


Restoring the Ems-Dollard estuary together

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 **Niedersächsischer Landesbetrieb
für Wasserwirtschaft,
Küsten- und Naturschutz**

 **Ministerie van Economische Zaken,
Landbouw en Innovatie**

 **WSV.de**
Wasser- und
Schifffahrtsverwaltung
des Bundes

 **provincie
groningen**
 **Rijkswaterstaat**

 **Hunze en Aa's**
 **GRONINGEN SEAPORTS**

 **Waterschap Noorderzijlvest**
 **Gemeente
Delfzijl**

 **de Waddenzijlvereniging**

 **Het Groninger
Landschap**
 **natuur en milieu
groningen**

 **KijFOG**
 **Royal
HaskoningDHV**
Enhancing Society Together

Outline

- Why together?
- What are the problems?
- Who is trying to solve the problem?
- Projects
- Why haven't we solved the problem yet?
- Possible solutions and recommendations



Source: Above <http://www.waddensea-worldheritage.org/nl/waddenzee-werelderfgoed>, below: Googlemaps

What is going on in the EMS estuary



Why together?

- History
- Natura 2000 area
 - Integral Management Plan
- Word Heritage area



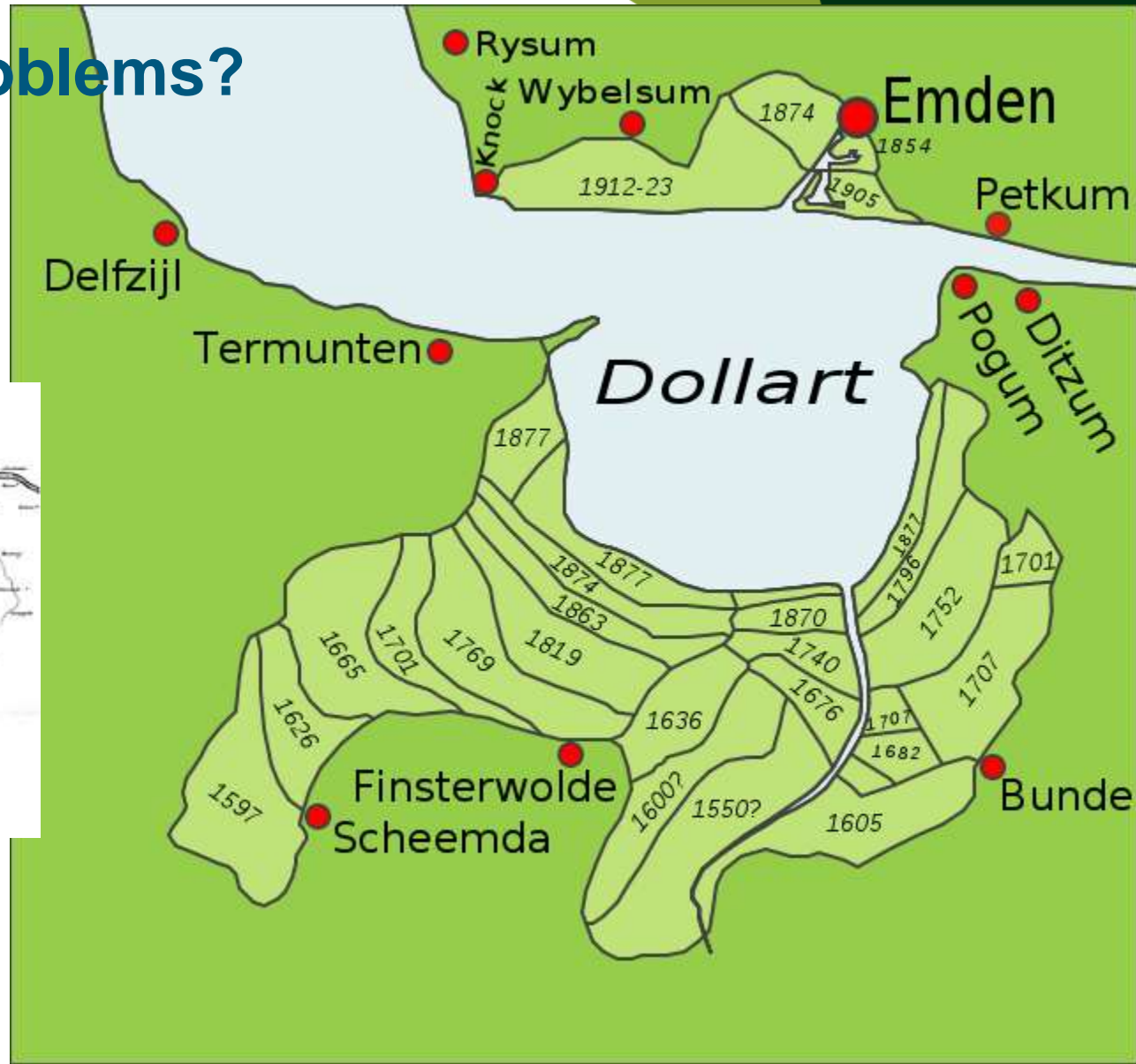
Source: <http://www.eems-dollard.eu>

What are the problems?

- Constricted estuary



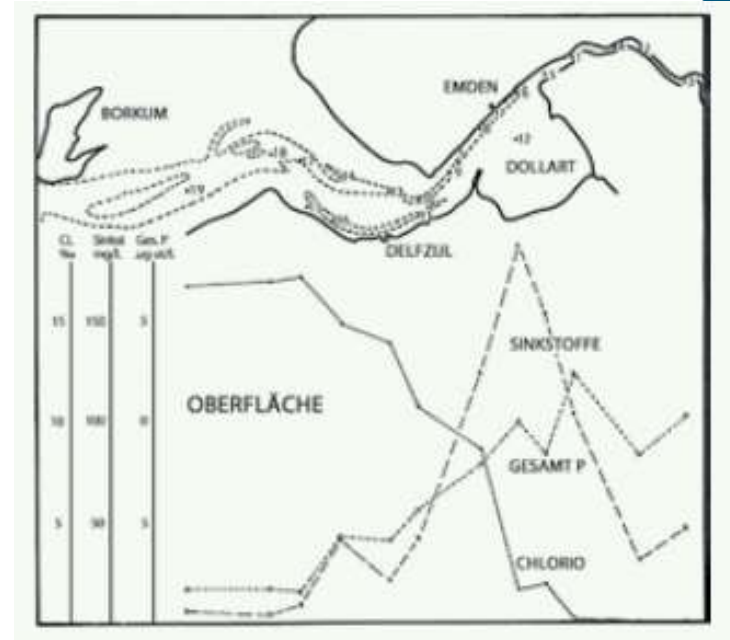
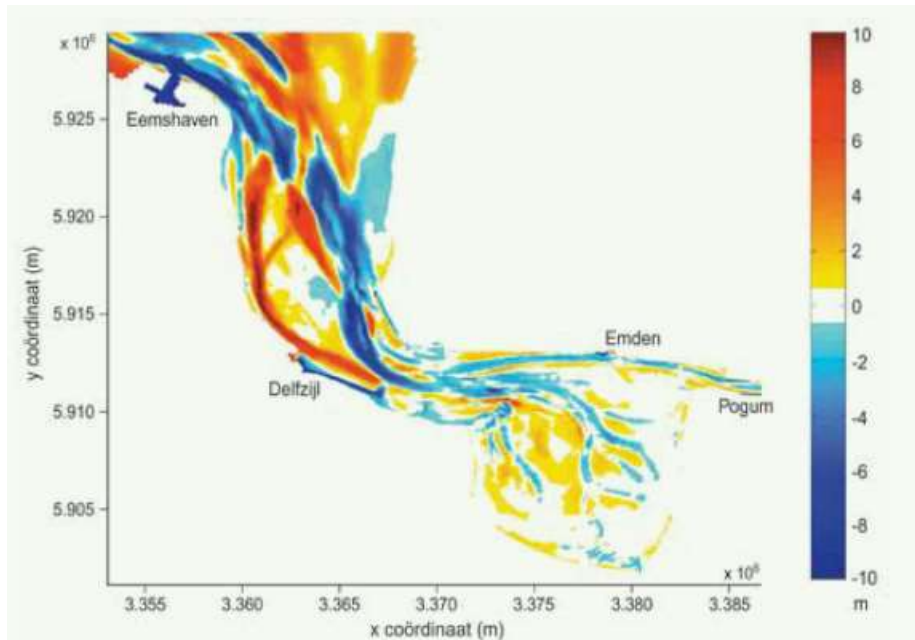
Source: Jager, 2010



Source: www.eems-Dollard.eu

What are the problems?

- Constricted estuary
- Tidal asymmetry and high velocities

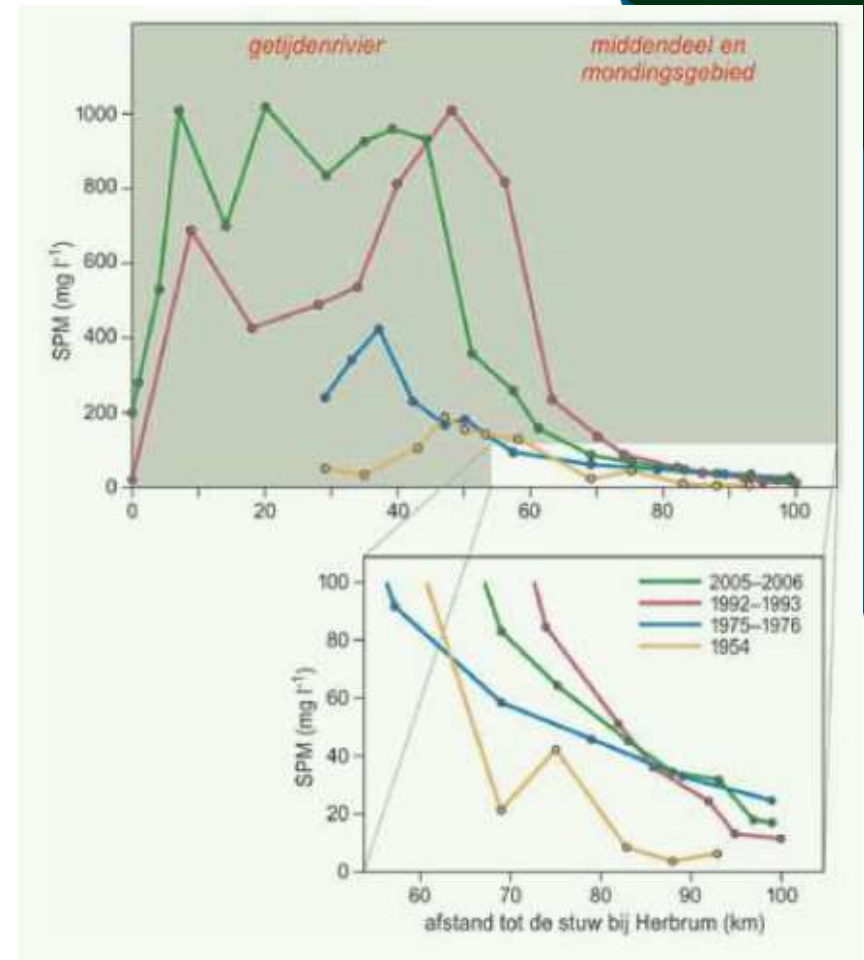


Source: Herrling & Niemeijer, 2008

Source: Postma, 1960

What are the problems?

- Constricted estuary
- Tidal asymmetry and high velocities
- **High turbidity and fluid mud**



Source: Measures 1954 (Postma 1960), 1975–1976 (de Jonge 1983), 1992–1993 (measures by van Beusekom & de Jonge) en 2005–2006 (measures by de Jonge). De Jonge et al. In preparation.

What are the problems?

- Constricted estuary
- Tidal asymmetry and high velocities
- High turbidity and fluid mud
- **Sharp fresh-salt water transition**



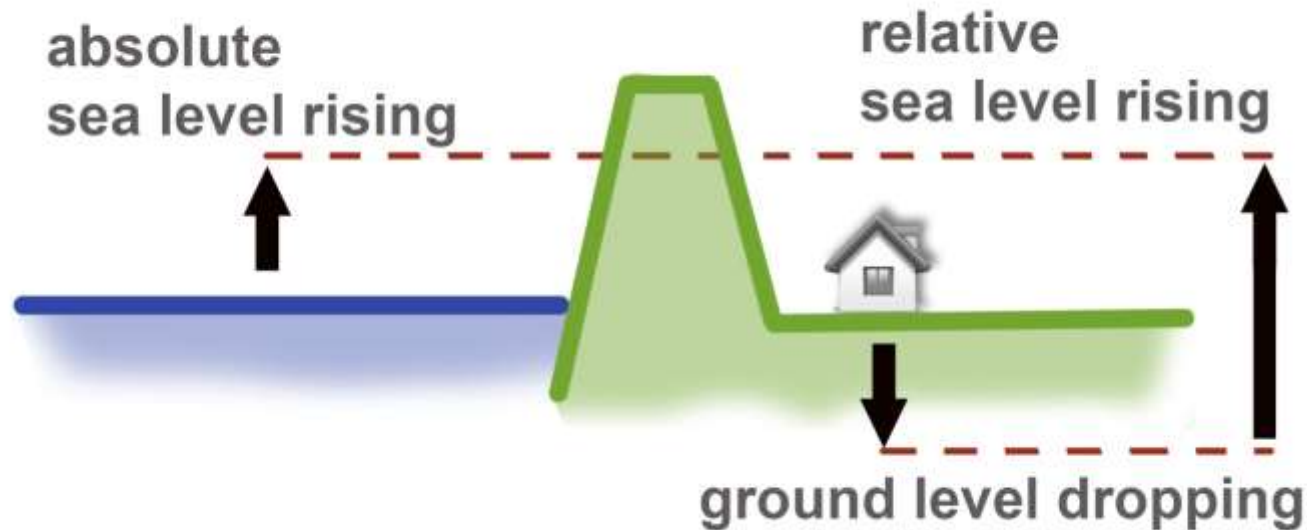
Photo: S. Wille, NLWKN

What are other problems?

- Public awareness is low
- Public participation is minimal
- Public and political willingness is low
- Management of human activities is better than management of nature
- Not enough challenges for the business community to come up with sustainable use

What are relevant developments?

Climate change and natural gas extraction



What are relevant developments ?

Economical development

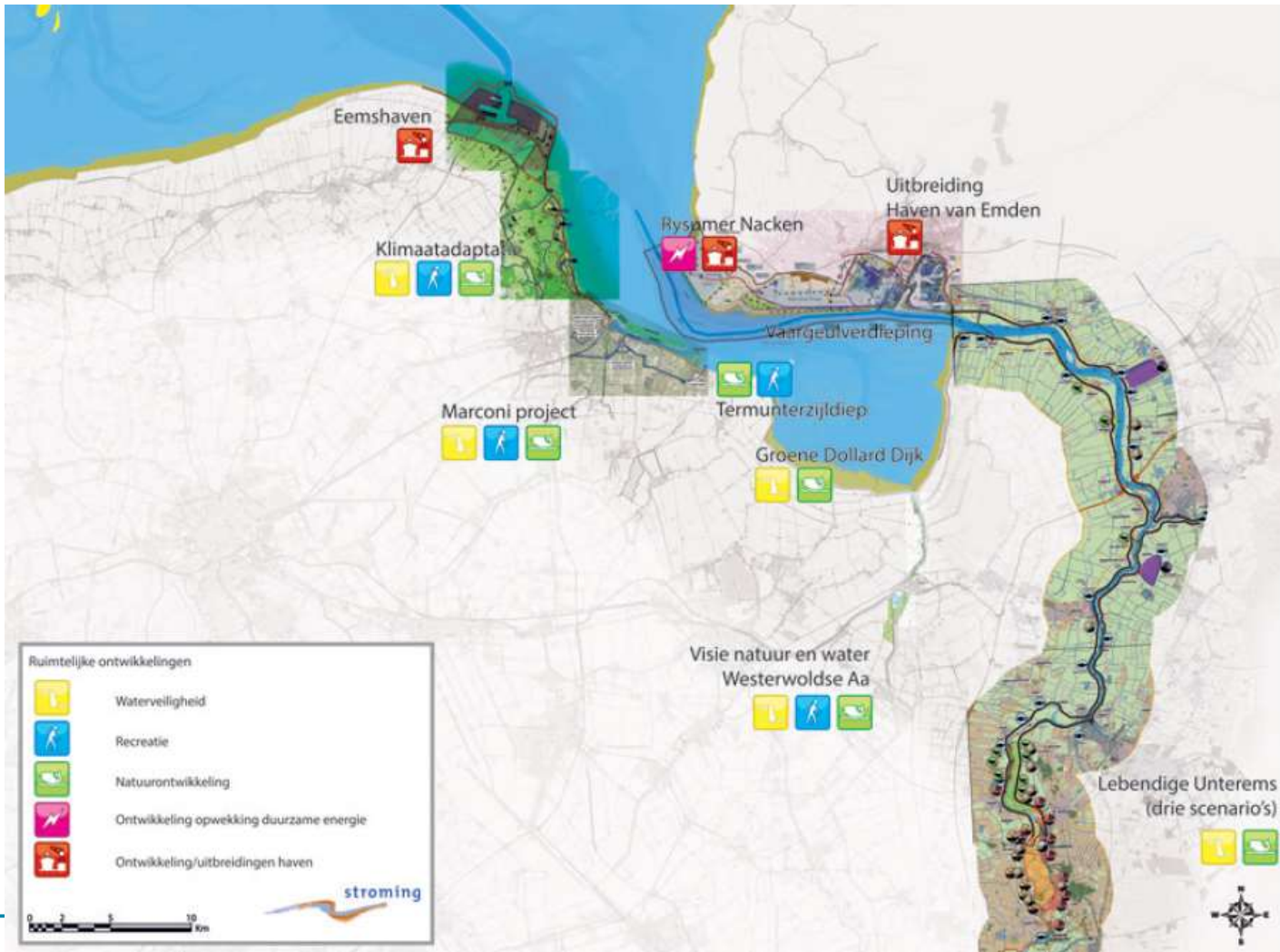
- Development Eemshaven “Energyport”
- Meyer Wharf Papenburg
- Volkswagen plant Emden
- Etc.



Source: www.meyerwerft.de

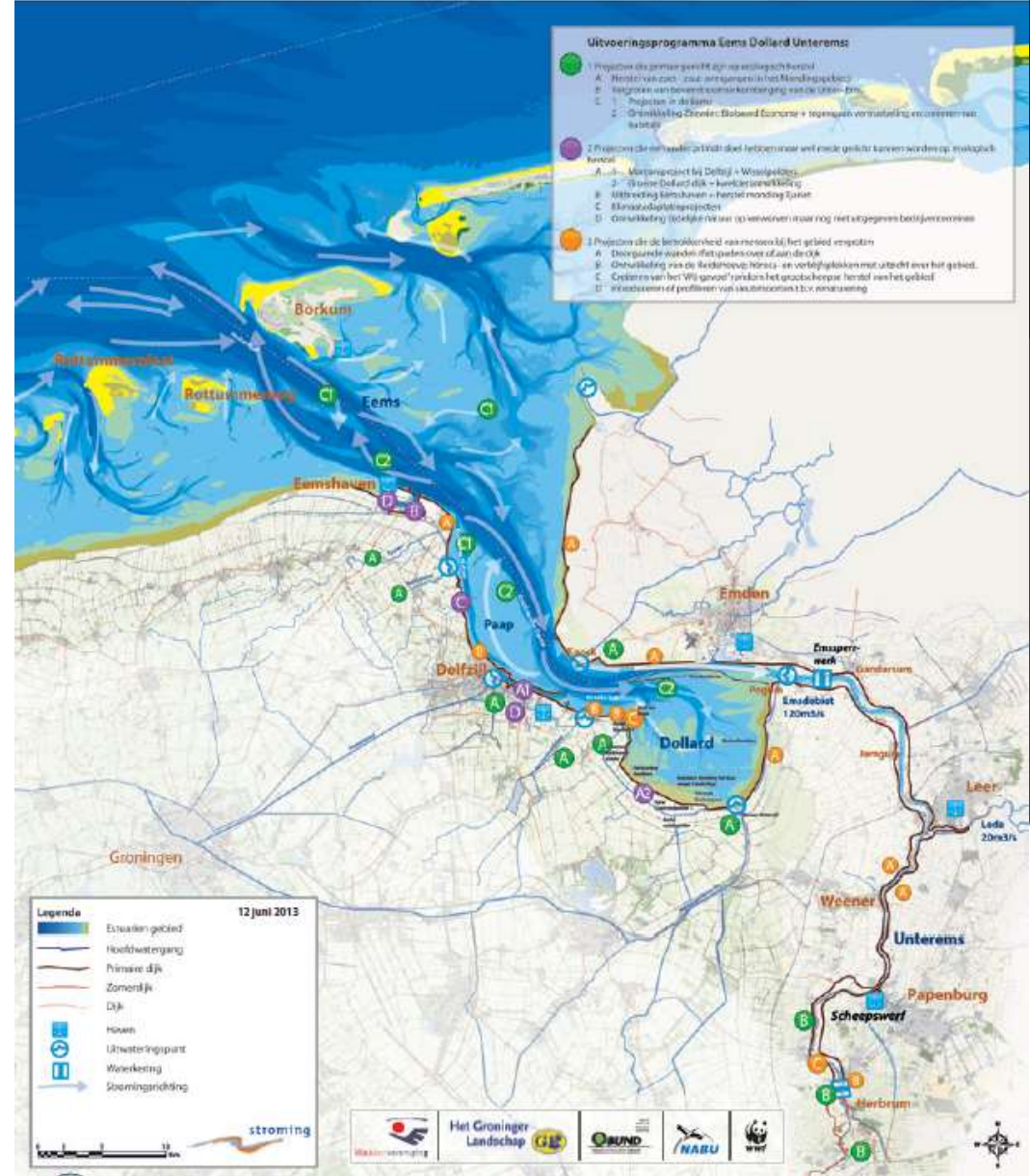


developments



Source: Realisatieprogramma Eems-Dollard, buro Strooming 2013

Integrated solutions & Ongoing projects



Source: Realisatieprogramma Eems-Dollard, buro Stroming 2013

Who is trying to solve the problems?

The Netherlands & Germany

- IMP
- PRW & Lebendige Unterems
- E&E
- Universities
- NGO's
- Municipalities
- Waterboards
- Government
- Harbours
- Industries

Projects Marconi Delfzijl

- Coastal defence, urban development and leisure go together with nature development



Source: Ruimtelijke visie Marconi Gemeente Delfzijl 2012

Projects Managementplan Dollard

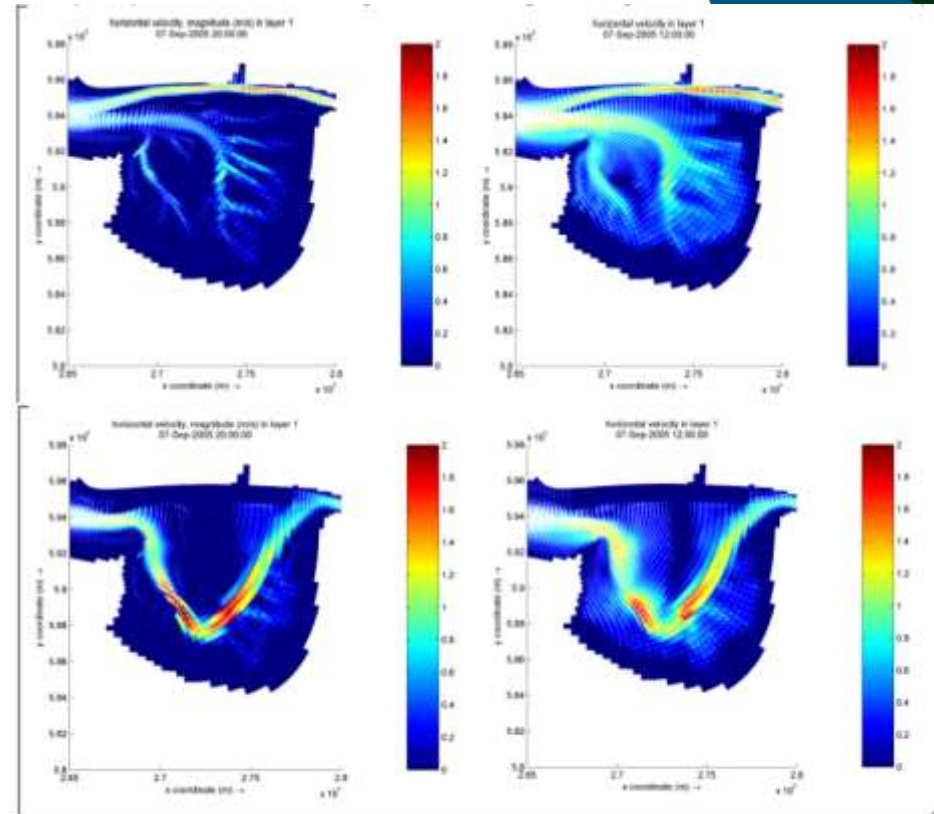
- Ecosystem restoration, coastal defence, heritage and protection of species



Projects Economy and Ecology in balance

Hydromorphological calculations of the effects of:

- Restoring the multiple channel system
- Ending of dredging
- Increasing of basin capacity
- Re-meandering in the Ems-Dollart
- Closing of the mouth of the estuary
- Constructing of a fresh water entry



Source: Economie en ecologie in balans. Hydrodynamische effecten studie van mogelijke maatregelen, 2013


Why haven't we solved the problems yet?



People want to restore the estuary

- Too many parallel tracks within a country
- Too big cultural difference between countries
- Too little governmental proces management
- Too little integrated coordination
- Too large economical importance

Recommendations/solutions

- Make sure all understand each other and respect each others culture
 - Do the job together from the start including the public and put in equal effort
 - Initiate an institute that coordinates activities and ensures budgets (à la Westerscheldt)
 - Focus on ecosystem services to convince people that nature is important
 - Start with small projects, building the “bigger picture” and, learn by doing (PRW)
 - Give opportunities to the business community for sustainable use
 - Put a lot of effort in communication with stakeholders
-  ■ The final decision on restoration is up to the politicians. If there is no will, restoration will be difficult...