

An aerial photograph of a coastal landscape. A river or estuary flows from the top left towards the center. The land is divided into agricultural fields of various shades of green and brown. Several wind turbines are visible, some in the water and others on land. A small cluster of buildings is situated near the river. The sky is overcast.

## IMMERSE

### Transnational Estuary Exchange Lab

24 November 2020

- What is the issue?
- Process strategy
- Where are we heading?
- (pilot) projects
- Lessons learned

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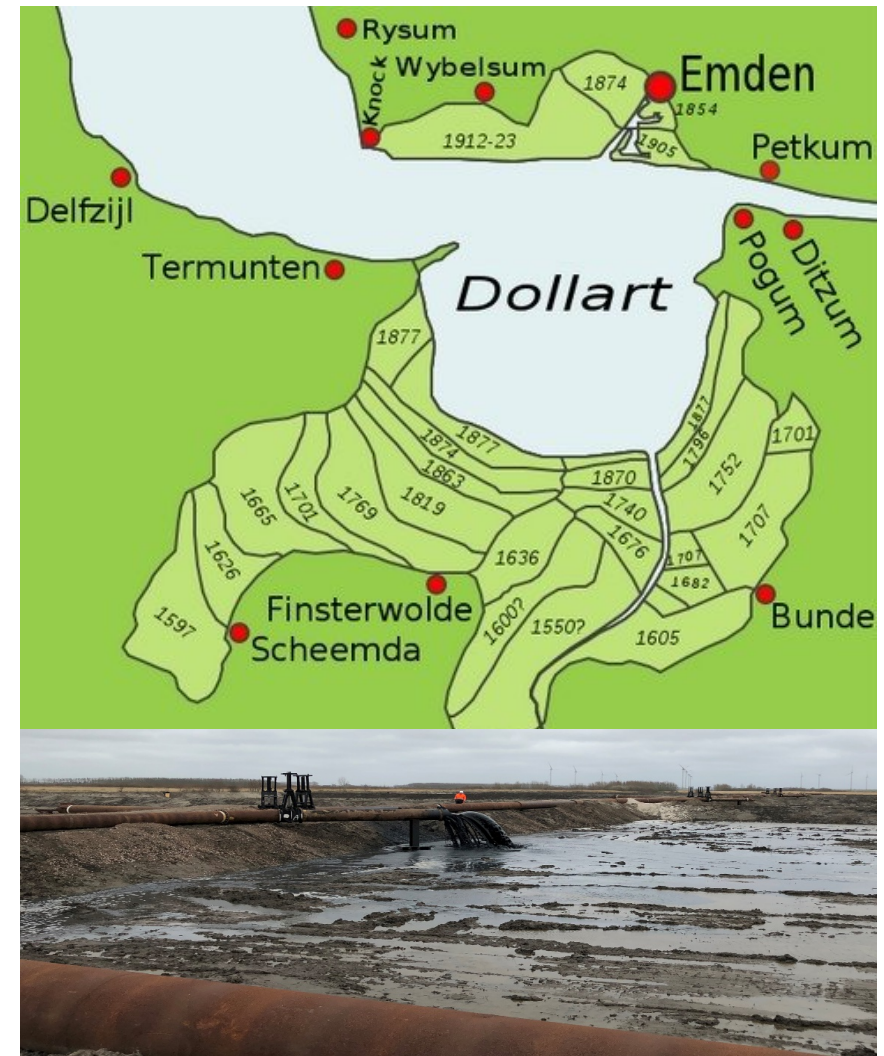




# What is the issue?

- Human activity has resulted in increased turbidity
- Ecological bottlenecks
  - Limited primary production of algae
  - Imbalance of the food web and migration patterns
  - Loss of species, gradual transitions and habitats

→ Therefore, there was no room for economic development. Additionally, there were also local challenges that could be linked. E&E steering group took action!



# Joint responsibility: One for all, all for one

*'Although we all have other and our own challenges, we work as one to improve the ecology in the estuary.'*



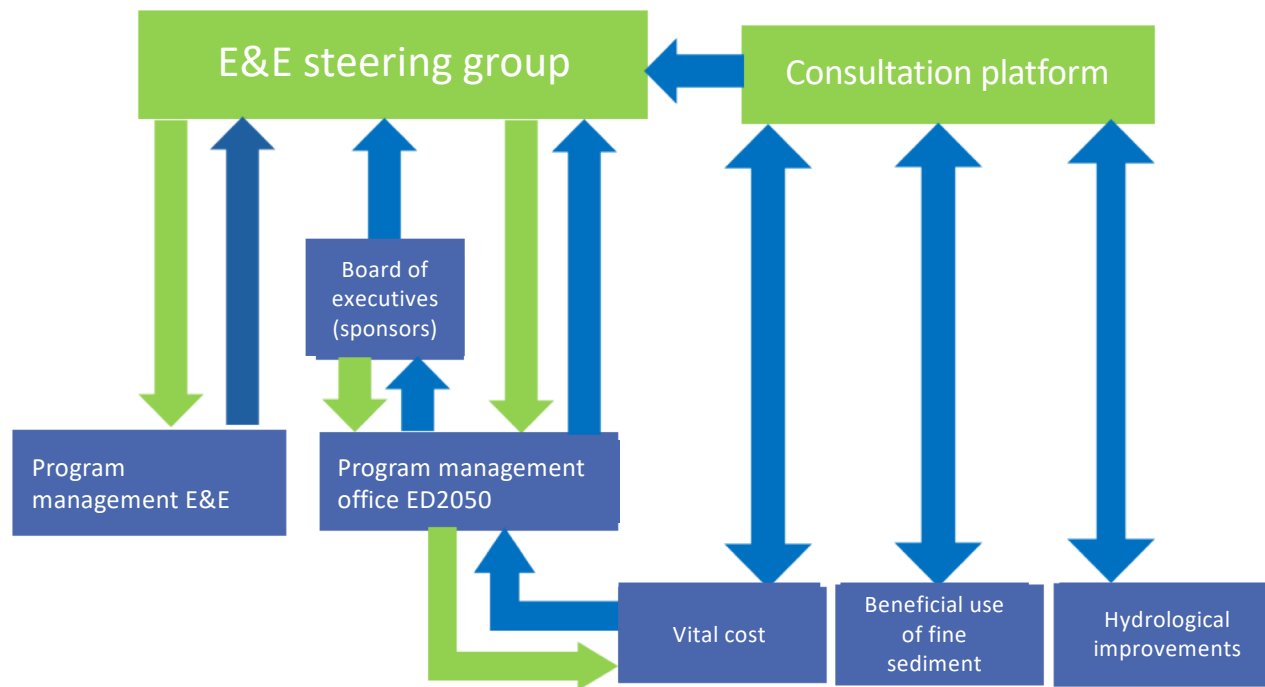
Figure 1. ED2050 partners



# Conditions and process strategy for ED2050

- A longterm ecological vision— *To focus and reach our ultimate goal*
- Learning by doing — *By working with pilots, we step-by-step take away uncertainties and build up experience and our knowledge base.*
- Collaboration between different organizations — *As partners we take joint responsibility to tackle an ecological issue that is too complex for one party.*
- Connect with other programs and local challenges — *To create synergy.*

# Governance of a complex program





# Cross-boarder governance: Collaboration with Germany

## Process strategy:

- Intensive collaboration via the public and political/administrative line.
- Formulate a joint sediment management strategy with priorities and concrete measures.
- Direct involvement in the planning procedure for tidal management and monitor the measure.
- Work towards (and explore) a joint programme for the Ems estuary and possibly an Interreg project.



Target situation

Objectives

Solution strategies (contextual)

Projects

# Which solution do we see?

Objectives (from target situation)  
Suitable dimensions – healthy habitats – gradual transition areas – natural turbidity – nutrition as basis

		Robust and climate resistant	Suitable dimensions	Healthy habitat	Gradual transitions	Natural turbidity	Sufficient food supply
1. Removal and the beneficial use of fine sediment	Knowledge development and monitoring					X	X
2. Sedimentation outside the dikes and reinforcement of habitats		X	X	X	X	X	X
3. Sedimentation inside the dikes and reinforcement of habitats (transition)		X	X	X	X	X	X
4. Improve dredging and depositing strategies		X		X		X	X
5. Nesting and high tide refuges sites for birds				X	X		
6. Improving the quality of waterbeds and underwater life				X			X
7. Nature management				X	X		

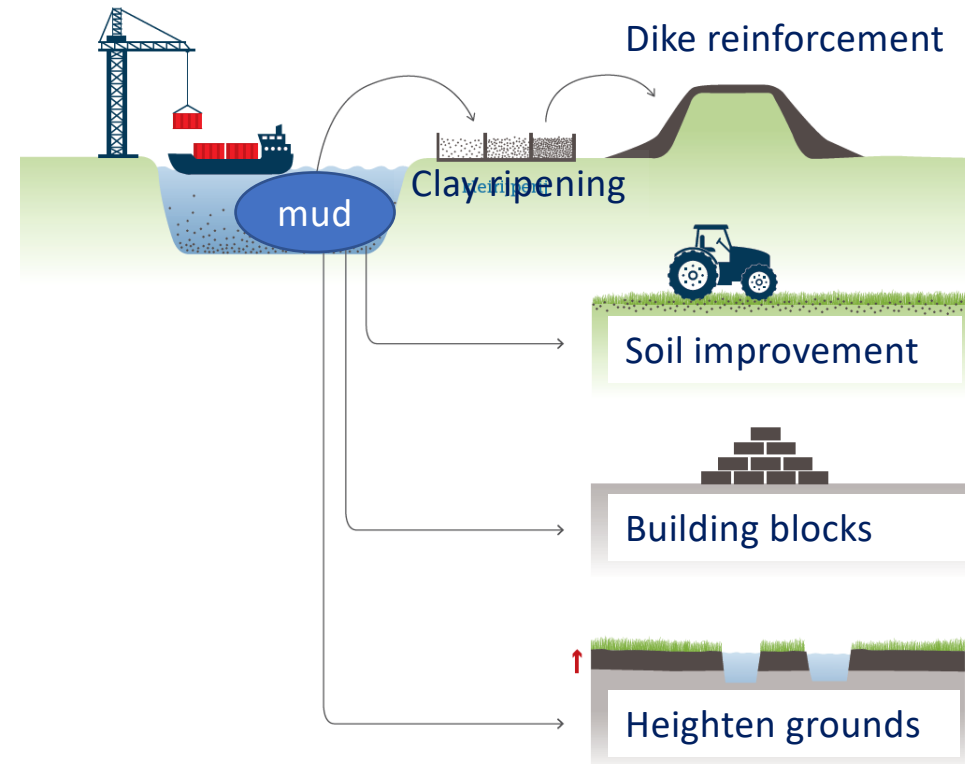
Working principles  
(process-based strategy lines)





# Beneficial use of sediment: Innovative mud pilots

- Measures to tackle the turbidity problem, can also start-up new circular mud economy.
- Different projects can be a part of the supply chain (example in next slide)



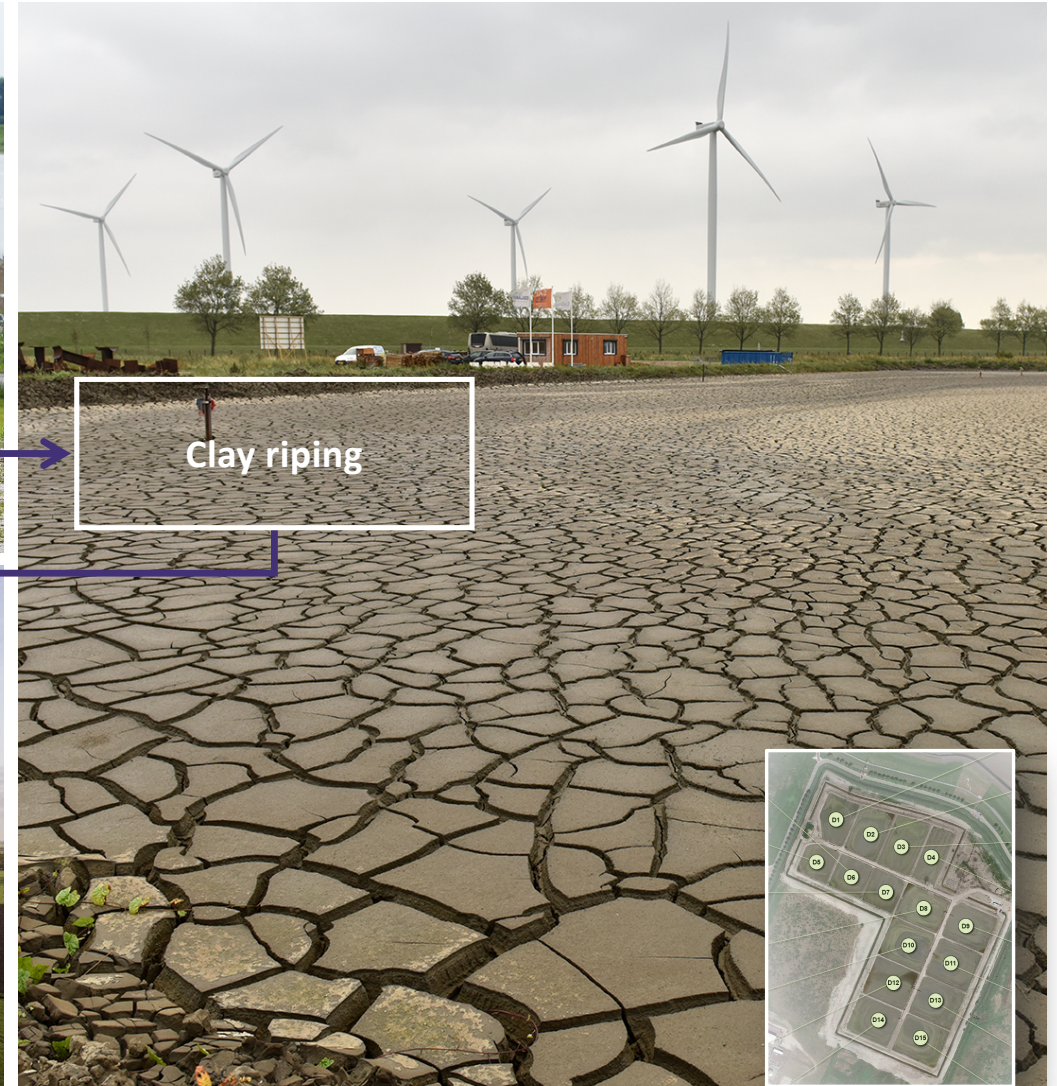


# Twin dykes, example for combining objectives

- Objectives: Capturing fine sediment, nature development (salt marshes), aquaculture and climate resilient / saline agriculture.
- Combined with the dyke reinforcement for water safety









# Lessons learned

1. Keep Investing in the **joint responsibility**
2. Make **clear agreements** between the project partners, when they are part of the same supply chain
3. **Connect** with relevant local issues
4. It is key to have an **adaptive program**, because circumstances will change in a dynamic environment.

# Thank you for your attention!

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