

Does a Delta dike increase resilience in flood management?

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Flood Control

- System predictability
- Preventing undesired activities or events
- Forecasting all future developments

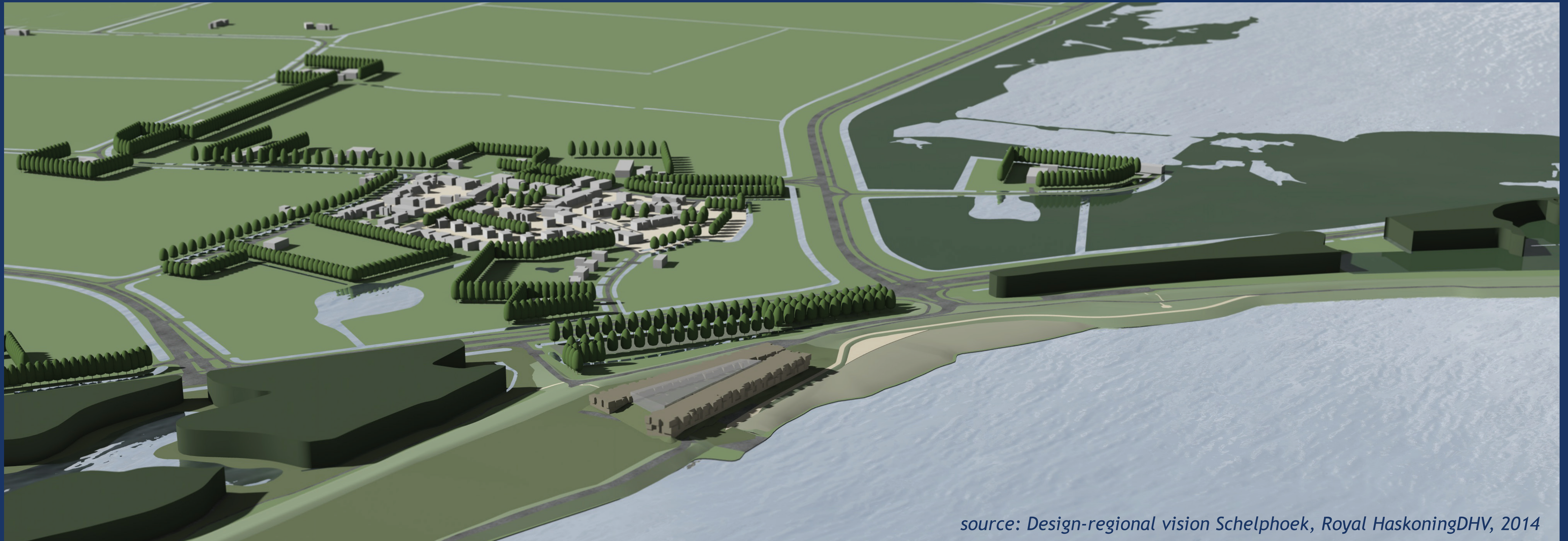
versus

Flood Resilience

- Handling change
- Reducing consequences of events
- Expecting surprises

Framework for discussing policy in terms of resilience and control

We have developed a 'language' for actors to evaluate policy in terms of resilience and control, based on an overview of system attributes for both rationales. We applied our framework to evaluate a Delta dike policy plan.



Schelphoek, the Netherlands: Integrating a Health Care Resort with the primary flood defense

Control rationale

Optimization

Best strategy of flood defense

Clear division of governmental responsibilities

Confining water dynamics

Prescriptive regulation

Intensification

Economical allocation of resources

Functional connectedness or modularity

Separating building and dike functions

National regulation

Clear spatial division

Focused response

Waterboard managing water safety

Only governmental actors involved

Formalized governmental problem representation

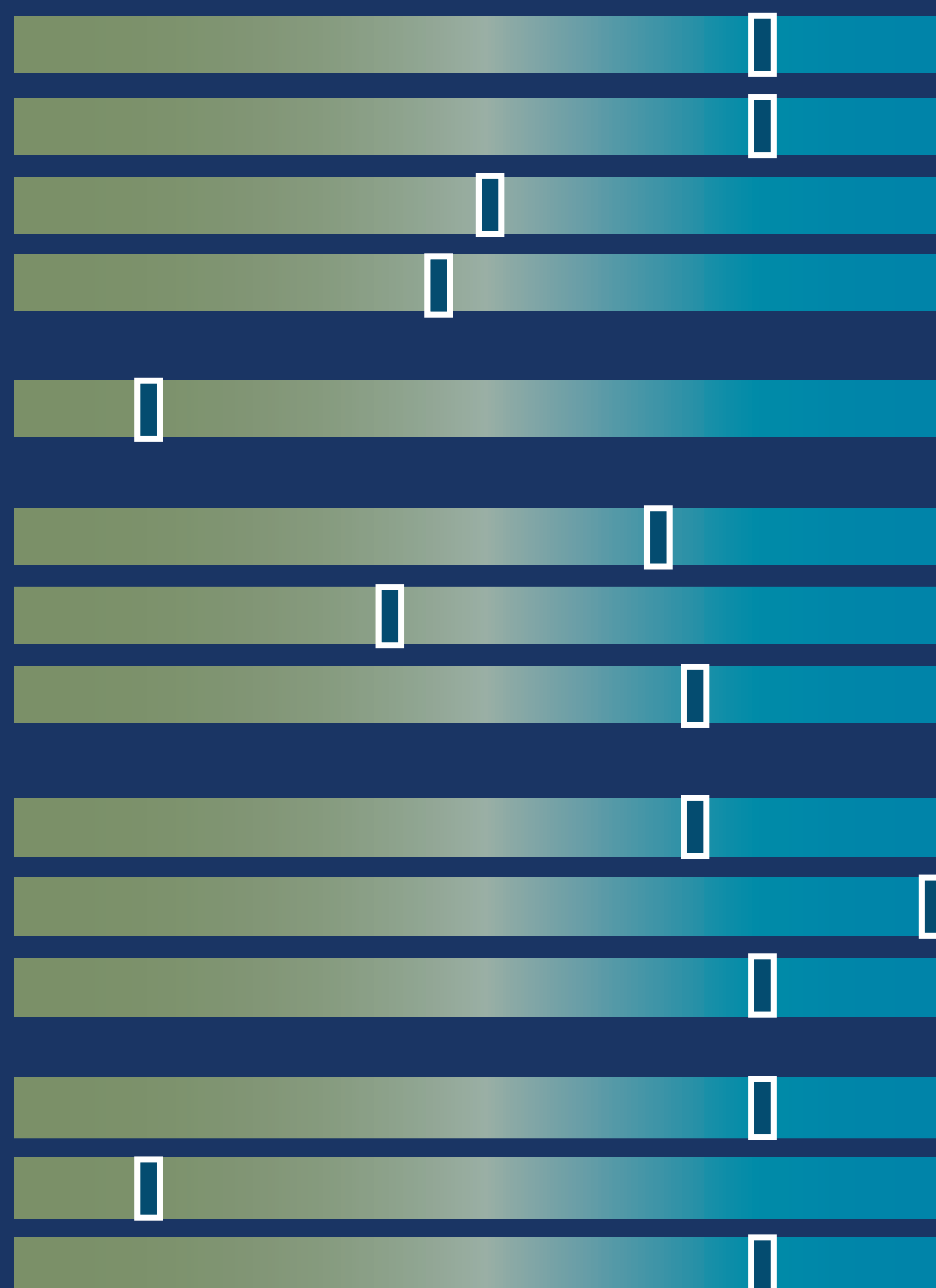
Fixation and sustaining

Refinement of resort plans

Focus on forecasting future developments (ex-ante)

Actors focus on optimizing a specific function

□ = case Schelphoek



Resilience rationale

Diversification

Flood defense + water-proof building + evacuation

Sharing responsibilities

Water dynamics shape spatial planning

Area-tailored planning, relieving inhibiting rules

Creating reserves

Reservation/redundancy for handling surprise

Modular-connected system

Integral vision on building, dike, environment

Area-based initiatives

Combining water safety/ healthcare/recreation

Adaptive response

Case-specific participation structure

Participation of local community

Alternative views allowed

Changing and adjusting

Regular evaluation and possible adjustment

Flexibility for future adaptation

Focus on joint learning approach

Evaluation Delta Dike Schelphoek

The Delta dike is sometimes advocated for increasing resilience without relieving control. In case Schelphoek we see it is possible to reconcile strong points of both rationales (+), but we also see trade-offs (-) for either rationale when combined in the Delta dike.

- + robust for expected future developments
- + efficiency through multifunctionality

- reduced clarity of function and responsibility

- + shared initiative
- + complementary flood strategies: water-proof building

- limited flexibility for future adaptation
- on a higher spatial scale the dike further confines flood dynamics and increases system modularity