

## Disproportionate or unavoidable - which costs are reasonable?

### Socio-economic approach to find and finance the most cost-effective combination of sediment remediation measures in the international Elbe river basin

Ilka Carls<sup>1</sup>, Dr. Henrich Röper<sup>2</sup>, Judith Sprenger<sup>2</sup>, Sonja Wild-Metzko<sup>2</sup>, Dr. René Schwartz<sup>1</sup>

<sup>1</sup>Ministry of Environment, Climate, Energy and Agriculture  
Free and Hanseatic City of Hamburg, Germany

Phone: +49 40 42840 5244

E-mail: ilka.carls@bukea.hamburg.de

<sup>2</sup>Hamburg Port Authority, Free and Hanseatic City of Hamburg, Germany

---

**Introduction:** The principle of river basin management introduced by the EU Water Framework Directive (WFD) aims at a holistic view and triggered a paradigm shift in European water policy. Under the WFD, the European Member States committed themselves to a fundamental structural change in water management. A sectoral view was replaced by an integral recording and assessment approach, calling for an integrated river basin management that is consistent with ecological and socio-economic aspects (Art. 3 and 4 WFD).

Sediments and their transport (sediment dynamics) play a key role in the morphology of water bodies and their solid matter and substance budget. They are the basis for marine and estuarine as well as fluvial and limnic ecosystems, they provide specific habitats for aquatic communities and therefore contribute to the biodiversity of water bodies [1].

In the Elbe catchment area contaminated sediments and insufficient hydromorphological conditions are two of the main reasons for the failure to meet the WFD management objectives. As a consequence, the member states in the International Commission for the Protection of the Elbe River (ICPER) developed a sediment management concept in preparation for the management cycle from 2016 to 2021. Recommendations and management options are given under each aspect – quality, hydromorphology and navigation (as one example for water use). For the first time, an integrated sediment management concept was created in support of management planning in a large international river basin [2].

**Challenge:** However, the implementation of recommendations via the WFD program of measures remains challenging. Until now, the step towards implementing concrete measures has proven too big. The different Federal States in the Elbe catchment carry out sediment-relevant projects on their own sovereign responsibility with different implementation strategies, so that the existing cross-national communication remains difficult. As a consequence often management decisions are taken just from a single point of view, sometimes with considerable problem shifts in the river basin [3].

One obstacle in the implementation of required measures are the high, unevenly distributed costs. This

enormous need for funds brings each Federal State to its own financial limits [4]. In case of a pollution that is caused in an upper body of water but has an impact in another body of water below, upstream polluters would have to finance the reduction of pollutants in the downstream water bodies while they themselves would not benefit. It is also a fact that the "Polluter Pays Principle" does not apply because the polluter no longer exists or there is no responsible replacement company. However, this is no reason to rest. We have to keep in mind the environmental damage, in contrast to the cost. But there is a lack of basin-wide accepted socio-economic approaches. It is essential to prioritize measures also from a socio-economic point of view in order to select the most effective and cost-efficient measures or combinations of measures.

**Solution proposal:** To the need outlined above, the establishment of a solidarity-based "river basin budget" is proposed to support river rehabilitation measures of supra-regional or international significance.

Yes, it's complicated. But we have to move forward, to meet the demands of the WFD in Art. 3 and 4 (see above). Finally, the spirit of WFD is to bring the river basin community together in a community of solidarity and burden-sharing!

The presentation gives an insight of socio-economic approach to find the most effective measures in the international Elbe river basin, which benefits affect the whole river.

**References:** [1] LAWA (Ed.) (2019) Need for Sedimentmanagementplans in RBMP; [2] IKSE (Ed.) (2014) Sedimentmanagementplan für die Elbe. Magdeburg; [3] Köck/Reese (2018) RBM i. the Federal State, Berlin/Leipzig; [4] FGG Elbe (Ed.) (2018) Umsetzungsbericht zum Sedimentmanagementmanagementplan für die Elbe. Magdeburg

