

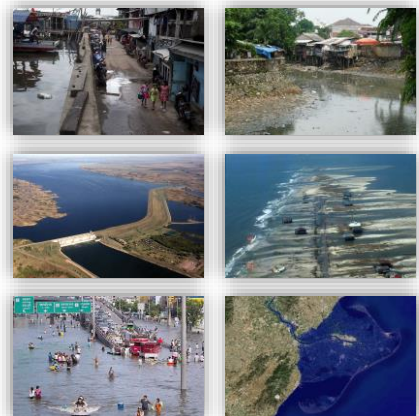


Starting point: UU focus area Future Deltas

- Stimulate interdisciplinary research
- Collaboration between faculties
- Nucleus for broad collaborations

- Innovative research and front position
- Contribute to economic development
- Contribute to solution societal problems

- *Future Deltas: here it comes all together!*

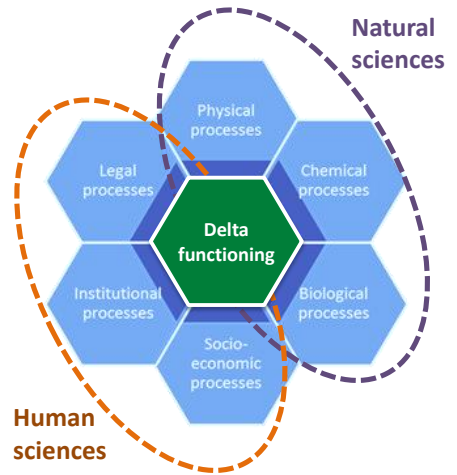


Future Deltas – integration of disciplines

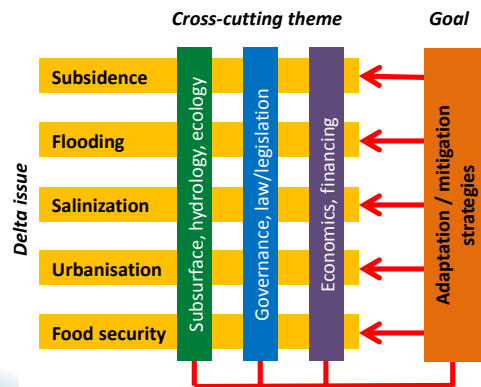
System understanding

Disciplines involved:

- Physical geography (GEO)
- Spatial planning (GEO)
- Governance (GEO)
- Integrated development studies (GEO)
- Biology (SCI)
- IMAU (Climate & SLR) (SCI)
- Law (REBO)



Future deltas: approach



Integration of disciplines

A rich diversity:

- Subject of research – same subject, other perspective
- Approaches and methods: physics, biota, behavior, normative
- Spatially explicit (or not) – scales

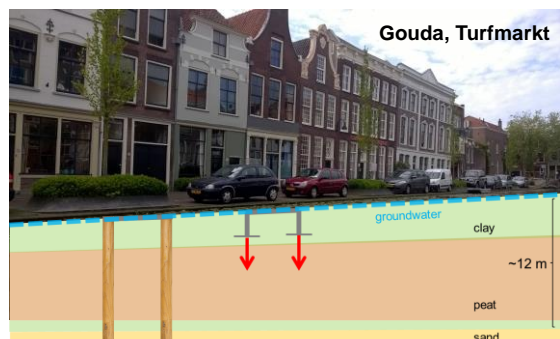
Gains:

- New questions to existing data
- Real-world is across disciplines
- Mutual understanding and appreciation

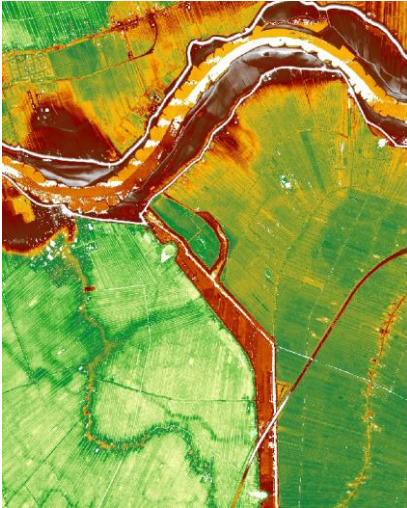
Example: land subsidence peat area



Kockengen, Kanis

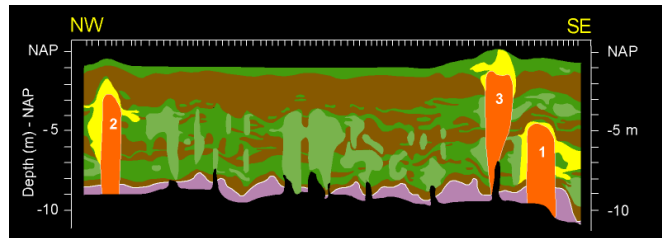
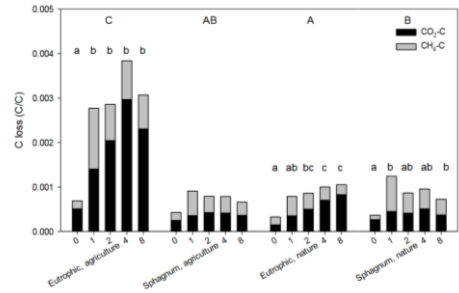


Land subsidence



Natural sciences:

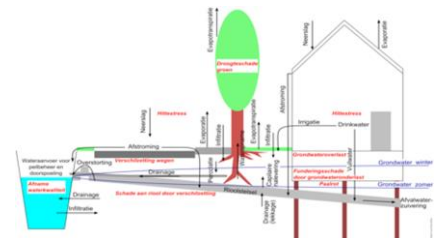
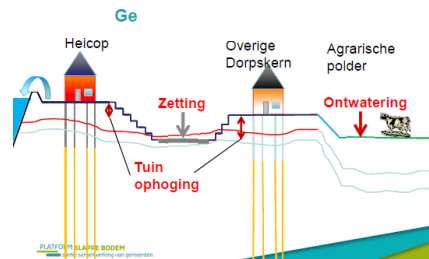
- Subsoil
- Ground water
- C-loss
- Compaction



Land subsidence

Law & Governance

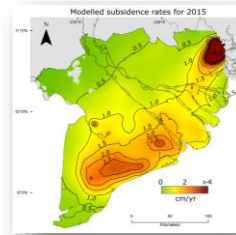
- Which measures?
- Private owners, Municipality, Water Board, Province, other...?
- Who is responsible?
- Which legal instruments to address problems?
- How do instruments and responsibilities relate to each other?
- Who bears which cost, and how?
- Do these match the spatial scale of the *bio-physical* mechanisms?



Integrated delta projects

- **Rise & Fall: land subsidence, groundwater and salinization in the Mekong delta;**
- **Living Polders: economic development and natural dynamics in Bangladesh' polders;**
- **Adaptive Delta Management (with TU-Delft): long-term adaptation pathways Bangladesh & Jakarta;**

Does the NL approach fit here...?



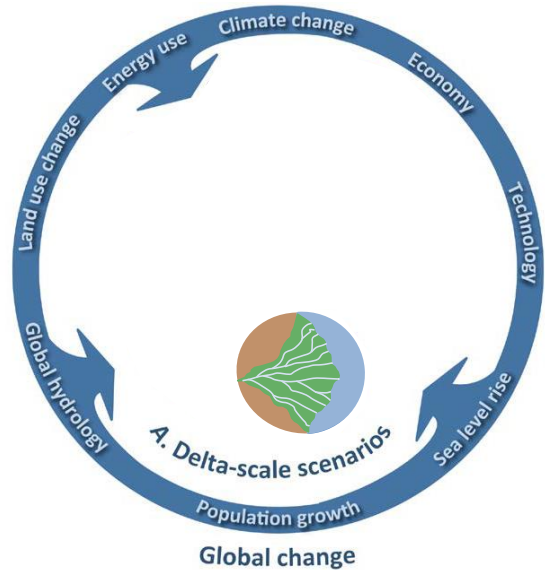
Next step: Water, Climate & Future deltas

- Knowledge 'hub' of UU theme Sustainability
- Extension to Future Deltas: external drivers + time dimension
- Design and evaluate pathways and strategies towards sustainable deltas
- By integrating and applying the science of multiple disciplines within UU and partners.

WCFD - approach

- A: External drivers
- B: Delta functioning
- C: Pathway development

- System understanding
- Long-term horizon (≥ 2100)
- Cases ('living labs') with end-users:
 - Different environments
 - Different deltas



Delta research – integration of disciplines

What we learned:

- Stay expert in your discipline
- Be able to explain your work to other disciplines
- Be open to understand other disciplines and their methods
- Be aware of what is not your expertise – and invite others
- That takes time, and personal interest
- Increasing opportunities for funding, research output and valorisation
- It's fun!