

Resilient Sandy Strategies *Thinking, acting and interacting differently*

Jaap van Thiel de Vries

Ecoshape | Boskalis – Hydronamic



Building

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with



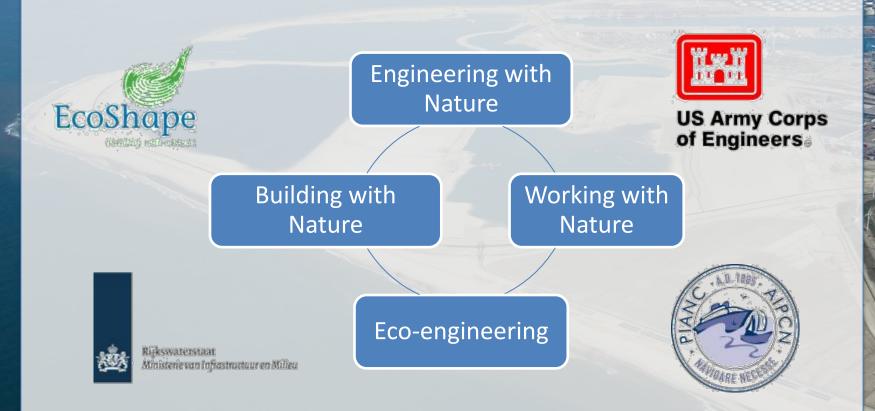
June 14, 2016

The need for resilient systems...



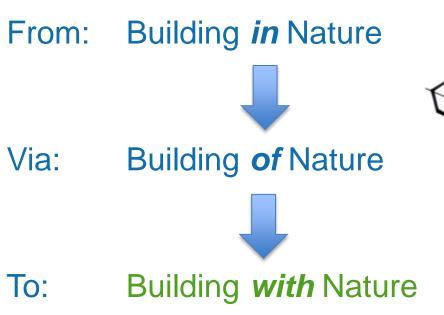
New challenges to marine infrastructure

What if we are so focused on minimizing negative effects that we miss opportunities to maximize positive effects?



The philosophy









Develop infrastructure and at the same time *use* and *create opportunities* for nature & society

Building with Nature Innovation Program



- Develop ecosystem knowledge for infrastructure development
- Develop scientifically sound design rules and norms
- Make the concept tangible by creating practical BwN-examples
- Bring the BwN-concept forward in society and make it happen

Learning by doing

soft solutions

Tropical



Pilot Sand Motor Delfland Coast



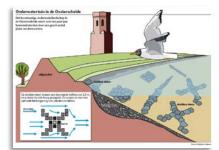
Dike with Sandy foreshore Markermeer



Oyster reefs Oosterschelde



EcoShape



Underwater garden Eastern Scheldt



Coastal protection Sea grass



Securing mangroves coasts

(North java Indonesia)

Coral reef restoration



'rich levee' Singapore





Opportunities for resilient sandy strategies The Dutch context

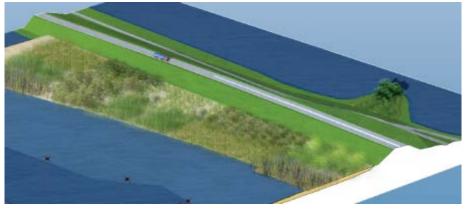


Opportunities for resilient sandy strategies

Sandy Beaches and Dunes



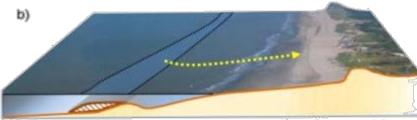
Dikes and Dam



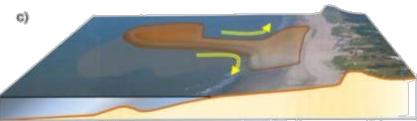
Sandy strategy as alternative for conventional dike reinforcement



Traditional beach and dune nourishment



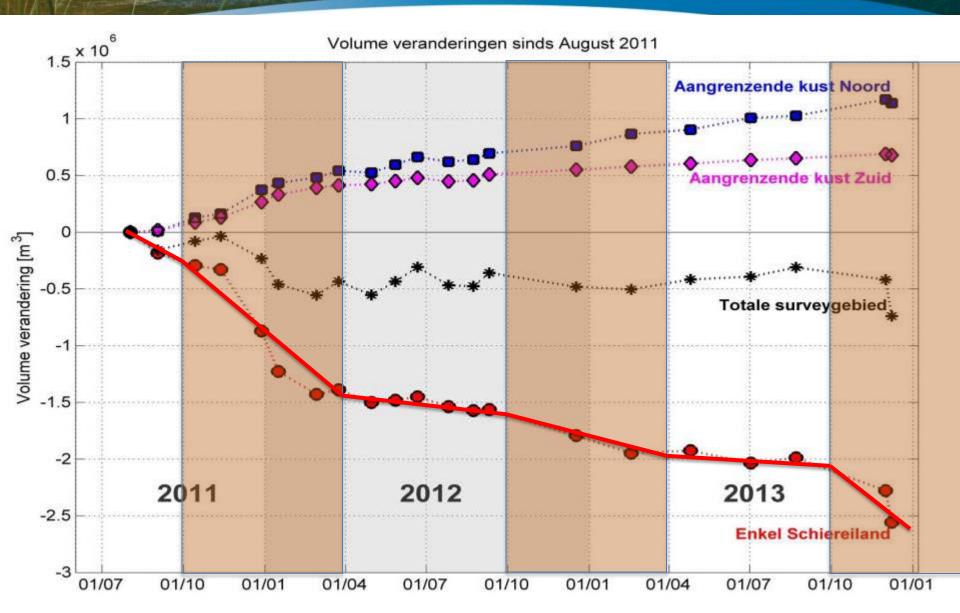
Shoreface nourishment



Localized mega nourishment

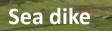


Use nature to create resilience... Enhanced spreading to adjacent coastal sections during storm season



The Pettemer Sea Defense Increasing resilience by introducing a sandy beach and dune system

Sandy beach & dunes





Creating multifunctional landscape's Influence nature with initial condition to get desired landscape properties

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Pilot sandy foreshore Houtribdijk: Sandy vegetated foreshore as alternative for conventional dike reinforcement

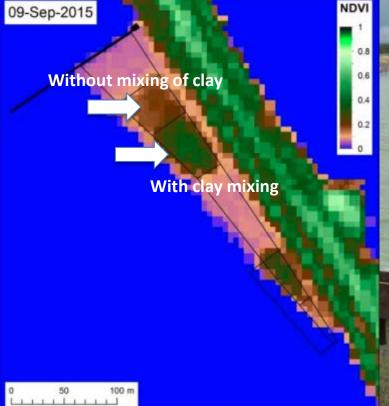


Hoogwaterbeschermingsprogramma



Engineering with vegetation First findings...







BUILDING WITH NATURE

Thinking, acting and interacting differently

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www.EcoShape.nl Guideline

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How to use this Guideline?

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