

The Dutch Coastal Resilience Strategy: Now & The Future



12 December 2023



Deltares





**15 years old
100 years of expertise**

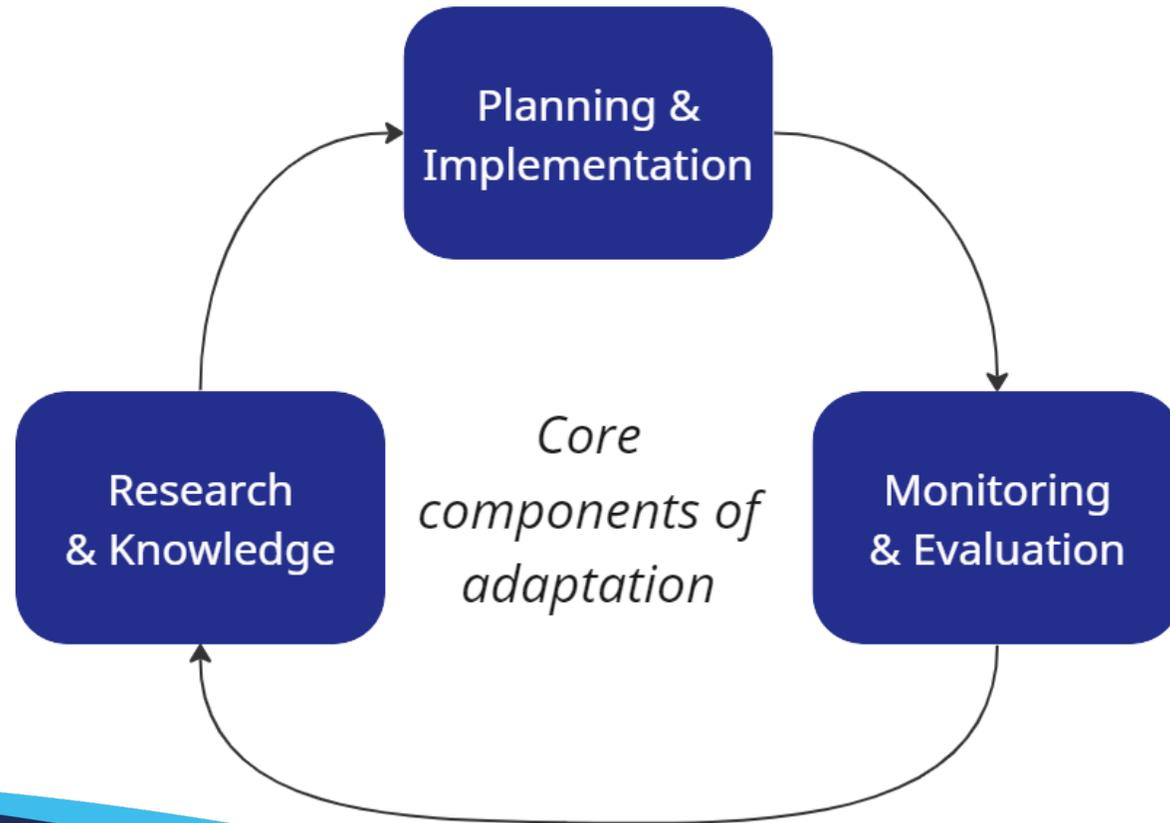
Who we are

Deltares

- We are *the* knowledge partner of the Dutch government
- We make our knowledge applicable worldwide
- We enhance the innovative strength of The Netherlands
- We are a strategic partner internationally
- We provide specialist consultancy internationally



The Dutch Coastal Resilience Strategy



The Netherlands

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- Low-lying nation with a highly exposed coastline facing the North Sea
- At least a third of the country lies **below** sea level!

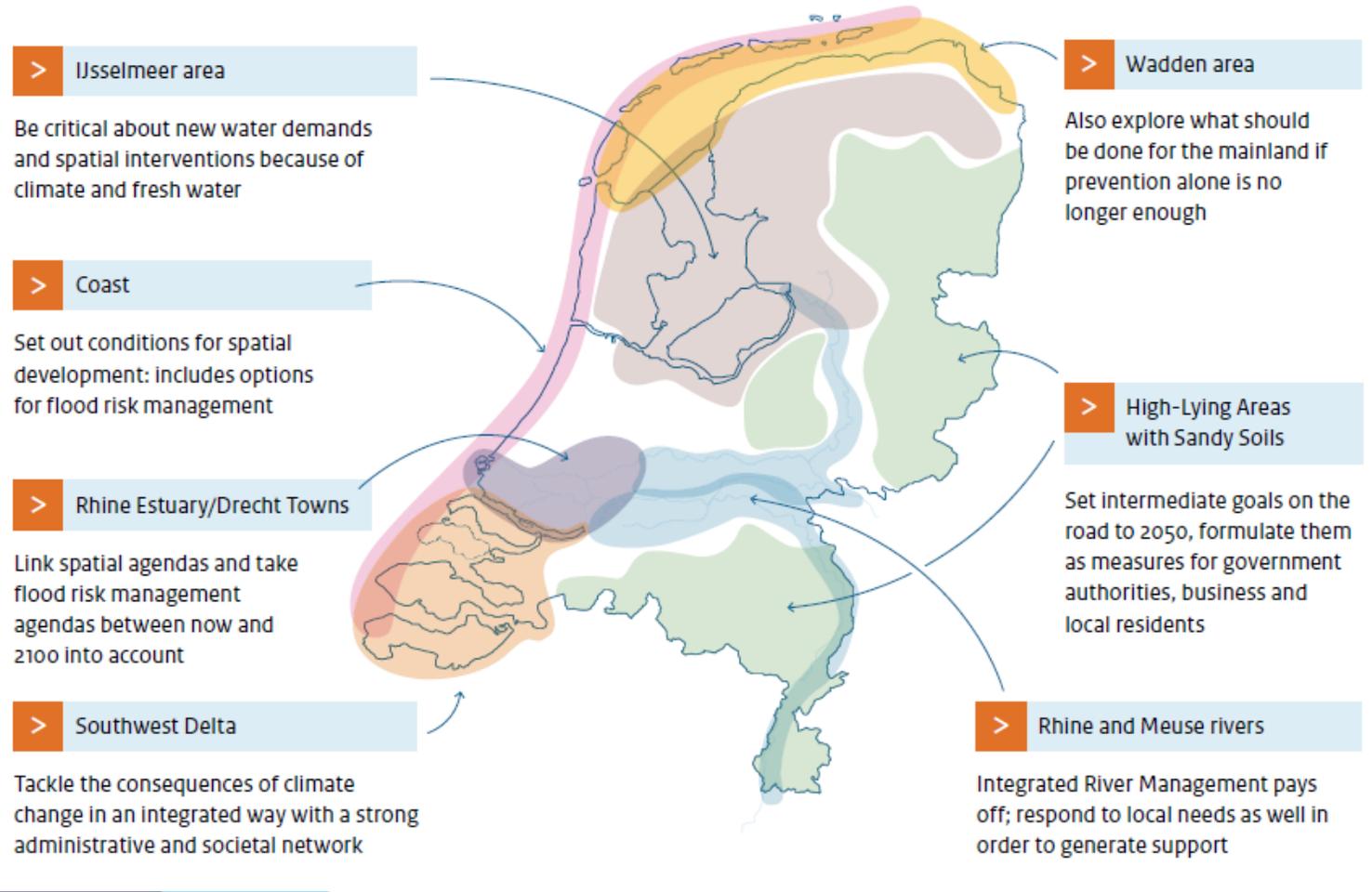
The Dutch have a long history of living with and managing water

The Dutch fight against rising sea levels

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Long history of intense water management for flood risk reduction owing to the number of lakes, rivers, canals and polders

Area-based management increasingly needed due to area-specific system functioning (environmental, social and institutional!)



Large-scale water management

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Devastating floods in Zeeland (southern province) in 1953

Alongside riverine floods in the 1990s in Limburg, a legal framework was created to tackle flood risk reduction

Borne out of an existential necessity to protect lives and livelihoods, large-scale dam works began in 1954 to create what is now known as the **Delta Works**, a group of large dams, sluices and (moveable) barriers designed to protect the country against 1 in 10,000-year storm events.



Delta Works



Eastern Scheldt (moveable) barriers

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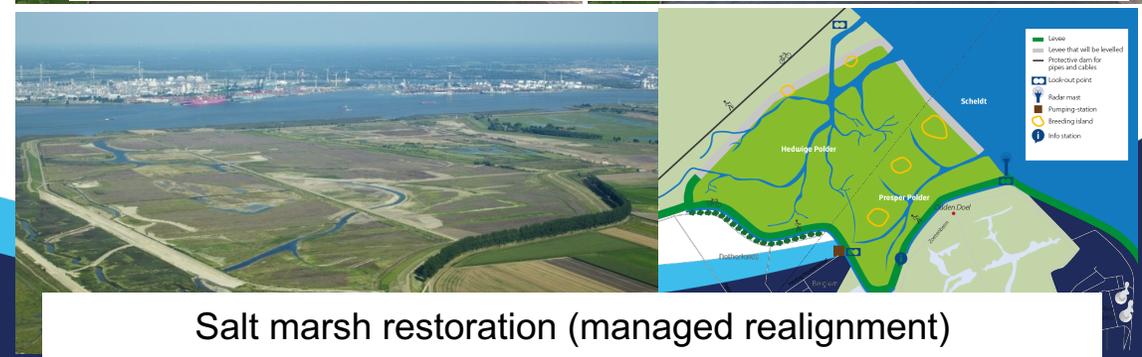
Maeslant barriers

Modern strategy for coastal resilience: Grey where needed, Green where possible

Increasing attention from the 1960s on ecological effects of traditional grey infrastructure on natural systems

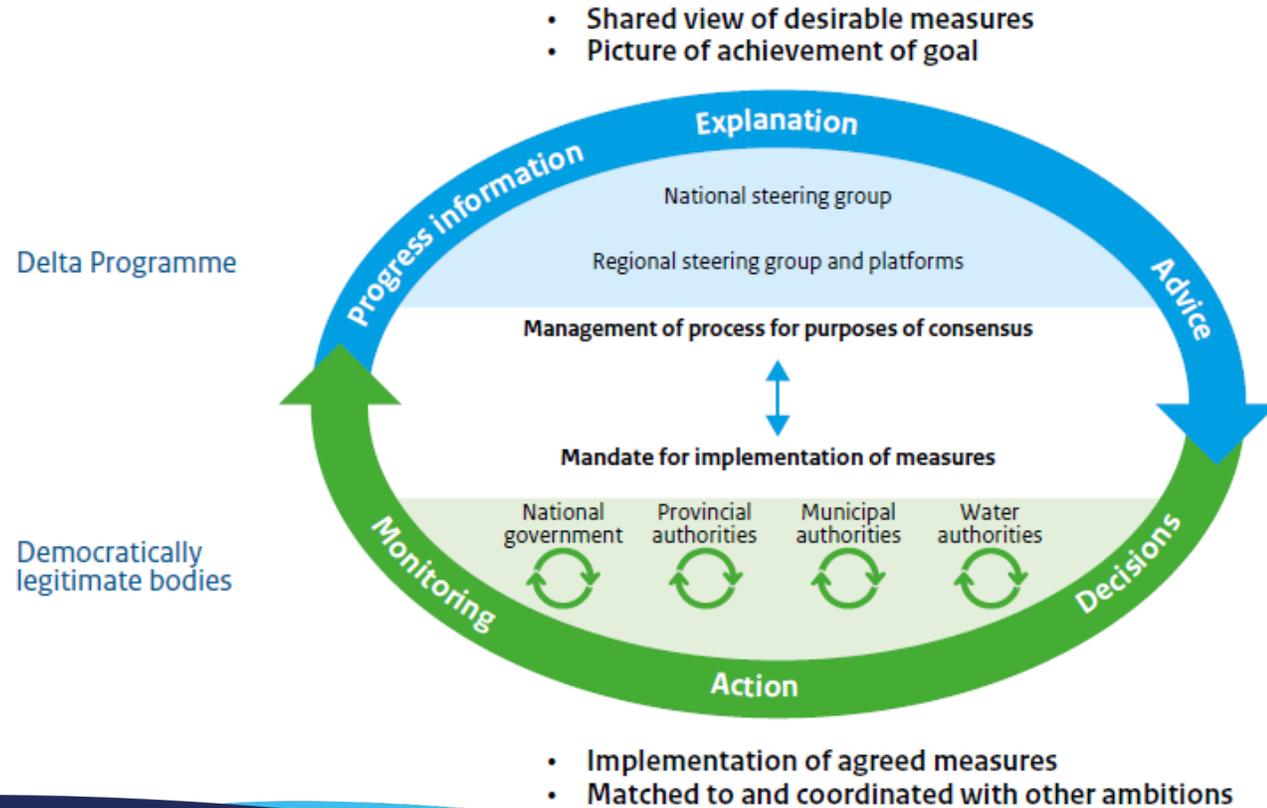
- Off-setting began for large-scale reclamation or high-impact works

- Making room for nature: *Room for the River*, *Sand Engine*, *Dune and salt marsh restorations*



Delta Programme: Adaptive Delta Management

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Strong knowledge and implementation ecosystem between national government, provincial, municipal and water authorities, and knowledge and research institutes

From National to International: Knowledge sharing and capacity building

International Panel on Deltas, Coasts & Small Islands (IPDC)

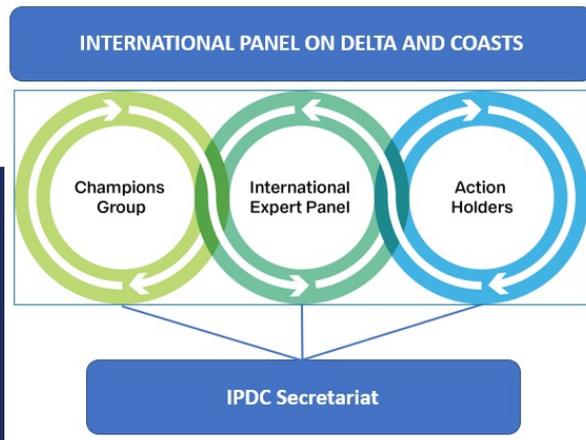


<https://deltasandcoasts.net>

An initiative of the Netherlands (Ministry of Infrastructure & Water)

- To close the adaptation gap by unlocking **climate financing** to accelerate climate adaptation
- Demand-driven process to formulate activities up to 2030
- 16 member countries, 3 development banks (ADB, GCF, IADB)
- Project between **2022-2030**

Structure of coordination and communication within IPDC



High-level commitment of 10 member countries during the UN Water Conference March 2023



Demand-driven activities with each member country





***Another existing Dutch initiative:
Public-private partnership for pre-competitive works such as implementation and upscaling projects***

A partnership between private sector and public bodies (government, research and knowledge institutes) using a '*Learning by Doing*' approach with global projects



Building with Nature

Active international networks

Value chain: observations – forecasts – products for users



EuroGOOS Coastal Working Group



Integrated coastal and ocean observing and modelling system

GlobalCoast

CoastPredict's Global Coastal Ocean Experiment.

Research & Knowledge



IPCC WGII Technical Support Unit



National University of Singapore – Deltares Knowledge Alliance

Earth Observation and biodiversity



Global biodiversity observation network
Deltares: co-leader of Ecosystem Function working group



Ecosystem and biodiversity (Deltares leading with CNR)

Coordination on global ocean forecasting



Deltares: chair of NE Atlantic Region

Deltares

Earth Observation and water quality



International, science-based organization
Deltares: leading technical node on Data Science



EMODnet



EMODnet Partnership for China and Europe (EMOD-PACE)

Thank you!

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