2nd IMMERSE
Transnational Estuary Exchange Lab
FINAL Programme

24 November 2020, Online

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The IMMERSE Transnational Estuary Exchange Labs (TEEL) provide a platform to share practices and progress on the development of solutions for estuarine management issues. The purpose is to advance development and transfer of solutions across those involved in estuary management in the North Sea Region.

Drawing from the programme of the TEEL planned for April 2020 in the Netherlands, IMMERSE is organizing an online TEEL to share project activities and foster exchange on the topic of **sediment management in estuaries and estuary governance structures and processes**. The Estuary Exchange Lab will feature the management context of the **Eems-Dollard estuary** and discuss the value, role and importance of sediments in estuarine ecosystems.

In particular, estuary managers and experts from across the North Sea Region will share development of innovative methods and how sediment management strategies can contribute to the improvement of the quality of estuarine systems (support sustainable development of estuaries). **Different aspects of sediment management strategies as well as governance structures** will be shared in presentations followed by interactive discussions.

Participants are invited to attend the **introductory session** which will 'set the scene' on the sediment management topic, as well as introduce the interactive tools used during thematic breakout sessions:

I. What works in sustainable sediment management strategies?

II. Estuary Governance Structures and Processes

Programme

9:30 – 10:30 Introductory session – 'Setting the Scene'

REGISTRATION INTRODUCTORY SESSION

Welcome and introduction to the IMMERSE project (Frederik Roose – IMMERSE project coordinator)

Introduction about the management issues in the Eems-Dollard (Emiel Hakvoort – program manager Eems-Dollard 2050)

The Eems-Dollard is one of the last two natural estuaries in the Netherlands. This unique area, where dynamics still occur and which is an important habitat for estuary species, is under threat. Studies (by Deltares, TU Delft, WMR and UU) showed that the turbidity level in water in the Eems-Dollard has increased over the decades, due to the decreased sedimentation capacity of the estuary. This change is related to land reclamation, artificial coastlines, and major changes in hydromorphology of the estuary. Knowledge and understanding of the estuary system are evolving, and ongoing scientific research provides insights into promising ways to improve the ecological quality of the estuary.

This presentation will present the current understanding of sediment management issues and how they are being addressed through the program Eems-Dollard 2050, a joint effort of national and regional parties which builds on the unique dialogue between local, regional and national governments, industry/businesses, nature and environmental organisations. Although the program focusses on ecological improvement (Natura 2000 & Water Framework Directives), its ambition is to balance ecology and economy which means creating synergy with other issues like water safety, climate adaptation, regional economic development and quality of life. It links short-term concrete measures to the longer-term vision. The program also has a cross-border cooperation with Germany (Niedersachsen), which is taking shape in the elaboration of an ecological sediment management strategy and the exchange of knowledge.

Looking forward, the new program (2021-2026) will build on previous results and (knowledge) insights. The program will scale-up pilots of the track 'beneficial use of fine sediment', introduce new strategies and we will strengthen the current collaboration with partners. Cross-border collaboration will focus on making plans for the ecological sediment management and explore possibilities of joint pilot projects.

Introduction to the breakout sessions and interactive tools (Session moderators – Holger Rahlf, BAW & Henk Smit, WING Consulting)

Looking forward in IMMERSE (Frederik Roose – IMMERSE project coordinator)

10:30 – 11:00 Morning break

11:00 – 13:00 Breakout session I 'What works in sustainable sediment management strategies'

REGISTRATION BREAKOUT SESSION I

In the Elbe and Scheldt/ Upper Sea-Scheldt, sediment management strategies are being developed by exploring and testing new solutions.

Although the aims of the sediment management strategies and process to develop new solutions may be similar, the way of assessing, prioritising or implementing these strategies may considerably distinguish each other since the systems are naturally different. Still, when the common goal is sustainable estuary management, best-practices arise from practices-exchange.

Interactive audience engagement, moderated by Holger Rahlf (German Federal Waterways Engineering and Research Institute - BAW), will explore the following questions:

1. *What is **adaptive sediment management** in praxis?*
2. *What are **key components** of a sustainable sediment management **strategy**?*
3. *What are challenges for building an **integrated estuary management vision**?*

Participants are invited to contribute their own experiences and react to presentations on sediment management strategies from across the North Sea Region:

Assessment of strategies for an adaptive sediment management in the Elbe estuary (Victoria Ortiz - BAW)

The estuary management in the tidal Elbe has become significantly challenging for the waterways administrators in the last years. The need of maintenance works increased and management measures were required to sustainably and cost-effectively improve navigation and ecological conditions, meeting at the same time common acceptance among the stakeholders. A better understanding of the estuarine system has being a key-factor assessing the strategies and new solutions, which may improve the sediment management and ecological conditions in the tidal Elbe. Current investigations of the Federal Waterways

Engineering and Research Institute (BAW) follow up with the impacts of long-term river engineering measures to create intertidal flood-plains, one of the solutions to be conducted within the efforts to improve the estuary management. The effects of the measures on the hydrodynamic characteristics as well as on tidal pumping are the first-step of the assessment to derive the impacts on the estuary functions.

Exploration of new solutions to adjust the sediment management strategy in the Scheldt estuary mouth (Marco Schrijver - Rijkswaterstaat)

The beneficial use of sediment is an important theme in short and long-term management in the Scheldt estuary. Part of the research program of the Flemish-Dutch Scheldt Commission (VNSC) is therefore focused on sediment strategies to mitigate the effects of sea level rise and climate change and to contribute to improvements in the natural system and to ensure safety against flooding. In order to maintain sufficient sediment in the system, it was decided in 2014 to stop the extraction of sediment. In addition, solutions are sought over the entire estuary instead of in subsystems as the Western Scheldt. Current research focusses among others on a pilot project on cross-border relocation of sediment and a pilot nourishment in the mouth of the Western. The last one is the subject of the presentation.

From management plan to a vision for estuary resilience, case of the Upper Sea Scheldt in Flanders (Michael De Beukelaer-Dossche – De Vlaamse Waterweg)

The Upper Sea Scheldt is the upper tidal branch of the Scheldt Estuary (Flanders, Belgium). Apart from its ecological and recreational functions, the Upper Sea Scheldt is an important link between the Port of Antwerp, the Port of Ghent and the Seine-Scheldt network.

However, geometrical bottlenecks limit navigability in the upper stretch of the Sea Scheldt to CEMT class IV. Furthermore, the Upper-Sea Scheldt is confronted with challenges of climate change, human activities and spatial claims, leading to an unfavourable increase in tidal range and dynamics. This affects the estuarine habitat and the suspended sediment concentrations, which in turn affects the water quality, primary production processes, the food web… Hence, a broader vision on river management is required.

In its mission to promote navigation and sustainable management of the river, De Vlaamse Waterweg nv launched an integrated study to investigate management solutions that both accommodate navigation and tackle the aforementioned challenges. The effect evaluation is based on the results of a tailor made, state of the art modeling instrument, consisting of interdependent hydrodynamic, sediment, ecosystem and higher trophic level models. Pilot projects will be defined. The presentation will focus on this approach to building the vision.

13:00 – 14:00 Afternoon break

14:00 – 16:00 Breakout session II 'Estuary Governance: structures and processes'

REGISTRATION BREAKOUT SESSION II

The Ems, Elbe and Scheldt estuaries have several elements in common, in terms of nature conservation (e.g. valuable Natura 2000 sites), economic uses (e.g. importance for the shipping industry and maritime transport) and the complex nature of their governance structures. Both are situated at the intersection of different jurisdictions: international administrations at the Ems and Scheldt and three German federal states at the Elbe. These structures present challenges for the work of estuary managers, especially when they must find solutions for dealing with high amounts of sediment and related consequences for ecology and economy. Among others, this topic was recently explored in depth as part of a study on how to improve estuary governance, prepared as part of the IMMERSE project.

Within this session, governmental structures and processes from the estuaries will be presented, as well as related challenges and how they are dealt with. Special emphasis will be set on the role of stakeholders. Similarities and differences will become apparent.

Interactive audience engagement, moderated by Henk Smit (WING), will explore this subject further based on the following questions:

1. *What does **successful estuary governance** mean to you?*
2. *How can **governance in your estuary be improved** using governance elements from other estuaries?*
3. *Were there **lessons learned** that can inform future / ongoing governance processes in the three estuaries and across the NSR?*

Participants are invited to contribute their own experiences and react to presentations on estuary governance structures and processes from across the North Sea Region:

Introductory presentation on main governance characteristics and structures of the Elbe and Scheldt (Marcel Taal, Deltares)

In 2019 a study was executed that compared the governance of Elbe, Humber and Scheldt by Wing consultancy and partners, as part of the IMMERSE project. The results of this study are combined with information on the Ems estuary and the environmental characteristics of the estuaries. Factors that are compared on governance comprise various aspects of institutional settings, involvement of stakeholders, the role of system knowledge and whether joint

visions or perspectives are in place. Environmental factors to compare contain among others geometry, tide and turbidity issues. We try to feed a discussion on best practices for debating and solving the conflicts between people, planet and profit in estuaries.

Joint cross-border policy making and management of an estuary: the story of the Flemish-Dutch Scheldt Commission (Willem Vuylsteke, Mobiliteit en Openbare Werken)

Over the centuries, the Scheldt estuary played an important role in the development of the cross-border Flemish-Dutch delta. The Scheldt estuary extends over parts of the Dutch and Flemish territory; the access of the Flemish ports of Antwerp and North Sea Port Flanders (Gent) runs through the Dutch part of the Scheldt estuary.

It is therefore not surprising that Flanders and the Netherlands decided to develop a common policy and management in order to develop the Scheldt estuary as a multifunctional estuary water system that is used in a sustainable way for human needs.

This joint policy and management of the Scheldt estuary has been shaped since 2008 in the Flemish Dutch Scheldt Commission (VNSC), but how does the VNSC work and how is the cross-border governance of the management of the Scheldt estuary run?

Integrated management of the Elbe estuary – can it actually be achieved? (Kirsten Wolfstein, Hamburg Port Authority)

The Elbe estuary functions as an important artery for the economic development of the region and beyond. At the same time it is a valuable habitat, protected by environmental legislation. The harmonization of ecological and economic demands is a joint objective – and challenge - for the three federal states of Schleswig-Holstein, Lower Saxony and Hamburg, the national Waterways Administration (WSV), the Hamburg Port Authority (HPA) and other stakeholders. Still, decision-making in regard to issues of the management of the Elbe is rather sectionalised and mainly focused on specific tasks or projects, often in very limited areas.

Although overall goals for the estuary, such as the implementation of the Natura 2000 management plan, the WFD or the cooperation in the estuary partnership ”Forum Tideelbe” are existing, the federal split of responsibilities and singular interests prevent a truly coordinated management in the best interests of the estuary. Recent developments – obtained achievements and remaining issues - will be presented.