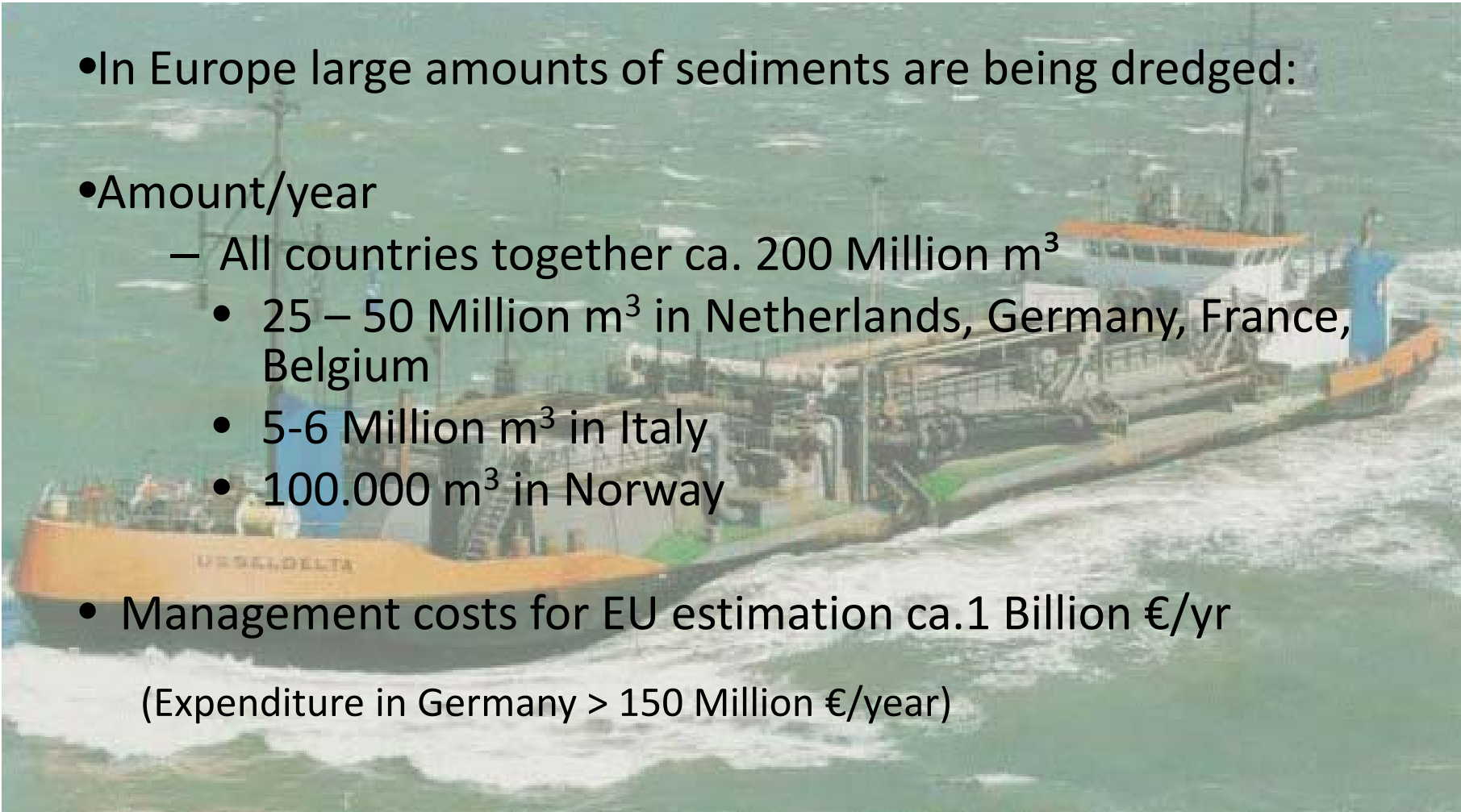


Nimby



# Dredging in Europe

- In Europe large amounts of sediments are being dredged:
- Amount/year
  - All countries together ca. 200 Million m<sup>3</sup>
    - 25 – 50 Million m<sup>3</sup> in Netherlands, Germany, France, Belgium
    - 5-6 Million m<sup>3</sup> in Italy
    - 100.000 m<sup>3</sup> in Norway
- Management costs for EU estimation ca.1 Billion €/yr  
(Expenditure in Germany > 150 Million €/year)



# Sustainable Sediment Management

(according to SedNet)

## Find solutions

- in the context of the whole river system
- carefully balancing environmental and socio-economical values
- in increased interaction with stakeholders
- embracing the whole soil-water system (integrated solutions)
- respecting natural processes and functioning
- not resulting in up-/downstream impacts, not now or in the future



# SedNet Recommendations 2004

## EU policy development:

Integrate sustainable sediment management into the European Water Framework Directive.

## Sediment management:

Find solutions that carefully balance the socio-economic and environmental values and that are set within the context of the whole river system.

## Research:

Improve our understanding of relation between contamination (hazard) and its actual impact to ecology and develop strategies to assess and manage the risks involved.



# WFD and Hydro-morphological pressures

(CIS Policy Paper 2006)

- “Sediment transport management approaches could be progressively introduced in the (sub) basin management plans.
- Sediment transport is a key consideration for certain water uses and in determining hydro-morphological status or physical alterations at the river basin scale.
- Sediment transport is not directly addressed by EU specific legislation. Some international conventions do regulate certain marine related activities, such as the disposal of dredged sediment in estuarine and coastal areas.
- It seems already possible to take into account this issue in some cases. For example ... in estuaries used for navigation purposes
- For the longer term, investments are needed to improve knowledge and understanding of sediment transport at the river basin scale.”

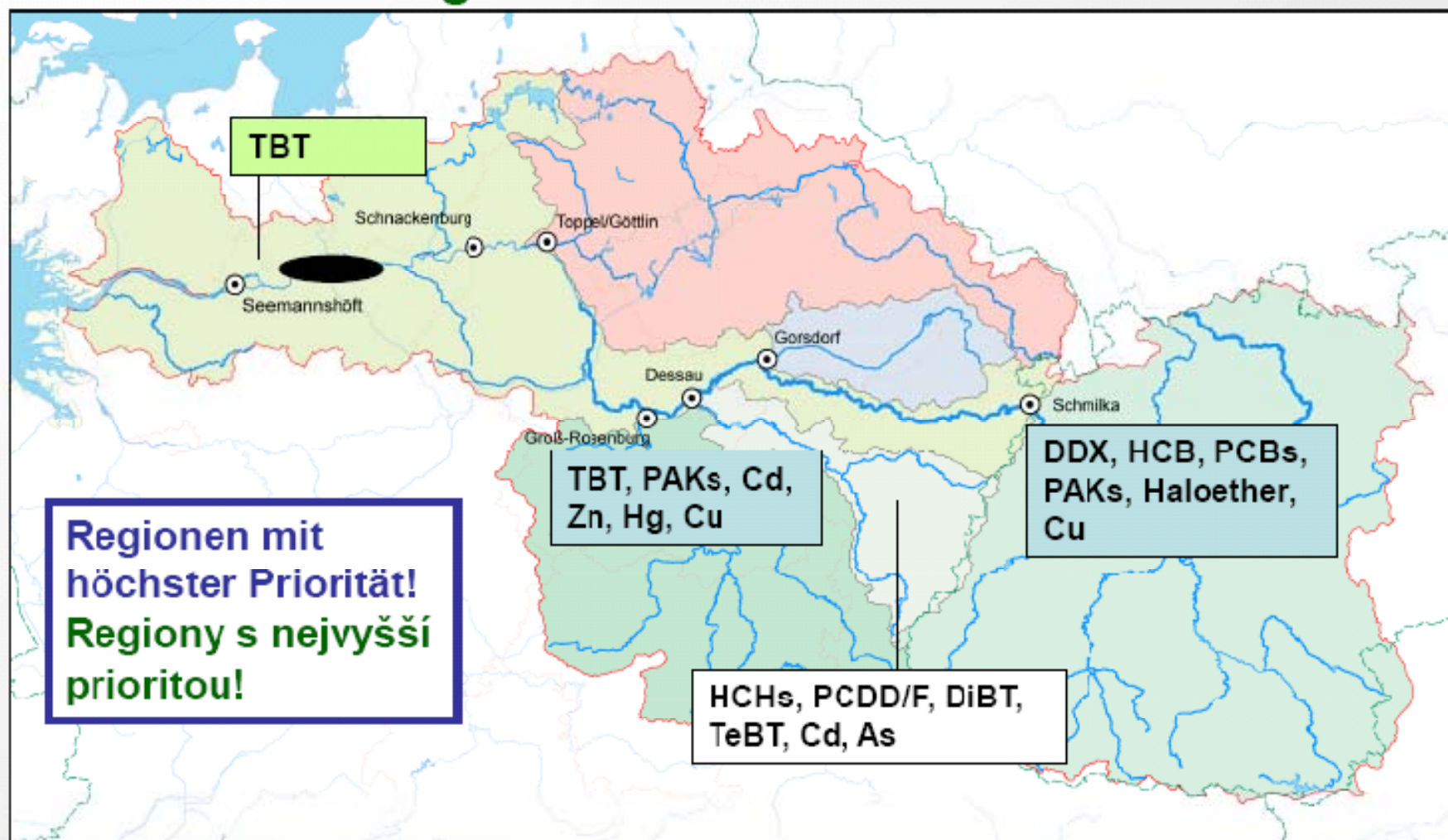


# Priorisation example; based on SedNet



# Von welchen Regionen geht ein Risiko für Schnackenburg und Seemannshöft aus?

Ze kterých regionů vychází riziko pro Schnackenburg a Seemannshöft?



# Legacies of the past



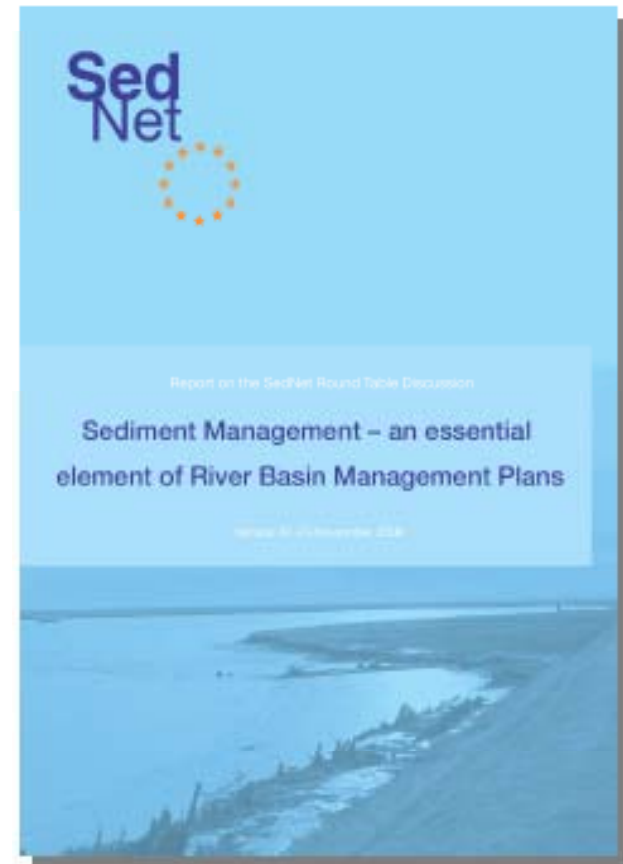
*Bild 5: Durchfluss der Freiburger Mulde am Altlasten-Standort Freiberg-Muldenhütten; rechts Halden der ehemaligen Arsenhütte mit Hochwasserlinie (Foto Rank 07.09.2002)*

# River Basin Sediment Management in Europe

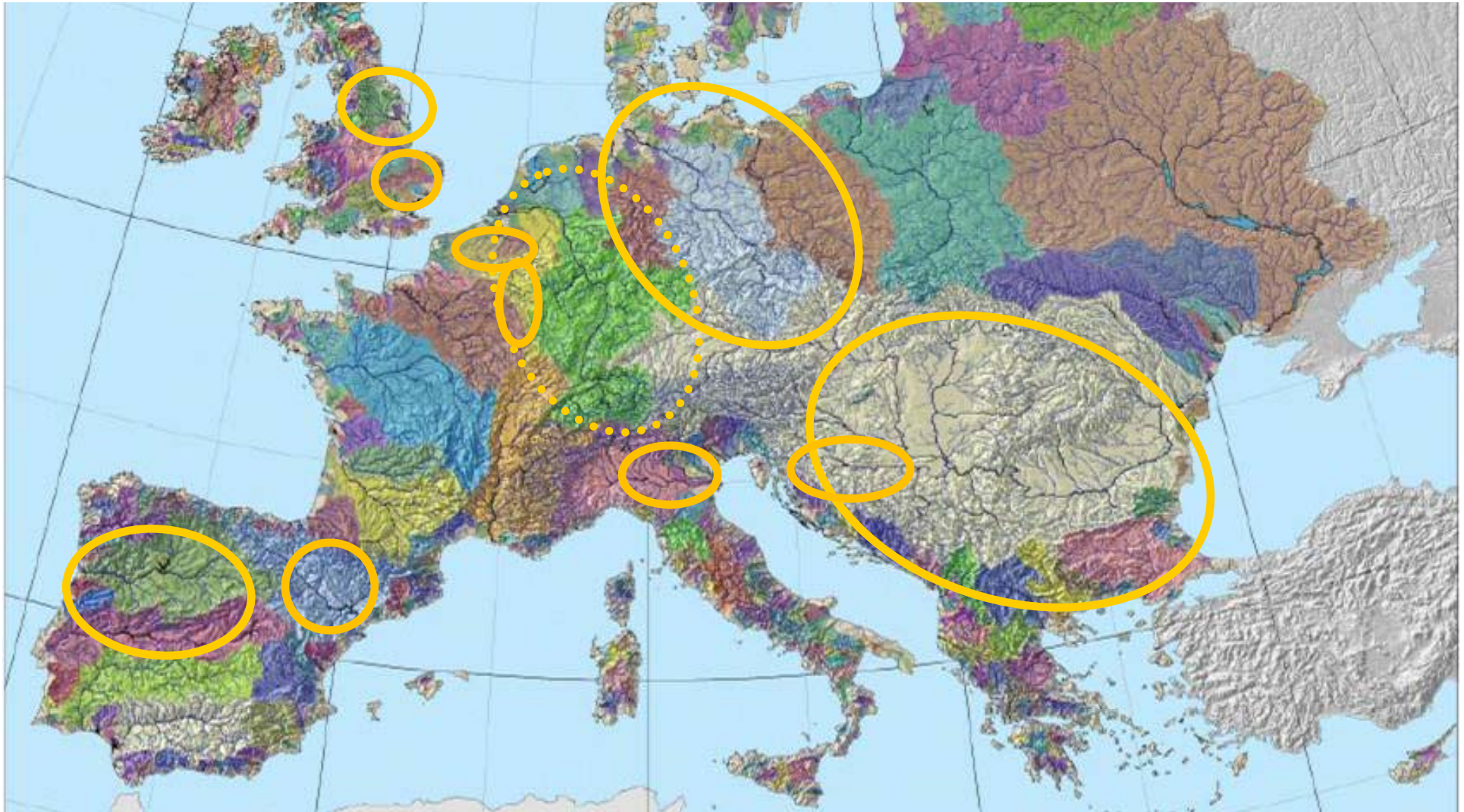
## SedNet Round Table Discussions

- Venice | 2006
- Hamburg | 2009

Delegates from river commissions,  
user groups, science



# Round Table River Basins



# Conclusions Venice 2006

- Each river basin has specific natural characteristics, uses, history, challenges.
- Sediment Management is an issue in all river basins.
- Estuaries are different from rivers; WFD thinking is very 'fluvial'.
- Sediment Quality Standards = high level screening values.
- Integration of requirements of different EU and legislation.
- EU Policies may create conflicting ambitions.
- Sediment quantity and quality issues are closely interrelated.
- To develop RBSM make use of existing methodology and guidance.
- Draw on other river's experiences.



# SedNet EU RBMP review, April 2009

- Draft WFD River Basin Management Plans (RBMP) were published early 2009.
- There is a huge diversity in how sediments are addressed, sometimes there aren't addressed at all.
- Some RBMPs indicate that sediments are or that they may become an issue.
- Generally sediment management (quantity and quality aspects) received limited or no attention.
- Full integration is exceptional.
- Targeted measures are not (yet) included.



# Objectives of the Hamburg Round Table

To understand the present RBMP's:

- How are sediment issues addressed?
- Which opportunities were identified?
- How is sediment management organized ?
- What are the dominant processes and interests behind it ?

Recommendations for sediment management, e.g.:

- Outside/inside WFD
- Relation to WFD objectives
- How to include in 2<sup>nd</sup> cycle of RBMP's



# Results: System understanding

- The key to managing sediments is to take a holistic approach:
  - System understanding
  - Transboundary cooperation
  - Look at linkages between problems and issues across the whole RB and its components
- Communication and stakeholder involvement are keywords: social / consensus issues can be predominant on technical issues.
- RBMP's should include all linkages to ecosystem services (flood protection, habitats, sediment retention, sediment re-use, navigation, recreation, food production, etc.).



## Results: Dealing with uncertainties

- Priority for costeffective measures with high certainty of positive effects for achieving management objectives.
- Do not use uncertainty as an excuse to do nothing, e.g. define „no regret measures“ (reversible/linkage with other management objectives).
- Stakeholder involvement will help making choices.



## Results: Linking sediment to WFD (and other frameworks)

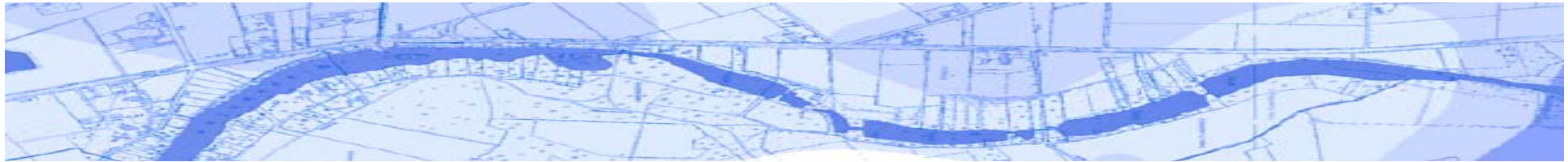
- Sediments are an integral part of the ecosystem and affect ecological and chemical status: this should be clearly communicated through good examples.
- Providing a better understanding of the linkage between sediment quality / quantity and WFD objectives will enable better RB planning, e.g.:
  - develop conceptual model of sediment fluxes and contaminant transport
  - understand sediment balance and dynamics of the system
  - link sediment features to ecological and chemical status
  - consider climate change issues – potential consequences



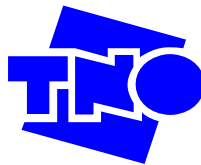
## Results: Guidance document

- Guidance how to include sediment management in RBMP's: show examples that demonstrate how sediment management makes RBM more effective.
- Guidance how to organize the process.
- To be used by national competent authorities & the river basin managers.
- Initially a SedNet product?





Thank you for your attention!



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