

Building with Nature in deltas

Coastal adaptation through nature-based solutions

22nd May 2017, Wageningen, Prof. Tom Ysebaert (Wageningen Marine Research)



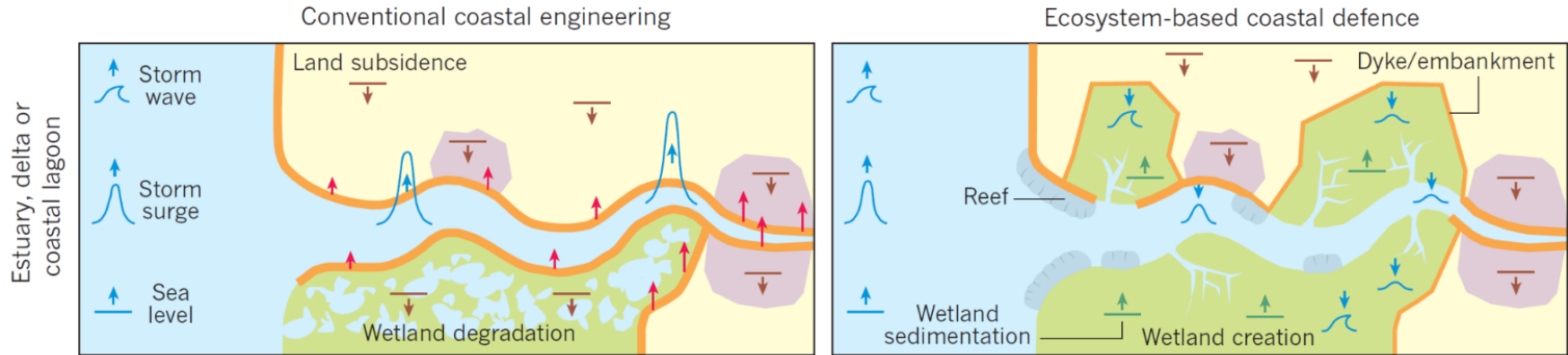
Deltas at risk

- Coastal populations and infrastructure increasingly threatened due to
 - Overpopulation, climate change



From conventional to ecosystem-based strategies

- Coastal ecosystems offer nature-based solutions that are sustainable, cost-effective, multi-purpose and flexible alternatives for various objectives.



REVIEW

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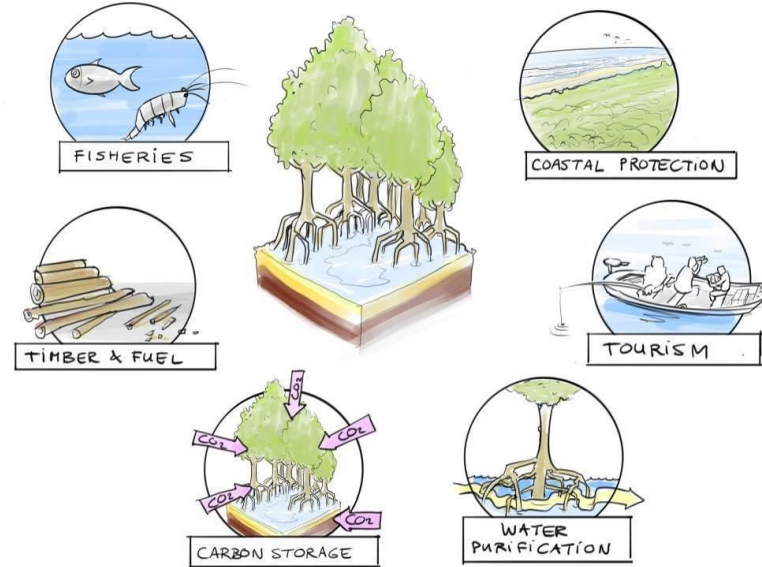
Ecosystem-based coastal defence in the face of global change

Stijn Temmerman¹, Patrick Meire¹, Tjeerd J. Bouma², Peter M. J. Herman², Tom Ysebaert^{2,3} & Huib J. De Vriend⁴

Multiple benefits

■ Ecosystem services:

- *Provisioning*: food, aquaculture products, raw materials
- *Regulating*: erosion control, flood control, carbon burial
- *Habitat*: biodiversity, habitats for species
- *Cultural*: tourism, education



Building with Nature Indonesia

- Securing eroding delta coasts



Current work: a successful pilot!

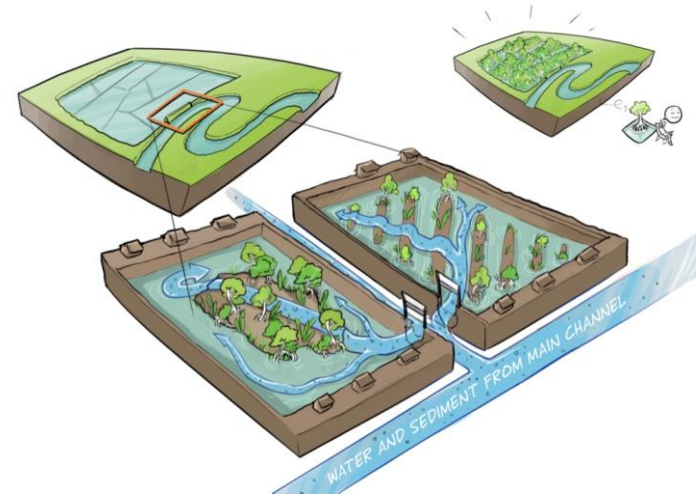
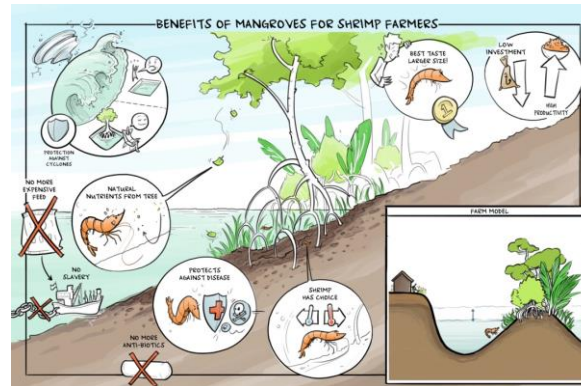
Increased sedimentation combined with natural recruitment!



Contact: Dolfi.debrot@wur.nl

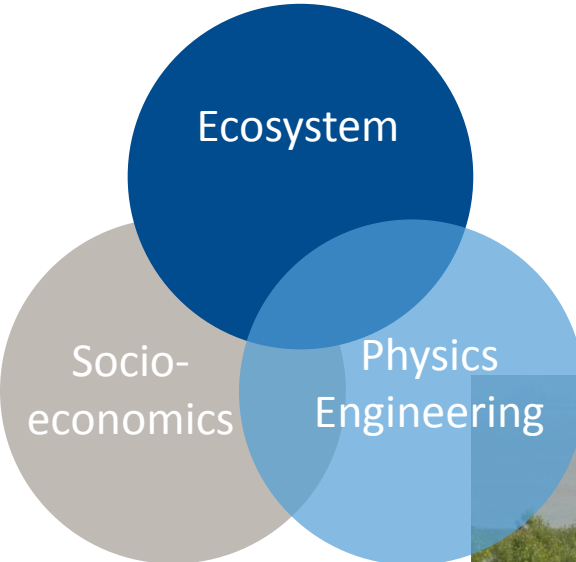
Polders with a future in Bangladesh

- Polders are drowning, rice cultivation under pressure, shrimp farming
- Nature-based solution: towards a mangrove based economy



Coastal habitat facilitation in Bangladesh

- Ecosystem-based coastal defense integrated with sustainable aquatic food production



Cook the Ocean Bangladesh Style



an illustrated seafood guide and cookbook



Conclusion and Challenges

- Paradigm shift: nature-based solutions promising alternatives
- Offers multiple ecosystem services (blue-green infrastructure) and adaptation strategies to climate change
- Requires thorough understanding of ecosystem functioning
- BUT: difficult to implement at full scale
- Socio-economical issues: institutional, local capacity building, securing land-ownership, connection to global markets, etc.

