SedNet: the evolving, European Sediment Network

www.sednet.org

June 2016

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- SedNet ‘development lines’:
  - Problem stream
  - Policy stream
  - Political stream

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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.

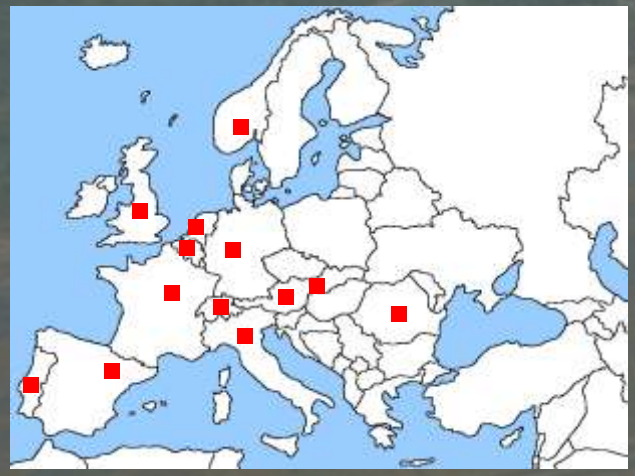
Contribute to the further development of a holistic understanding of sediments and their management.

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 in a ICZM context



SedNet steer group (June 2016)

Port of Rotterdam Authority	**Marc Eisma** *(Chairman SedNet Steering Group)*
CORILA	**Andrea Barbanti**
IDAEA-CSIC	**Damià Barceló**
Norwegian Geotechnical Institute (NGI)	**Gijs Breedveld**
Deltares	**Jos Brils and Katherine Cronin**
Hamburg Port Authority	**Henrich Röper**
Federal Institute of Hydrology (BfG)	**Peter Heininger**
Hamburg University of Applied Sciences	**Susanne Heise**
Port Authority Antwerp	**Agnes Heylen and Eric de Deckere**
International Commission for the Protection of the Danube River (ICPDR)	**Igor Liska**
BRGM	**Bruno Lemière and Philippe Negrel**

ISPRA, Italian National Institute for Environmental Protection and Research	**Antonella Ausili and Elena Romano**
Dutch Ministry of Infrastructure and Environment	**Richard Eertman and Pieter de Boer**
Ecotox Centre	**Carmen Casado and Benoît Ferrari**
IPMA – Portuguese Institute of Sea and Atmosphere	**Carlos Vale**
Flemish Government, Dept. Mobility and Public Works	**Edward Van Keer and Jürgen Suffis**
OVAM, Public Waste Agency of Flanders	**Goedele Vanacker**
University of Natural Resources and Applied Life Sciences, Vienna (BOKU)	**Helmut Habersack and Marlene Haimann**
Rothamsted Research – North Wyke	**Adrian Collins**
SEDILAB by cd2e	**Samira Brakni**
GeoEcoMar	**Adrian Stanica**

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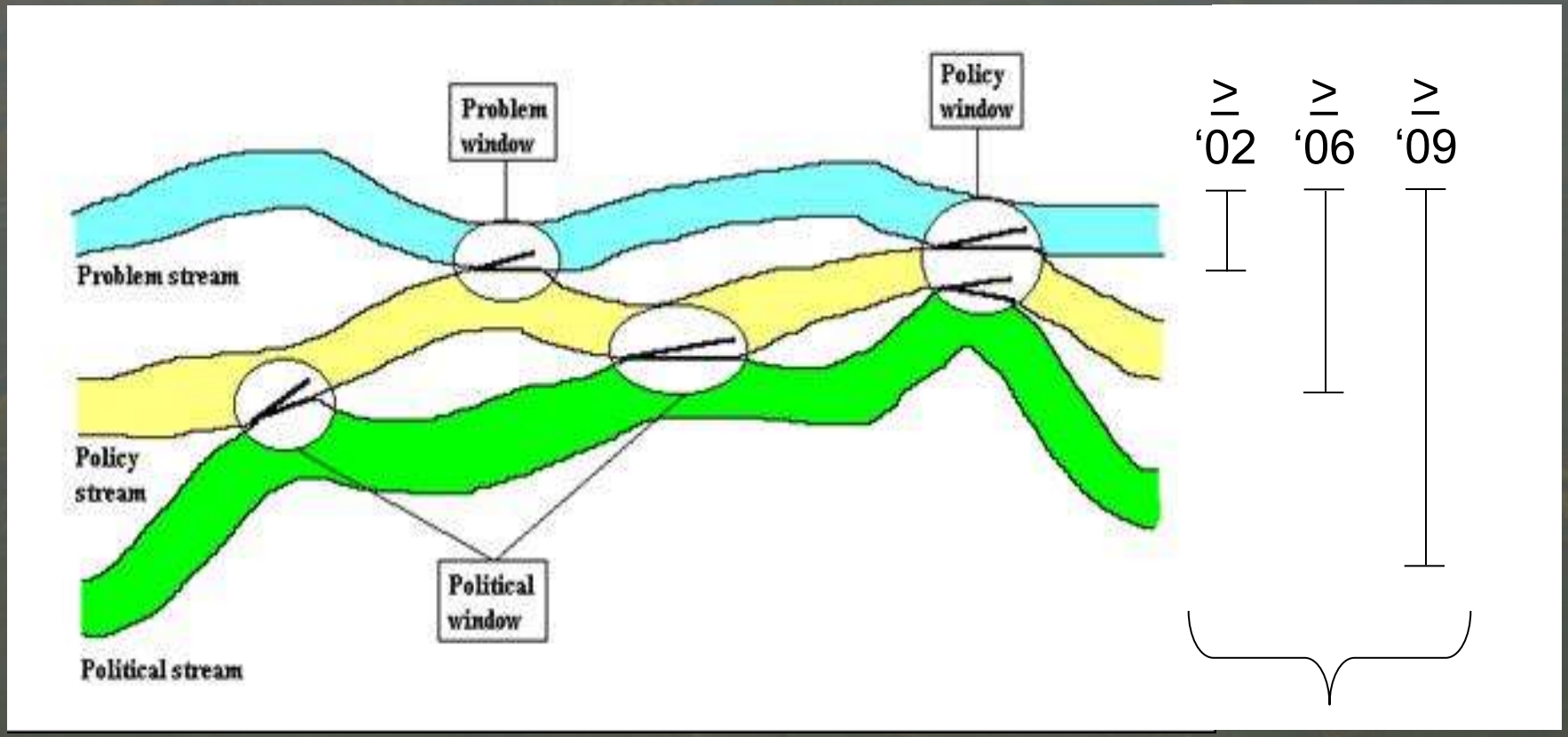
SedNet develops at 3 ‘streams’



from research- to influential- network

Source figure: Kingdon, 1992

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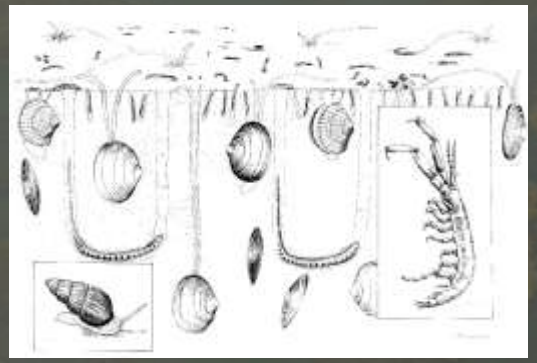
The ‘problem’ defined (2004) …

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



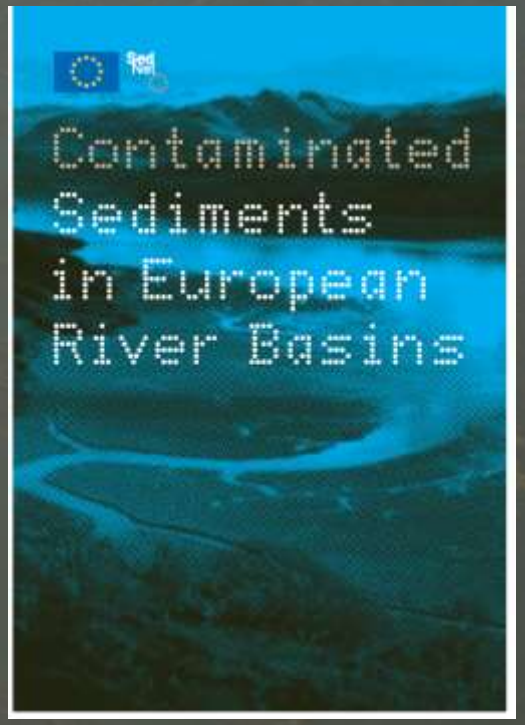
Sediment = “no waste” =
essential & integral element of river systems

Source scheme: Martin, 2002

… but also the problem solving direction

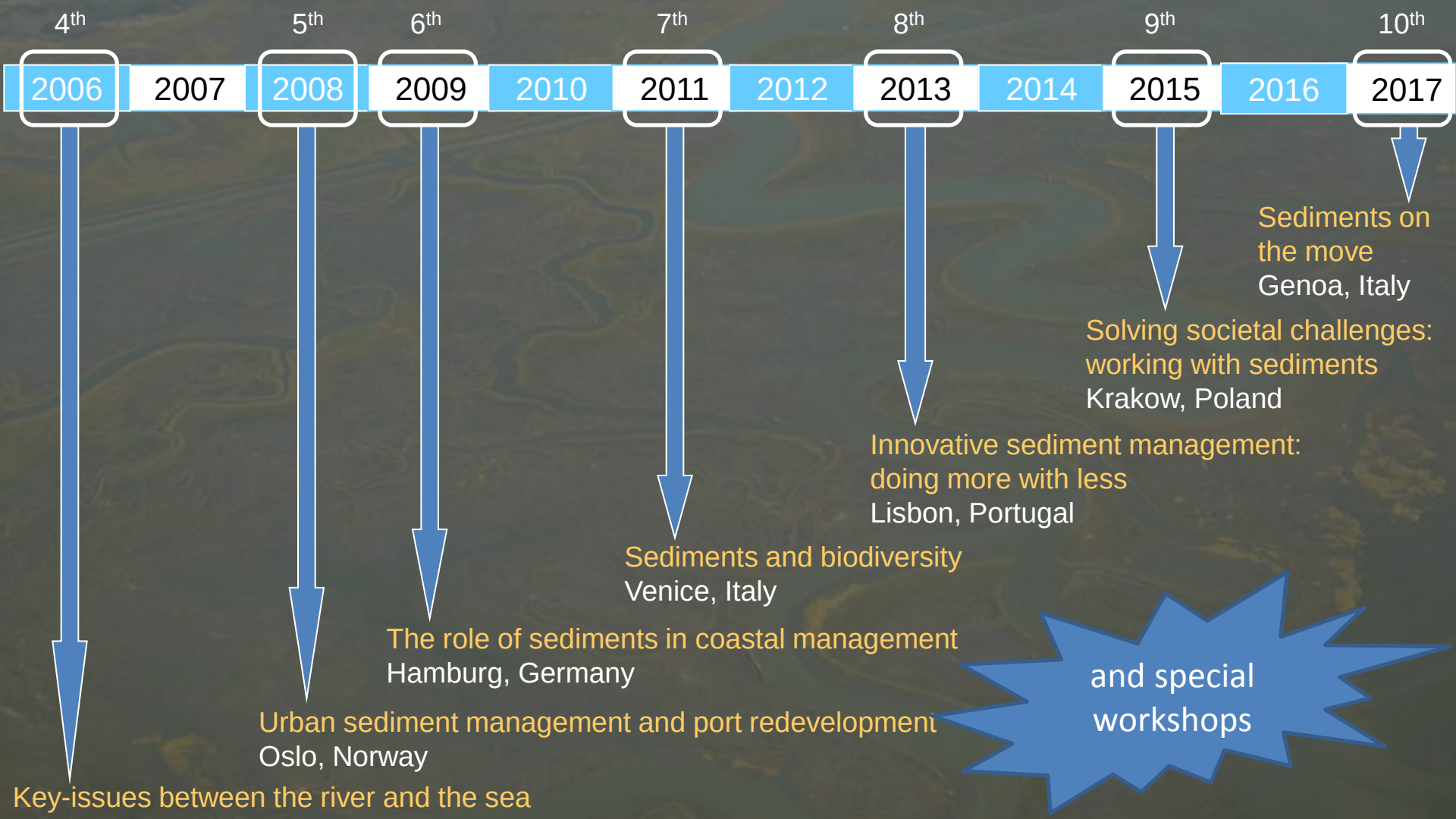
Find solutions (also sustainable sediment management principles):

- In the context of whole river system
- Carefully balancing social, economical and environmental values
- In increased interaction with stakeholders
- Embracing the whole soil-water system (integrated solutions)
- Respecting natural processes and functions
- Not resulting in unwanted impacts elsewhere in the river basin (up- or downstream), not now, nor in the future



Source: Salomons & Brils (Eds.) 2004

Sharing problems and solutions



10th SedNet Conference

SedNet received two offers for hosting: Genoa/Italy & Dubrovnik/Croatia:

- Both are attractive locations
- Genoa already candidate in 2009, but then was chosen for Lisbon
- Therefore the SG decided to accept the offer of Genoa

Genoa:

- Preference for conference in June 2017
- Working title: "Sediments on the move"
- Topics (preliminary):
    - MAES
    - Transboundary sediments
    - Port/marine session
    - Session with PIANC
- Delegates Genoa invited for next SG meeting: 27-28 June 2016, NGI, Oslo

When sediment becomes soil and soil becomes sediments

workshop

Objectives:

- Overview relevant aspects of this transition
- Raise awareness towards this issue

Three day workshop in two parts:

1. Discussion/analysis of the basics: what known, what not aware of? How will geochemical properties, contaminant and nutrient fate and behaviour, bioavailability of contaminants etc change during transition?

2. What are the implications on management decisions?

Contact: Prof. Susanne Heise, Susanne.Heise@haw-hamburg.de

Sediment management in estuarine / brackish environment

workshop

Objectives:

- Valorisation of research for management and policy
- Enhancing SSM in estuarine environments
- Discussion risk based approach (port environment)
- Identification of research needs
- Networking

Two day workshop with three sessions:

1. Sediments and pollutants affecting water quality
2. Quality assessment assuring ecosystem functions
3. Perspective on risk management in the future

Contact: Eric de Deckere, Eric.deDeckere@portofantwerp.com

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Three examples:

- Key-messages brochure
- Round Table Discussions
- MAES sediment

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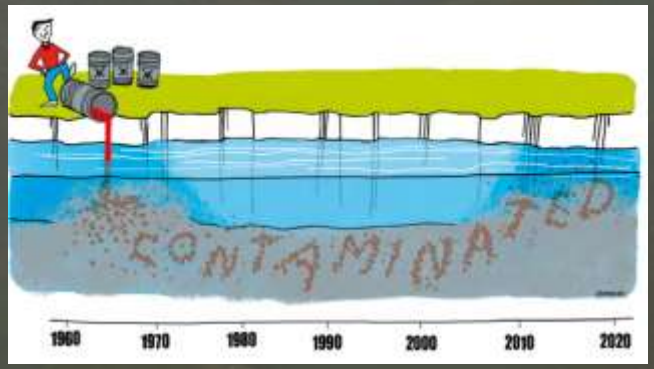
Four SedNet messages (2014)

Sediment quantity & hydromorphology

Sediment & river ecology

Dredged material management

Sediment quality & remobilization



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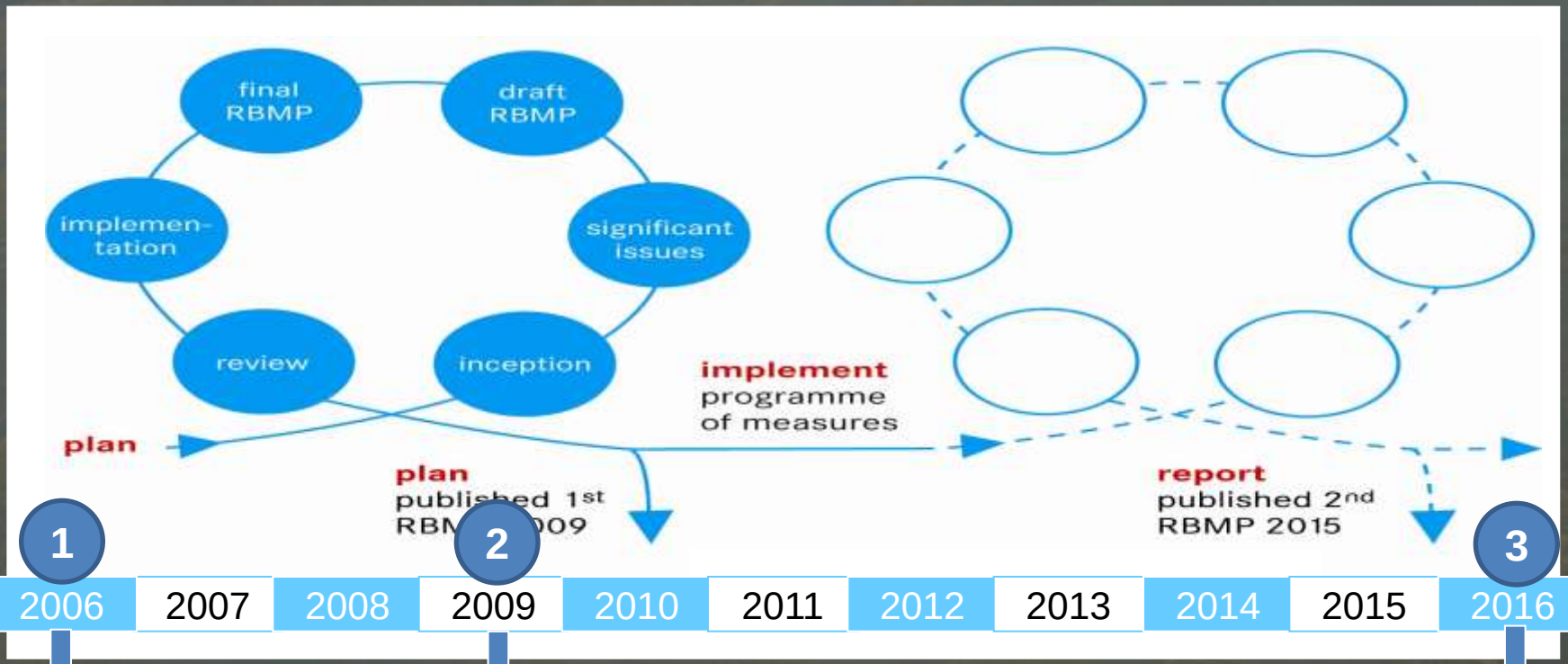
SedNet Round Table Discussions (RTD)



Sediment management essential element RBMP

Integration of sediment in river basin management

Elbe meets Danube

RTD Elbe meets Danube (1)

3th SedNet Round Table Discussion, 8-9 November 2016 Budapest:

Background:

- International Commission for the Protection of the Elbe River (ICPER) developed a SM concept in preparation for 2nd WFD management cycle
- Concept elaborated by German-Czech sediment expert group, approved by ICPER delegation May 2014
- For first time in Europe, a comprehensive SM concept developed in support of WFD RBMP in a large international river basin

- Concept inspired by – and draws on – work of SedNet since 2002

RTD Elbe meets Danube (2)

Sediment issues:

- Elbe: sediment quality possible reason for not meeting WFD objectives
- Danube: sediment quantity is concern: deficit/disturbed sediment balance

Scope of RTD:

- Common understanding of integrated, RB wide SM
- Assessment of sediment-related quantity and quality risks for ecosystems and their services
- Prioritization of the identified risks
- Transformation of risk into management options (measures)
- Date and knowledge needs for an integrated, RB wide SM concept

Exchange of experiences Elbe-Danube, but other basins welcome to join!

Contact: Peter Heininger, heininger@bafg.de

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Three examples:

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EU biodiversity policy*

MAES

Action 5 - Improve knowledge of ecosystems and their services in the EU

Member States, with the assistance of the Commission:

- will map and assess the state of ecosystems and their services in their national territory by 2014
- assess the economic value of such services, and
- promote the integration of these values into accounting and reporting systems at EU and national level by 2020

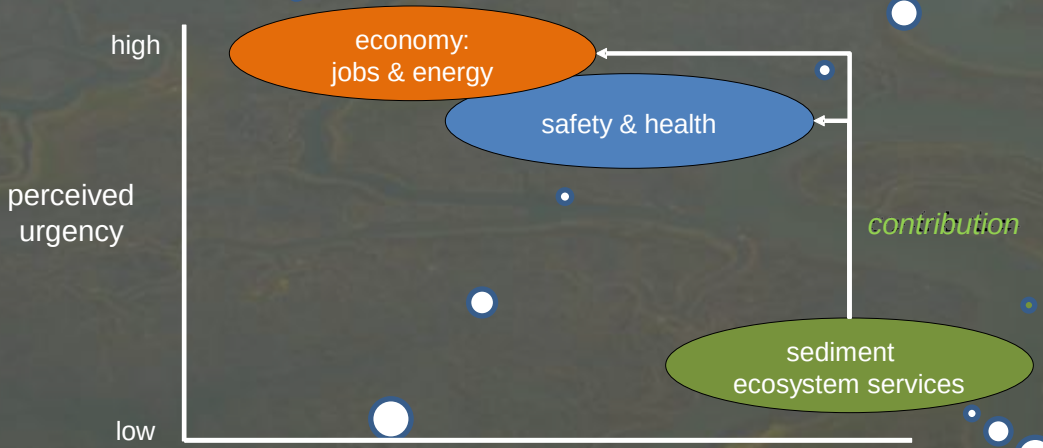
**Our life insurance, our natural capital: an EU biodiversity strategy to 2020 (COM(2011) 244)*

Sediment ES

sand, cement, gravel for construction

natural flood defense & C-sequestration

Profit People Planet



thank you ecosystem!

works 24/7 for us, **for free!**

toxics immobilization & natural land raising (mitigating land subsidence)

Brils et al. (2014) Reuse of dredged material as a way to tackle societal challenges

Sediment in MAES (1)

Note: MS = Member State; ES = Ecosystem Service, MAES = Mapping and Assessment of ES

1. State of action in your MS regarding the MAES obligation (mark most appropriate):

- O Pro-active, i.e. a leading role, giving the example/be of inspiration to other MS
- O Re-active, i.e. contributing/fulfilling the obligation, but not in a leading role
- O No action yet, but considering to get active
- O No action, also not considering action yet, because:
  - O Too much other obligations
  - O Lack of time
  - O Lack of resources
  - O Other: …….

2. If your MS is pro- or reactive who is executing the action?

a. Coordinated in our MS by institution: …….

b. Principle contact (name, email, tel): …….

c. Other institutions involved: ……..

3. Attention for sediment ES in the MAES exercise (mark most appropriate)?

- O None, also not yet considering, because …….
- O Interested, but re-active, first seeing and then maybe following what other MS do
- O Interested, maybe even willing to be pro-active, be stimulating example to other MS
- O Yes/some sediment ES attention already in on-going MAES exercise

4. If yes/some attention already for sediment ES in on-going MAES exercise, describe briefly which:

Sent in 2014 to the 12 EU MS represented in SedNet SG

Sediment in MAES (2)

	#	Austria	Belgium - Flanders	Belgium - Wallonia	France	Germany	Ireland	Italy	Netherlands	Portugal	Romania	Slovakia	Spain	United Kingdom
State of action MAES?														
Pro-active, leading role, giving example	5		1		1	1			1	1				
Re-active, fulfilling the obligation, not leading	5	1		1			1	1				1		
No action yet, but considering to get active	1						1							
No action, also not considering							1							
Attention for sediment ES?														
Yes/some attention already	2								1			1		
Maybe willing to be pro-active	2		?			1				1				
Interested, but re-active, first seeing ….	3		1		1		1							
None, also not yet considering	3	1		1				1						

Sediment in MAES (3)

Sediment included in NL MAES (ANK):

- Potential for extraction of: sand, gravel and clay
- Demand for these natural resources
- Sand maps
- Sand extraction at North Sea

Source for map: Deltares, 2015

Sediment belongs in MAES!

Now scientifically underpinned (April 2016):

Abiotic flows should be inherent part of ecosystem services classification

E.S. van der Meulen [a,*], L.C. Braat [b], J.M. Brils [a]

Highlights:

- Abiotic flows are neglected or addressed inconsistently in ES classifications
- Theoretical and practical arguments are provided to include them
- This supports consistency and optimizes integration power of the ES concept

Brought to attention:

- MAES & CICES people
- SedNet pro-active participation in MAES work group (MAES soil pilot)

Response of one of the peers (Sander Jacobs, BEES):
"*Our Dutch colleagues hit the spot! Essential considerations for application of ecosystem services in practice. This is a very instructive paper*"


Sed
Net
Thank you
for your
attention!