



Delta Programme Commissioner

The Dutch Delta Approach

Introduction and background to the national programme for flood safety and freshwater supply

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The past...

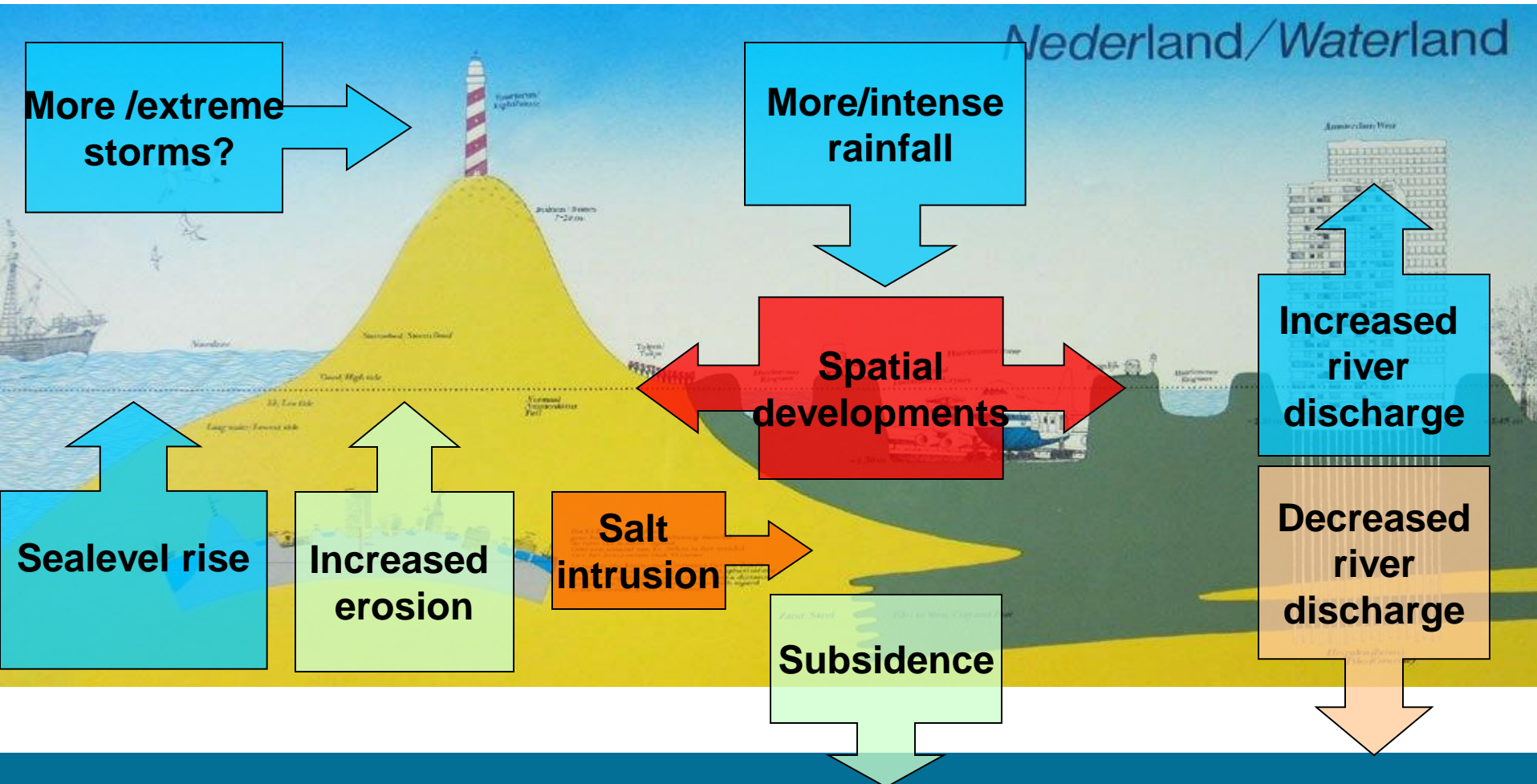
Large plans implemented as response to disaster:

- 1916 floods (North)
 - Structural solutions with dams and barriers (Afsluitdijk dam to create IJsselmeer)
- 1953 flood disaster (South-West)
 - First Delta Committee
 - Structural solutions with dams and barriers (Delta Works)
- 1993/1995 high water levels (Rivers, large evacuations)
 - Also spatial solutions: Room for the River/Meuse Projects





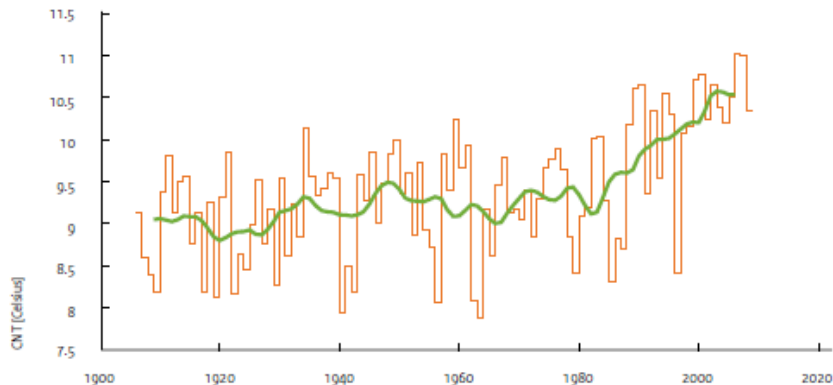
The Delta Under Pressure: future challenges, measured





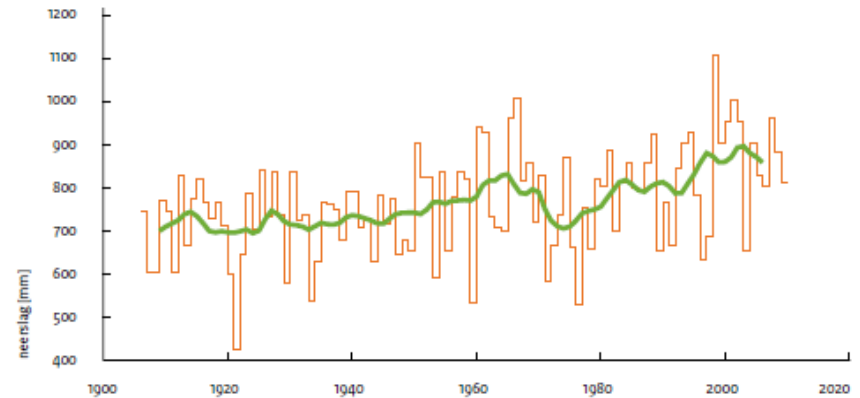
Average mean temperature and mean precipitation between start of 20th century and 2009

Januari - December temperatuur CNT



Figuur 1: Jaargemiddelde temperatuur Bilt en omgeving tussen 1900 en 2009. De dikke groene lijn volgt een voortschrijdend 30-jaar gemiddelde.

Januari - December Neerslag gemiddeld over 13 stations

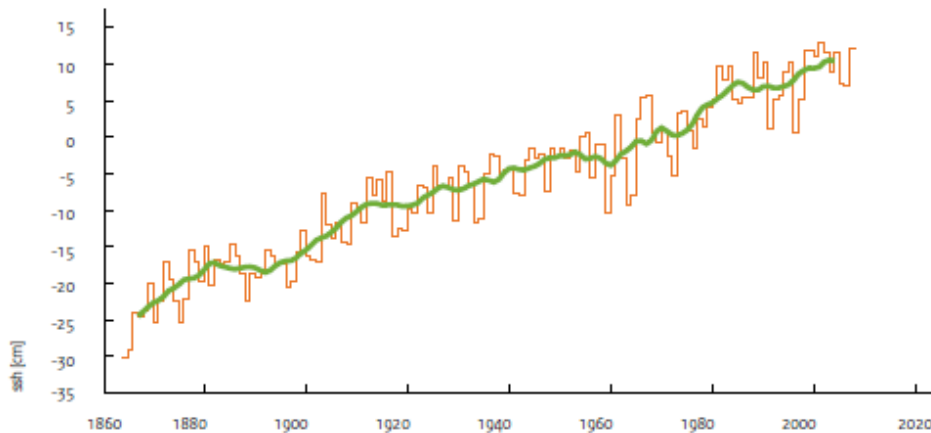


Figuur 2: Jaarlijkse neerslag in Nederland (gemiddelde van 13 stations) tussen 1906 en 2009. De dikke groene lijn volgt een voortschrijdend 30-jaar gemiddelde.

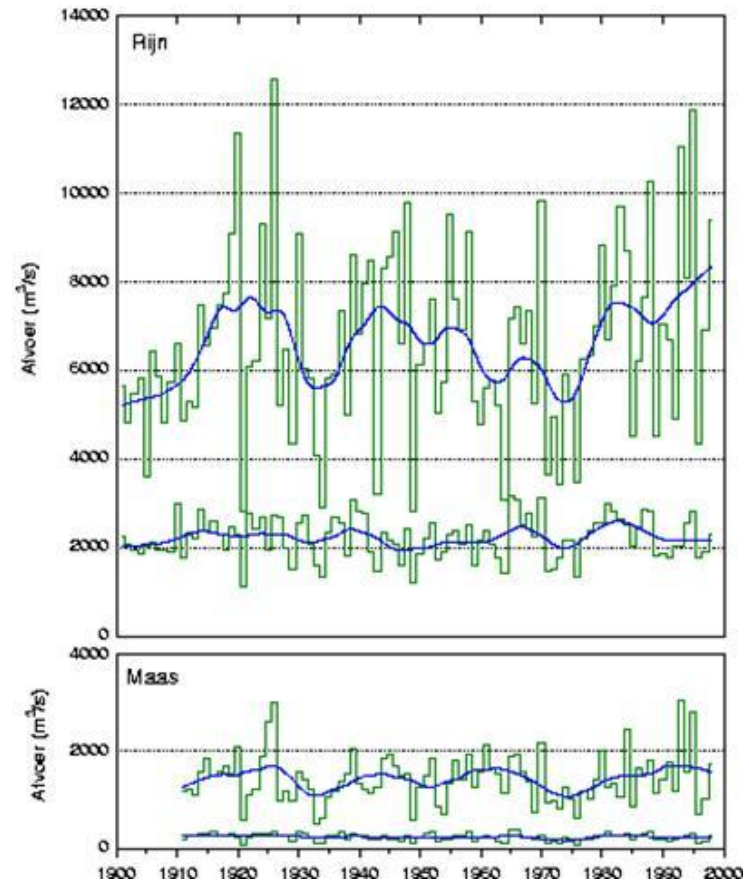


Average sealevel at Hoek of Holland between 1865 and 2007 (including subsidence) and yearly discharges of Rhine and Meuse in 20th century

Januari - December zeeniveau Hoek van Holland (150051)



Figuur 3: Gemiddelde zeespiegelstand in Hoek van Holland 1865 en 2007, inclusief bodemdaling. De dikke groene lijn volgt een voortschrijdend 30-jaar gemiddelde in de waarnemingen.





An innovative approach: Delta Programme

2008: Advice by state commission (after Katrina)

2010: DP aimed at keeping NL a good, safe and attractive place to live and work

2011: Legal base established, 1-1-2012 in effect

- Two goals, three values
 - Safe now and in the future [2050-2100]
 - Fresh water supply guaranteed also in dry periods
 - Solidarity, flexibility, sustainability
- Not in answer to a disaster, but in advance, to be prepared and avoid it
- Annual update to parliament





Present – 2015: ongoing implementation

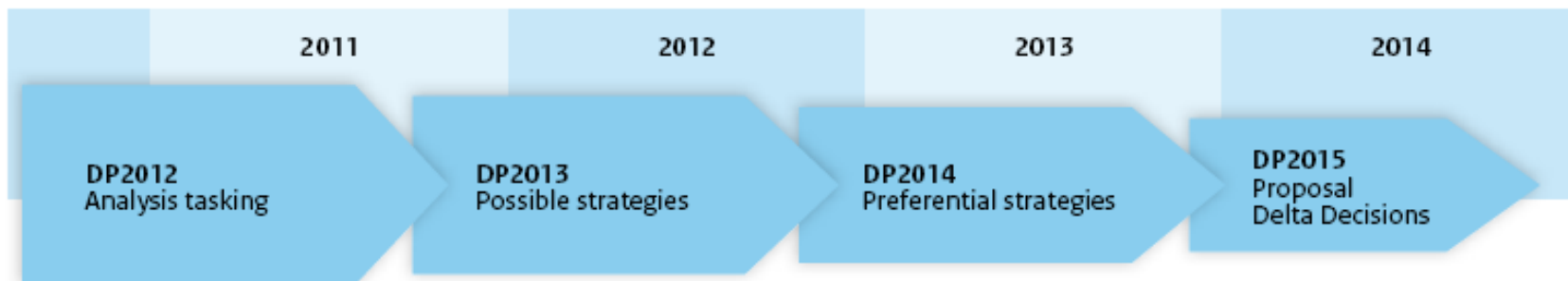


Ongoing programs under the DP umbrella:

- Flood Protection Program / Weak Links in Coast
 - Organizing safety on the basis of dyke inspections
- Room for the River / Meuse Projects
 - 90 projects along the rivers

At the same time looking further ahead:

- Preparing Delta Decisions





5 key decisions, 2014-15

- Safety standards and program
- Spatial adaptation
- Freshwater strategy
- Meuse-Rhine Estuary
- Lake IJssel





Multigovernmental process

Different levels of government collaboration in 9 subprogram teams:

- Joint fact finding
- Collect creative and innovative ideas
- Combine with local developments
- Involve stakeholders / interest groups and built acceptance

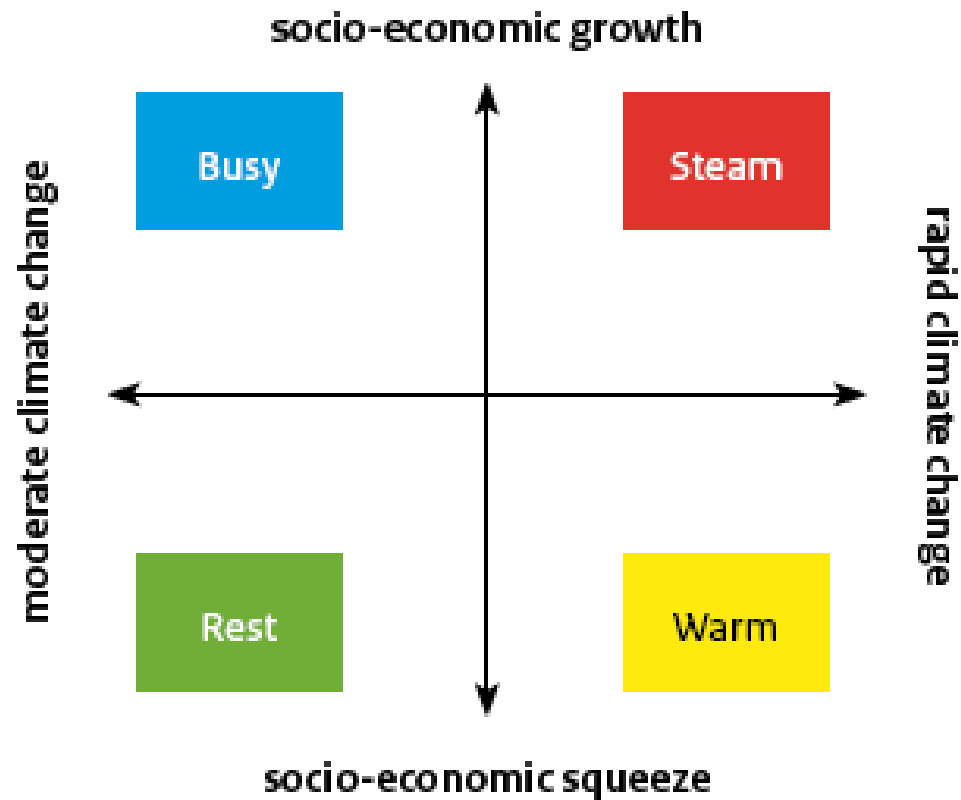
Supervised by Delta Programme Commissioner

progress, uniformity, coherence, transparency

present rolling on Delta Program / proposal to Government



Uncertain future: scenarios





From scenarios to strategies

- Scenarios show us 'tipping points':
 - Maeslant barrier
 - Afsluitdijk / lake IJssel
 - Fresh water inlets
- Adaptive delta management
- Preparation of larger works related to 'tipping points'

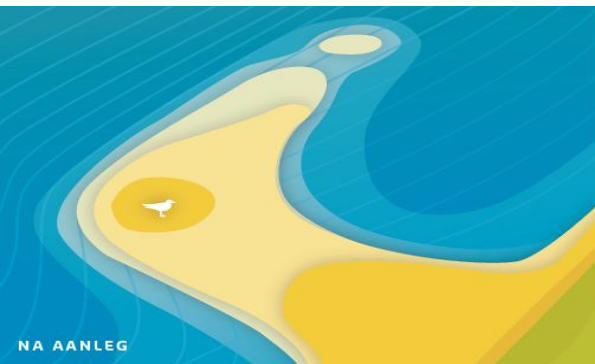




Innovations

Possibilities for innovative solutions in our home-market

- Building safety using nature
- Technology/sensors integrated in dyke body
- Separating fresh and salt water ('bubble-screen')
- The sand engine





To conclude: The five Dutch D's

- Delta Programme
- Delta Decisions
- Delta Commissioner
- Delta Fund
- Delta Act

A safe and attractive country,
also at the end of the century

