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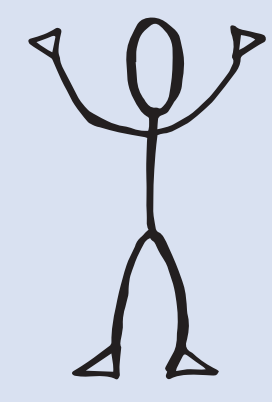


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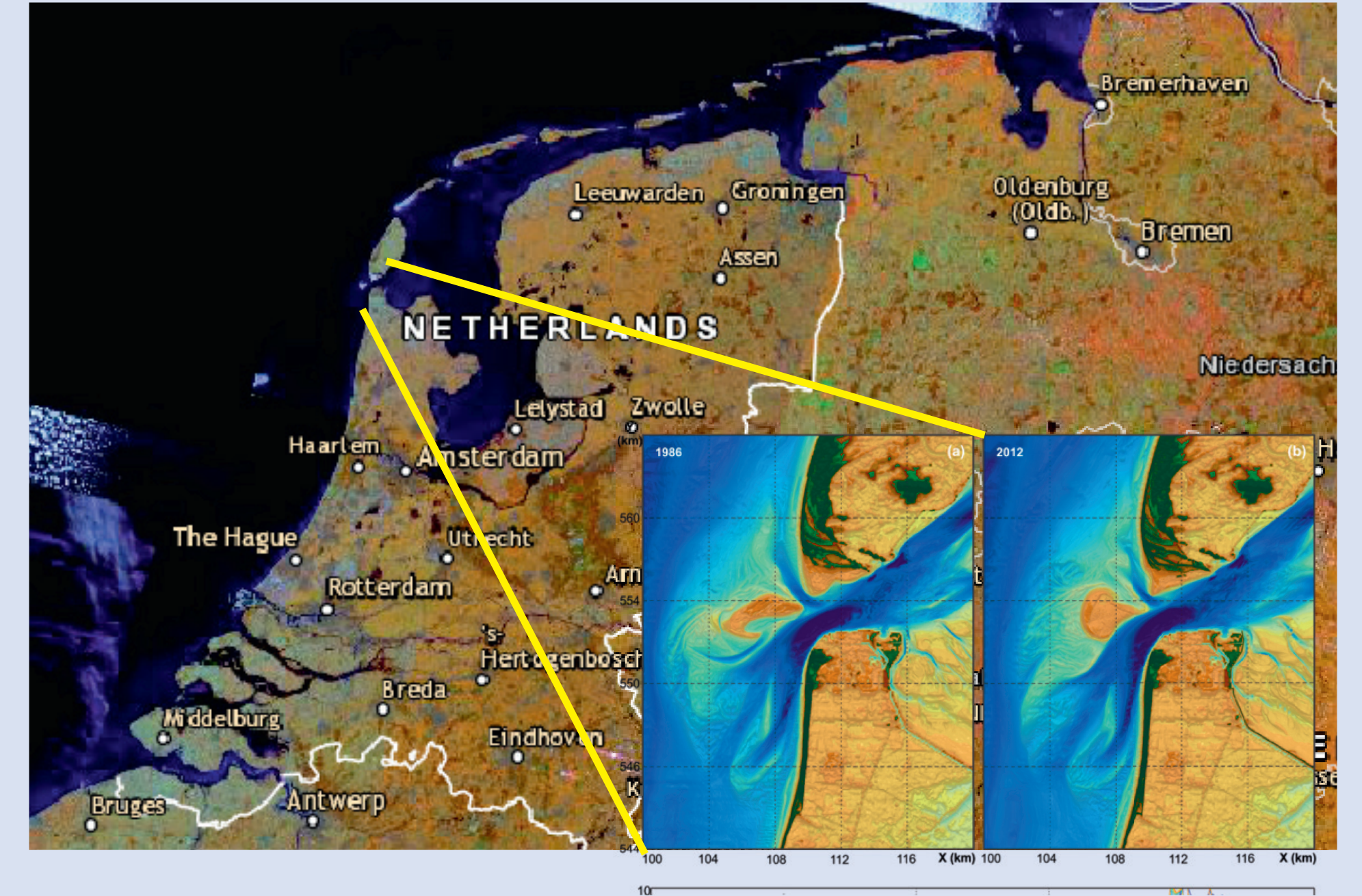
Texel, the Netherlands

Problem situation

- Barrier island in an ebb-tidal delta
- Phases of coastal erosion, uncertain changes over time
- This results in societal problems, including:
 - Decrease in flood protection
 - Loss of nature reserve
 - Loss of recreational area
- Interventions may include: dredging and nourishments to stimulate shoal attachment to the island
- Uneven distribution of costs and benefits.

Approach

- To design and apply a co-design process
- To start early **interactions with the stakeholder community and experts** to derive a more optimal design of interventions to solve erosion problems on the adjacent shorelines.
- Stepping away from citizen tokenism and stakeholder consultation to citizen power, by putting **emphasis on social values** and system understanding.



Application in three rounds

Round 1: with 17 local stakeholders & 5 professionals

a.o. nature-lovers, municipa employees, recreationists, restaurant owners, with place-based knowledge related to Texel. Experts shared scientific information on governance, ecology and the physical system.

Aim: To create shared system understanding, elicit (stakeholder) values.

Round 2: with 14 experts and professionals.

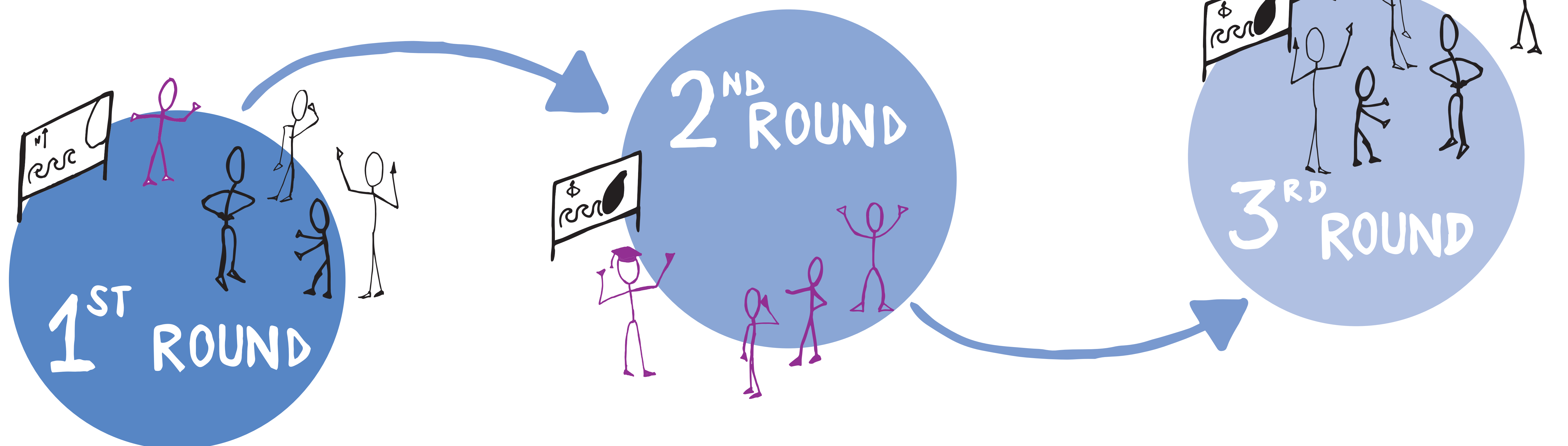
a.o. engineers, coastal managers and governance specialists with a variety of knowledge related to water and the (Dutch) coast.

Aim: To generate alternative designs starting from the values of stakeholders

Round 3: with 14 local stakeholders

The same participants from round 1 were invited.

Aim: To validate the value-based designs, content and process from previous rounds.



Emphasis round 1:

Design utopian and dystopian futures

1. Related to uncertainty in the future developments of the coastal system
2. **Knowledge sharing** between scientists and stakeholders

Emphasis round 2:

Designing packages of integrated coastal management strategies

1. Starting from the revealed value dimensions of local stakeholders into account (round 1).
2. Generated designs potentially used the natural channel-shoal dynamics of south Texel, and the futures from round 1.

Emphasis round 3:

2-way feedback between participants and researchers

1. Recognition of distilled value dimensions (from round 1)
2. Stakeholder validation of coastal management strategies (from round 2).

Conclusions

Outcomes round 1

What local stakeholders (don't) want, and their **underlying values** (primary components based on participants' ranking of the designed futures).

Outcomes round 2

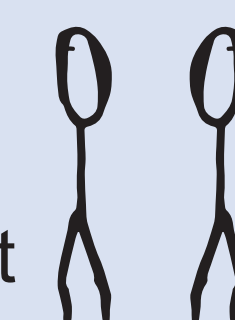
Agreement on importance of integration: "The challenge is not the technology, because physical solutions are already here. The main challenge lies in the social system."

Outcomes round 3

Participants recognized their values and preferences in the distilled values and "value dilemmas". However, participants were less satisfied with the coastal management strategies from round 2. **The process failed to produce an implementable set of strategies.**

What worked...

- ✓ **Building trust with local stakeholders.** They appreciated the process, felt included and their input was valued:
 - ✓ by making the local **stakeholder views** the starting point
 - ✓ by giving them **autonomy** and opportunities to exit the process
 - ✓ by **separating** local stakeholders and professional experts in role and task
 - ✓ by allowing **plenty of freedom** in the designs (sky-is-the-limit)
 - ✓ by having "neutral" **facilitators**
- ✓ **Local stakeholders were able** to understand short- and long-term consequences in a complex coastal system.
- ✓ Acknowledgement of **time scale uncertainty**
- ✓ Acknowledgement of **uneven distribution of costs and benefits**



... and did not work:

- ✗ **Professional experts felt hindered** by the unusual starting point of stakeholder values.
- ✗ Next iterations may involve **stakeholder representatives** in round 2.
- ✗ **Collaboration in interdisciplinary expert teams** proved to be challenging for designing integrated strategies.

Further research steps:

1. Elicitation of **generic aspects of co-design in coastal systems**, potentially by **cross-comparing with experiences in international exemplars.**
2. **Identification of site- and context-specific aspects** of collaborative design-in-action approaches
3. **Exploration of existing dilemmas in underlying stakeholder values**, which can be mapped and are recognized.