



Dutch Delta Program Approach

Context and opportunities for Ria Aveiro

Dick van den Bergh

email Dick.vandenbergh@Deltares.nl

www.deltares.nl

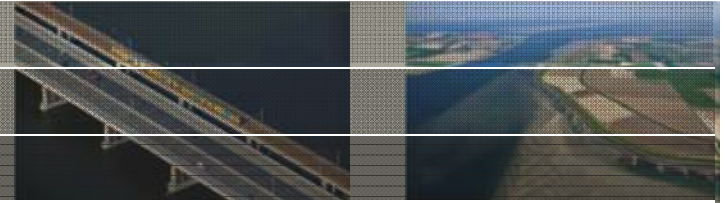
14 March 2013



Contents

- 1. Context (Historical and Institutional)**
- 2. Drivers and Challenges**
- 3. Approach and results**
- 4. How could it work for Ria Aveiro?**

1. Context



1. Context - 2

Anno 1550

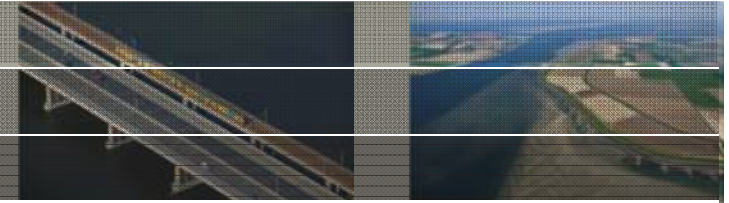


Anno 2013



Deltares

1. Context - 3



Anno 1550



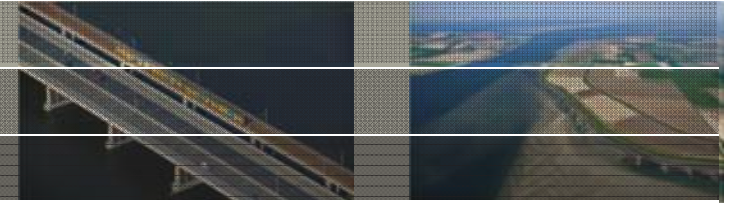
< 1 Mln inhabitants
Main land use agriculture
Population density 24/sq km

Anno 2013

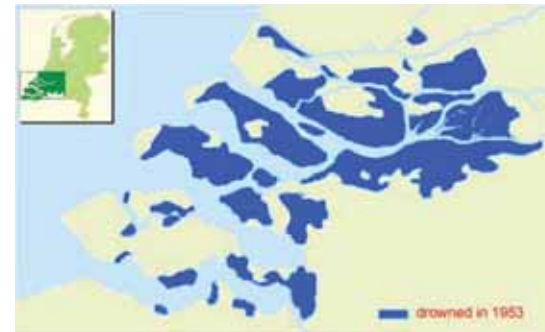


> 17 Mln inhabitants
Main land use urban
Population density 450/sq km

1. Context - 4



Hard lessons from the past...

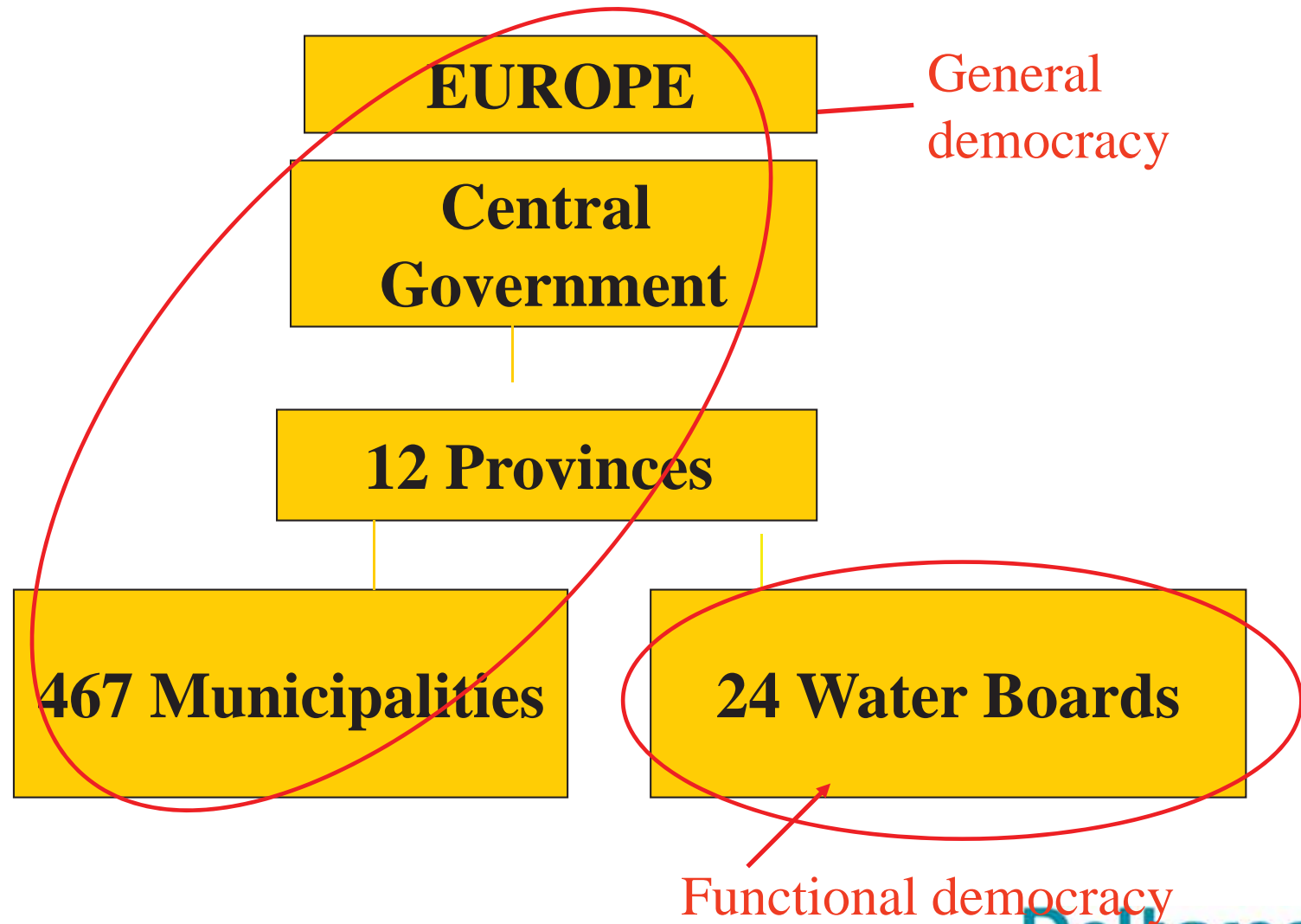
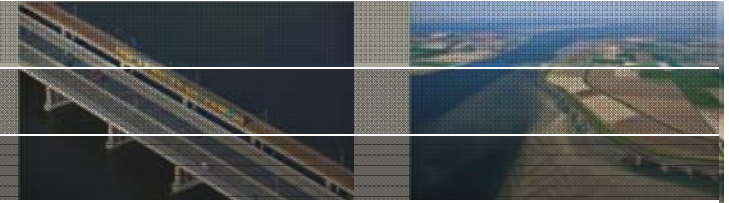


1953

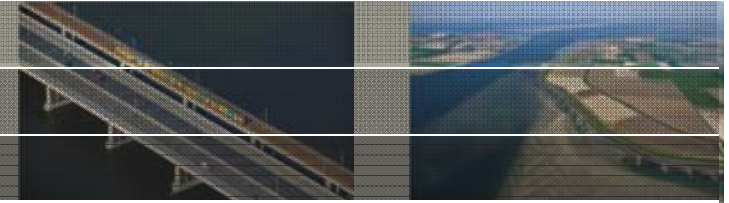
1995



1. Context - 5



1. Context - 6



Ministries : policy guidelines, management national water system, European guidelines

Provinces : spatial planning, climate change adaptation

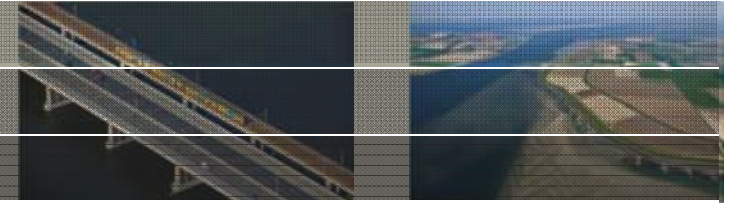
Municipalities : local planning, water and disaster management

Water boards: flood protection, regional water management

Private sector: water supply and demand

Instruments: National Water Plan (2009), Governance agreements on water (2011), Water Act, Spatial Planning Act (2009)

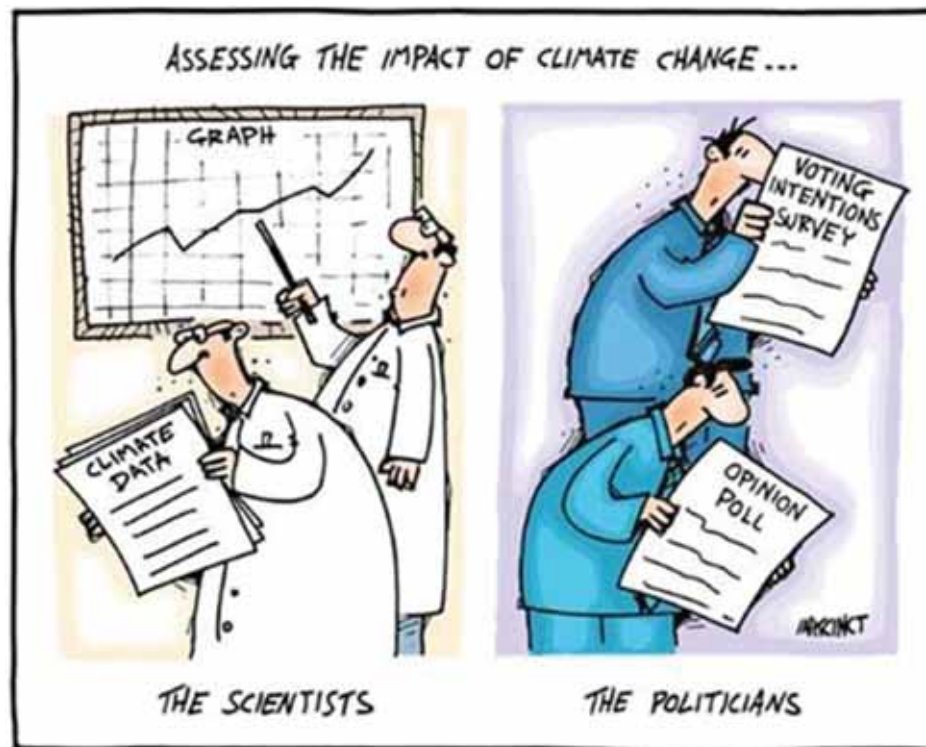
1. Context - 7



Spatial dimension and location



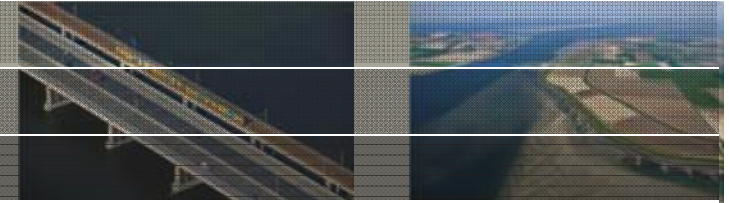
1. Context – 8



the Deltares' role on science – policy interface

'linking knowledge, methods and tools into multi – stakeholder governance processes'

1. Context – 9



Veerman (2nd Delta-) commission



Finding:

Scientists do not agree on magnitude of Climate change and sea level rise

Asked basically three questions

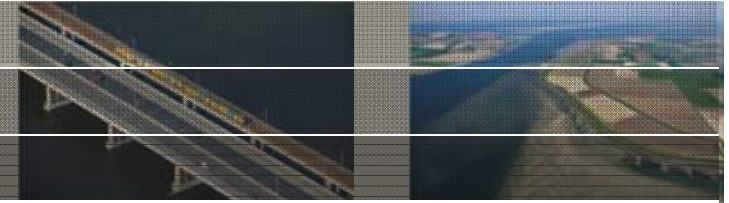
1. What is the maximum plausible SLR between now and 2100 (**130cm**)

2. Are we able to defend the Netherlands to that rise (**YES**)

3. What will it cost (**~ 1 B-EURO/yr**)

4. Can we pay this (**YES**)

1. Context – 10

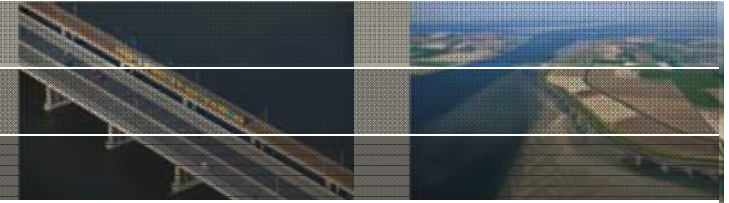


An innovative approach: Delta Programme

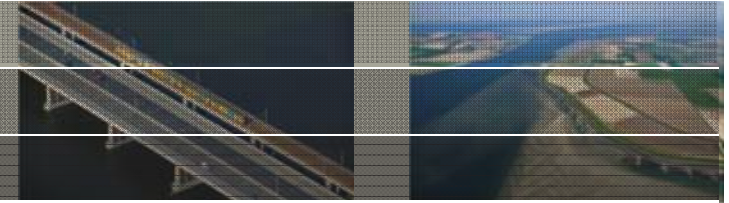
- To keep NL a good, safe and attractive place to live and work
 - now and in the future [2050-2100]; being prepared
 - Fresh water supply guaranteed, also in dry periods
 - Solidarity, flexibility, sustainability
- For the people and the economy
- Not as an answer to a disaster, but in advance, to be prepared and avoid it



2. Drivers and Challenges



2. Drivers and Challenges - 2



Driver: Sea level Rise



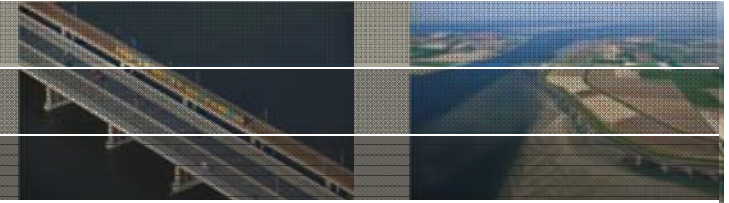
Driver: Urban Growth



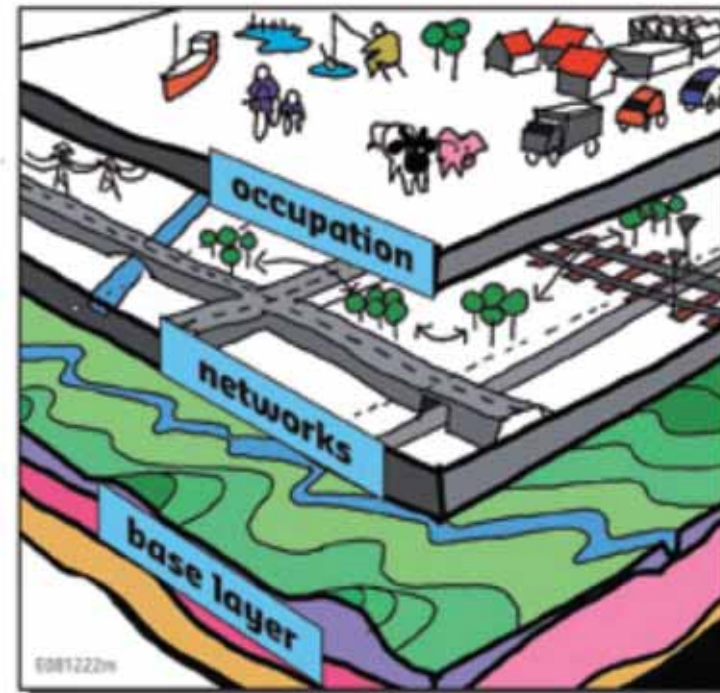
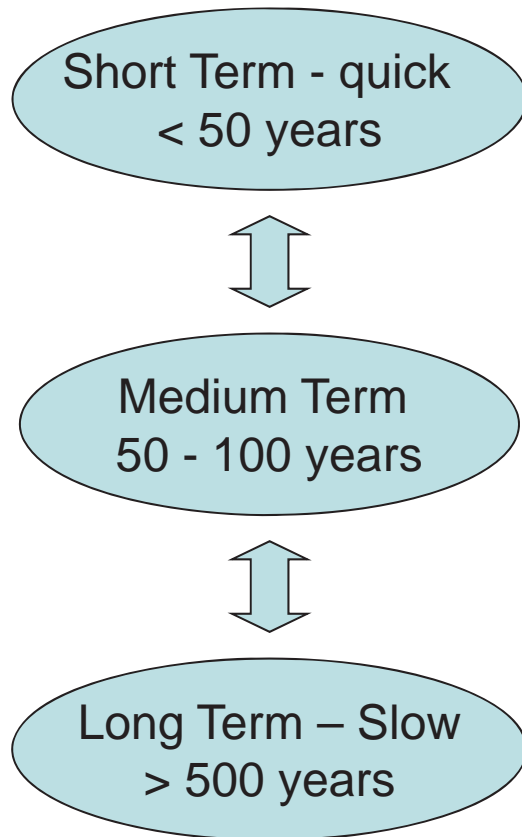
Driver: Soil Subsidence



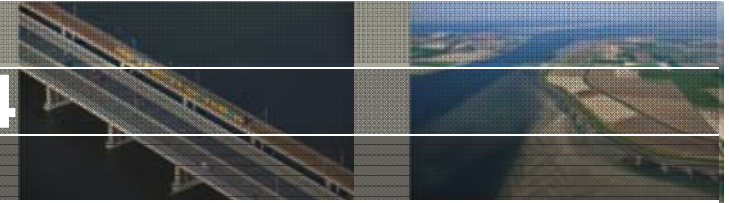
2. Drivers and Challenges - 3



Multi Layer Approach in Spatial Planning



2. Drivers and Challenges - 4

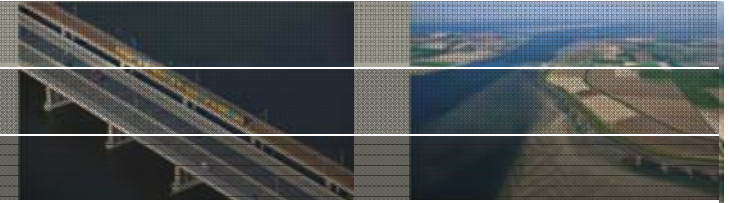


Multi Stakeholder Analysis



Always try to find 'Win - Win'

2. Drivers and Challenges - 5



Public

State

Province/ Prefecture

Municipality

Water board

Private

All inhabitants

Property / company owner

Real estate developers

Housing associations

Waterworks

Electricity companies

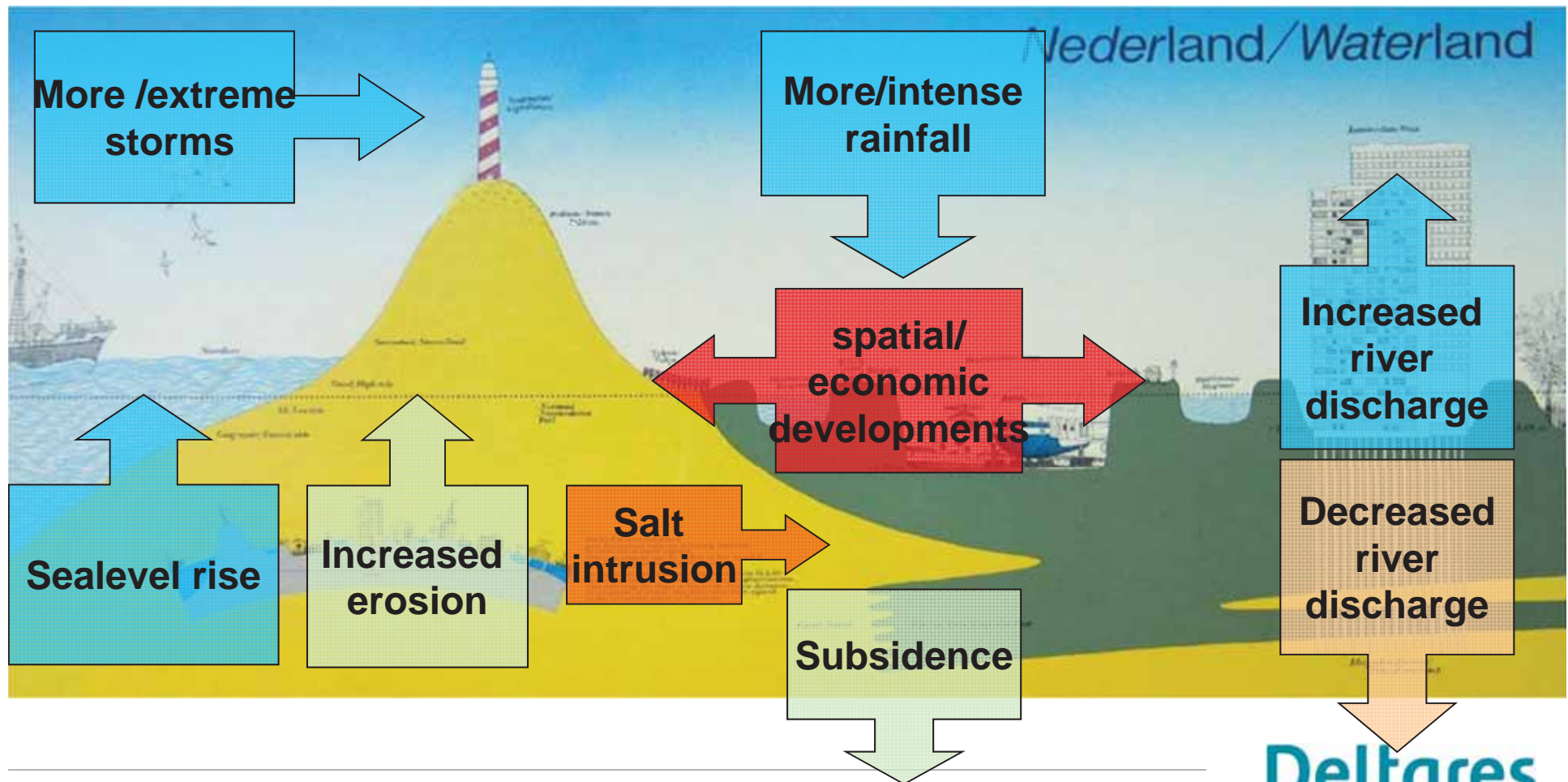
Telecom companies

Insurance companies

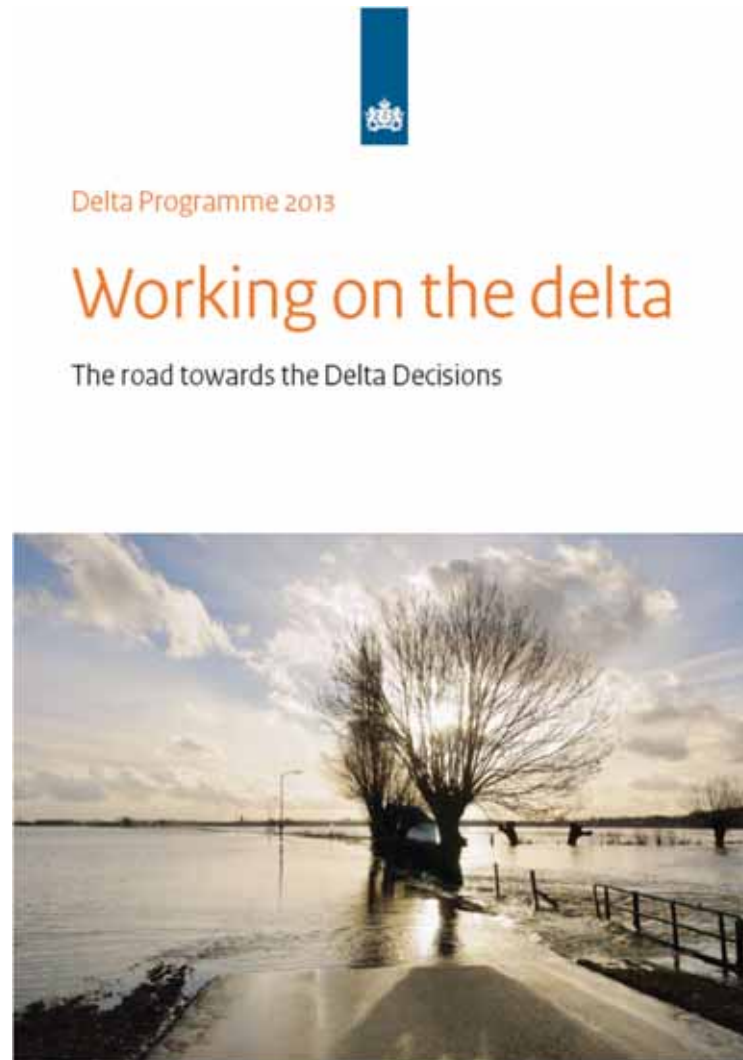
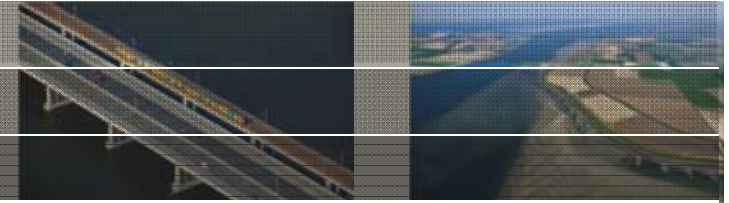
Mortgage banks

2. Drivers and Challenges - 6

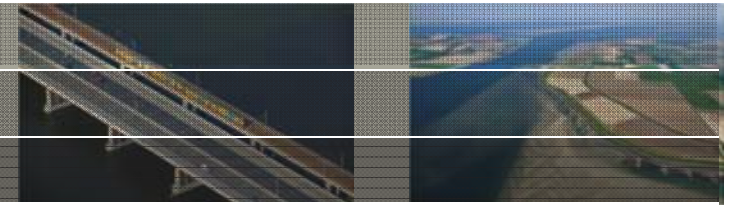
Issues to face; Delta under pressure



3. Approach and Results



3. Approach and Results - 2



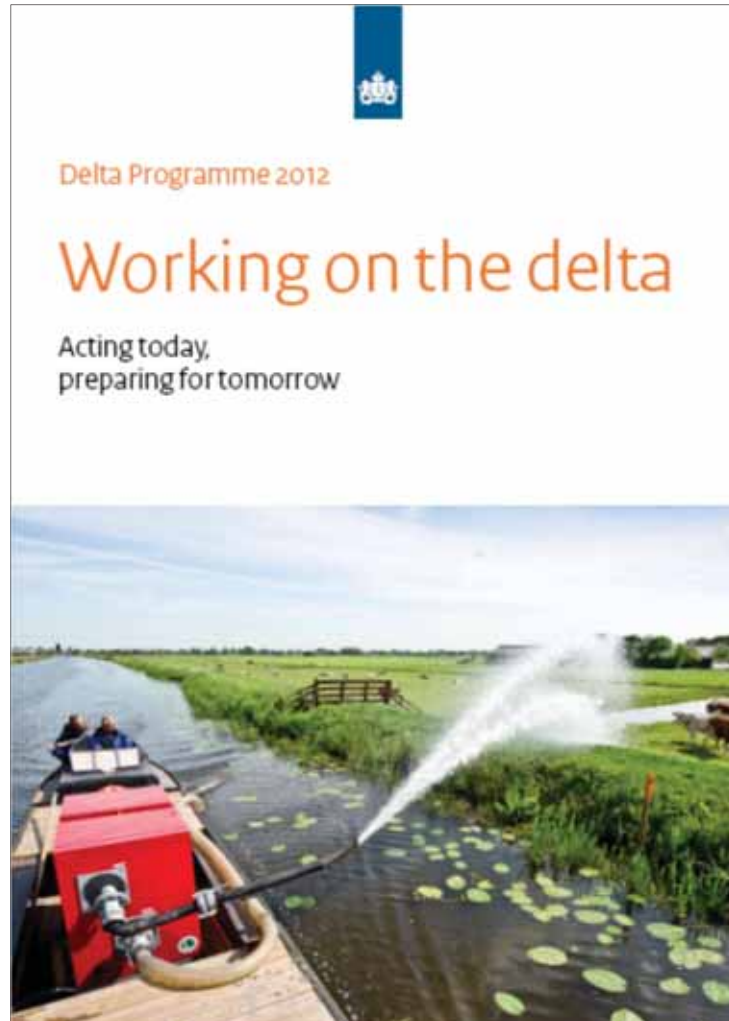
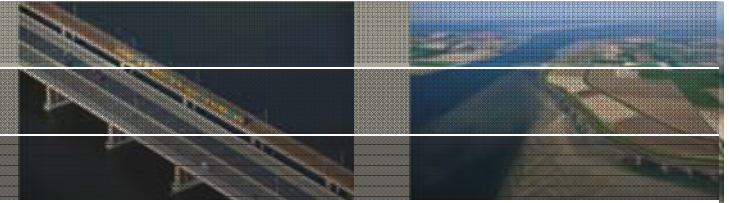
3 national programmes:

- Safety standards + program
- Urban and spatial restructuring
- Freshwater strategy + measures

6 regional programmes



3. Approach and Results - 2

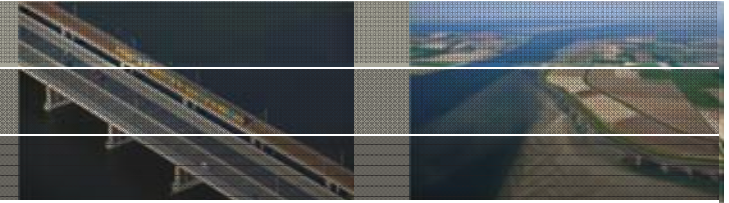


The five Dutch D's

Delta Programme
Delta Decisions
Delta Commissioner
Delta Fund
Delta Act

<http://www.government.nl/issues/water-management/delta-programme>

3. Approach and Results - 3



Delta Programme

approach, yearly update
for the Parliament

Delta Decisions

strategic, 2015

Delta Commissioner

supervising adequate
coherence, (regional) multi-
governmental
implementation



Delta Fund

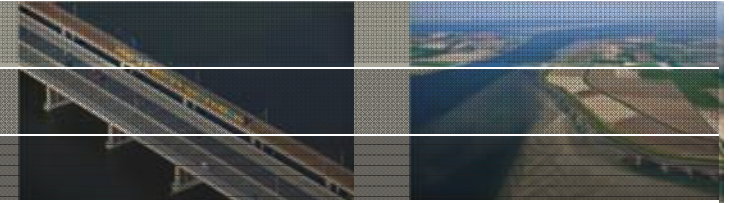
1 billion euro/yr (> 2020); from
existing infrafonds, 0.5 % BNP

Delta Act

“anchoring” Delta
Commissioner, programme
and fund

Deltares

3. Approach and Results - 4



Present – 2015: ongoing implementation



Ongoing programmes under the DP umbrella:
Flood Protection Programme / Weak Links in Coast

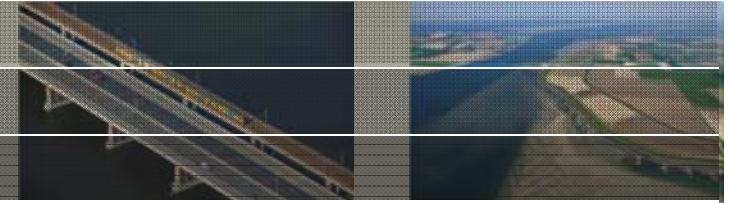
- Organising safety on the basis of dyke inspections

Room for the River / Meuse Projects

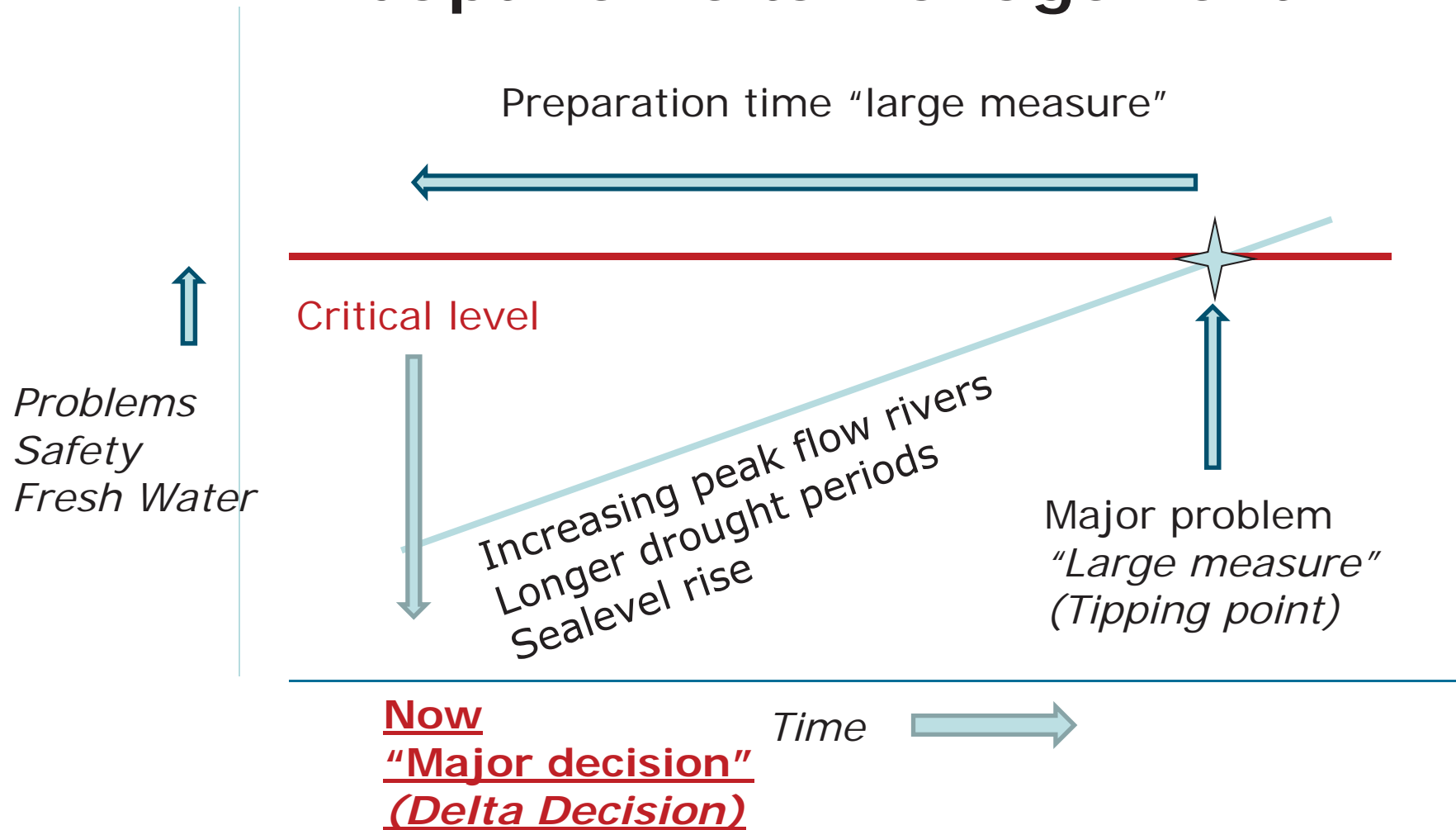
- 90 projects along the river tributaries



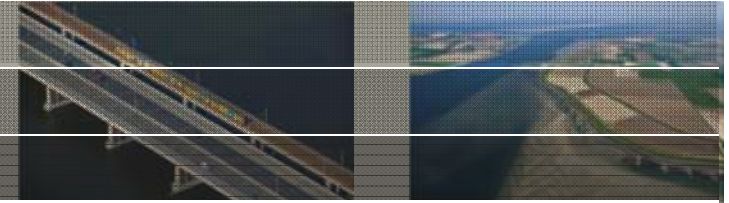
3. Approach and Results - 5



Adaptive Delta Management



3. Approach and Results - 6



Adaptive Delta Management

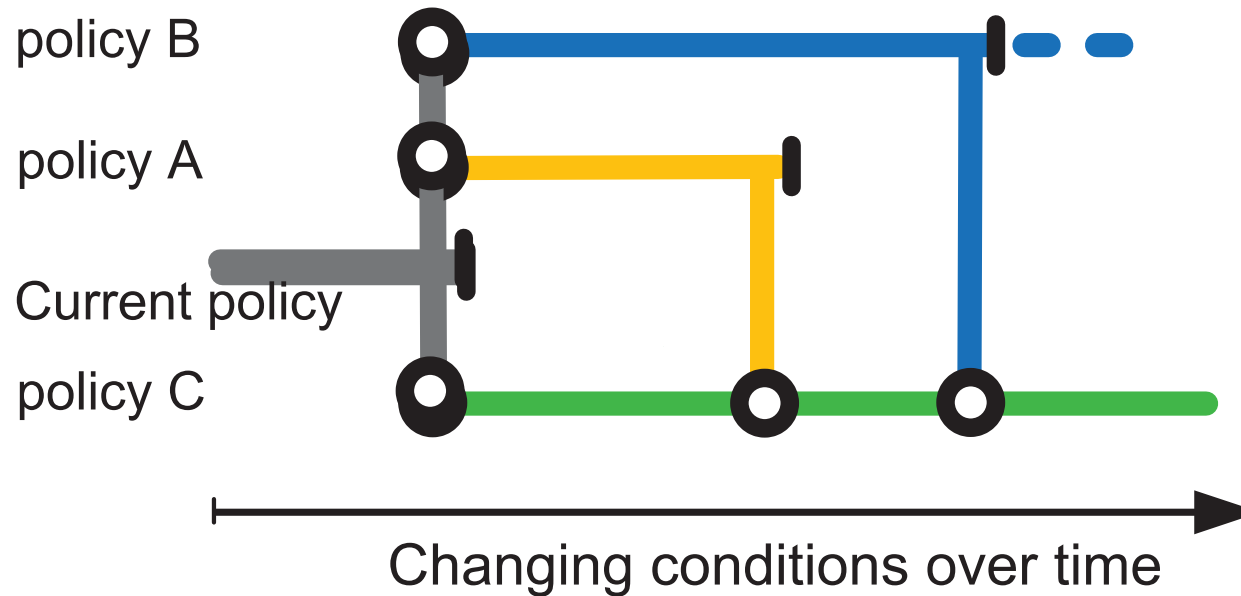
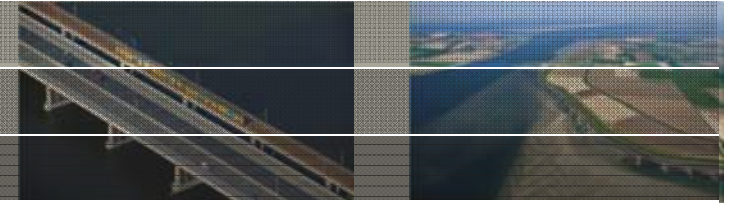
The Delta Programme wants to make transparent and well founded preferential strategies / decisions in 2015:





- anticipating at future developments
- taking into account long term uncertainties
- coordinated with other (short term) agendas! (example: Room for the River)
- keep options open as long as possible

in order to

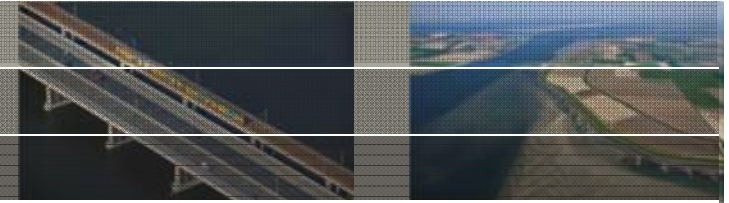
- get sound investments
- maintain flexibility

3. Approach and Results - 7

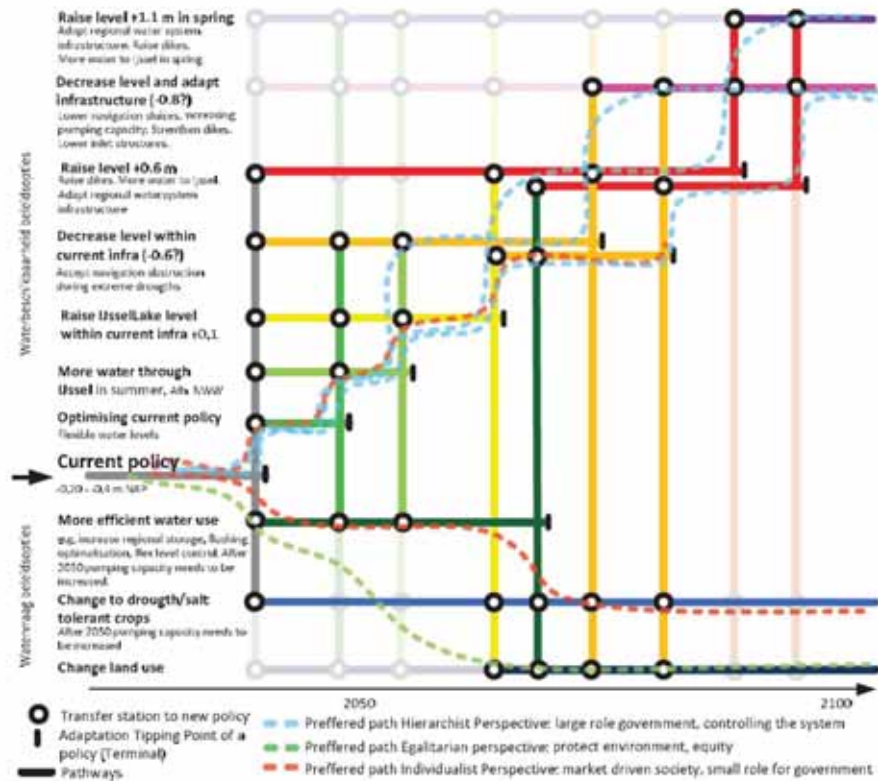


-  Transfer station to new policy
-  Adaptation Tipping Point of a policy (Terminal)
-  Policy effective in all scenarios
-  Policy not effective in scenario X

3. Approach and Results - 8

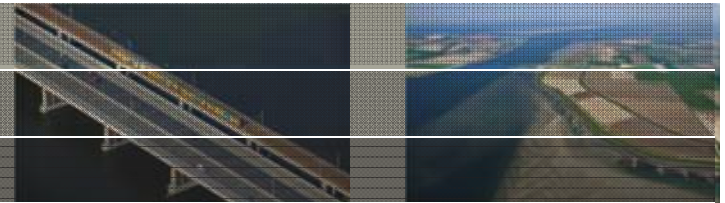


‘Towards flexible strategies/long term policy’

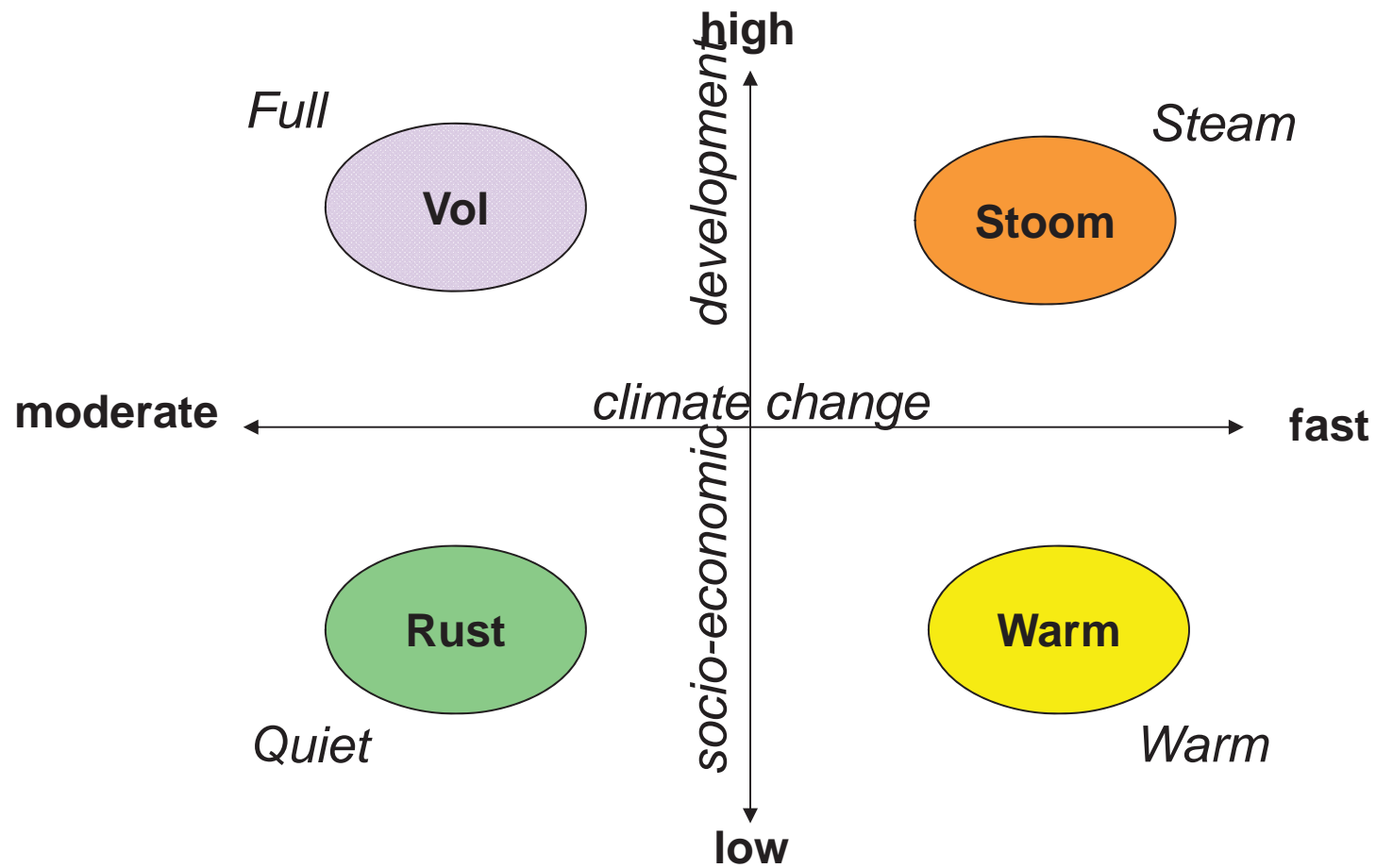


- identify ‘tipping points’
- develop logical path ways
- avoid over-investment, but do now what is necessary, “no regret”, avoid “regret”
- combine with other agendas (regional socio-economic developments)

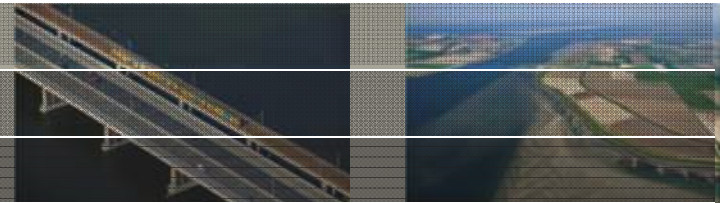
3. Approach and Results - 9



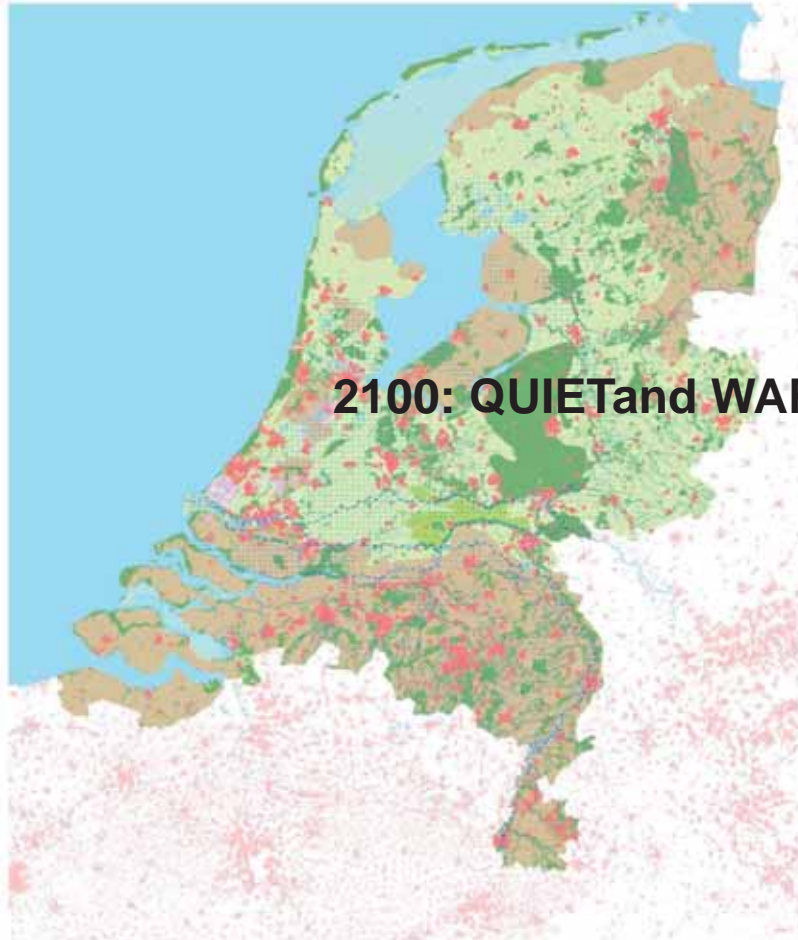
Four Delta Scenarios



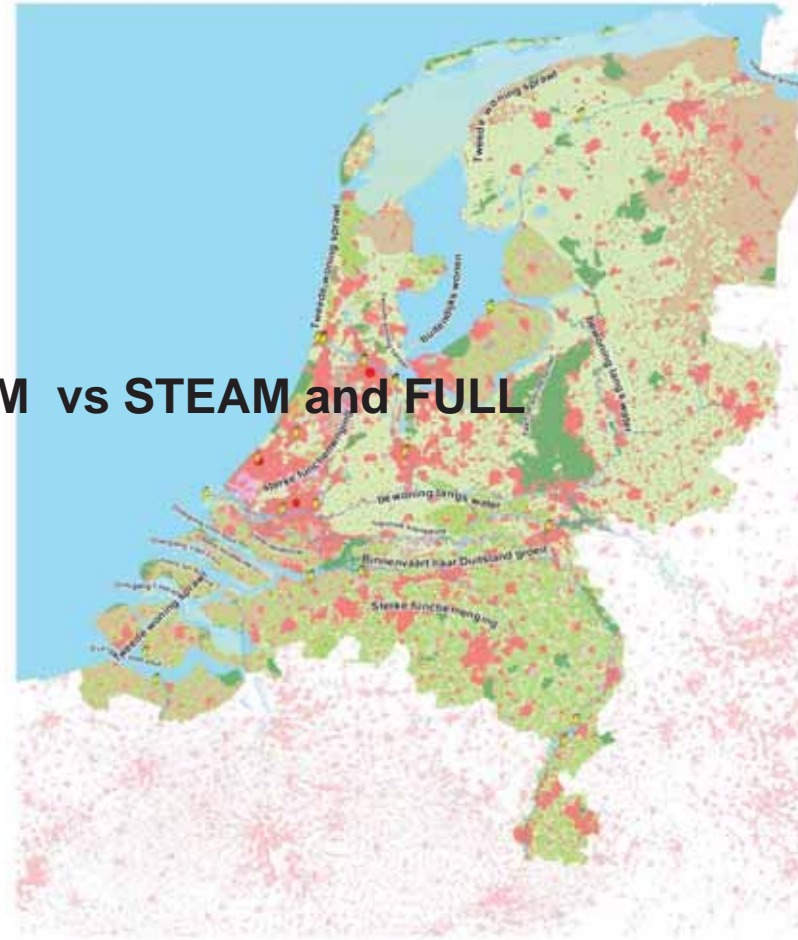
3. Approach and Results - 10



2100: QUIET and WARM vs STEAM and FULL

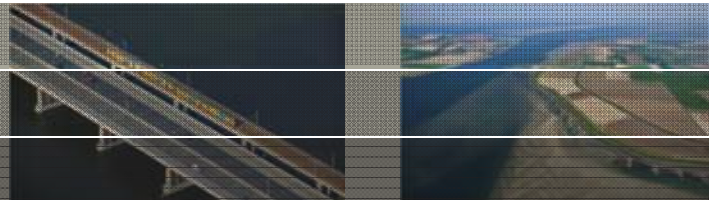


- | | | |
|--|--|----------------------|
| ■ Stedelijk | ■ Glastuinbouwgebied | Vernatting |
| ■ Industrie/kantoren | ■ Akkerland | Vaarwegen |
| | ■ Grasland | Vernatting beekdalen |
| | ■ Tuinbouwgebied | |
| | ■ Dynamische natuur | |

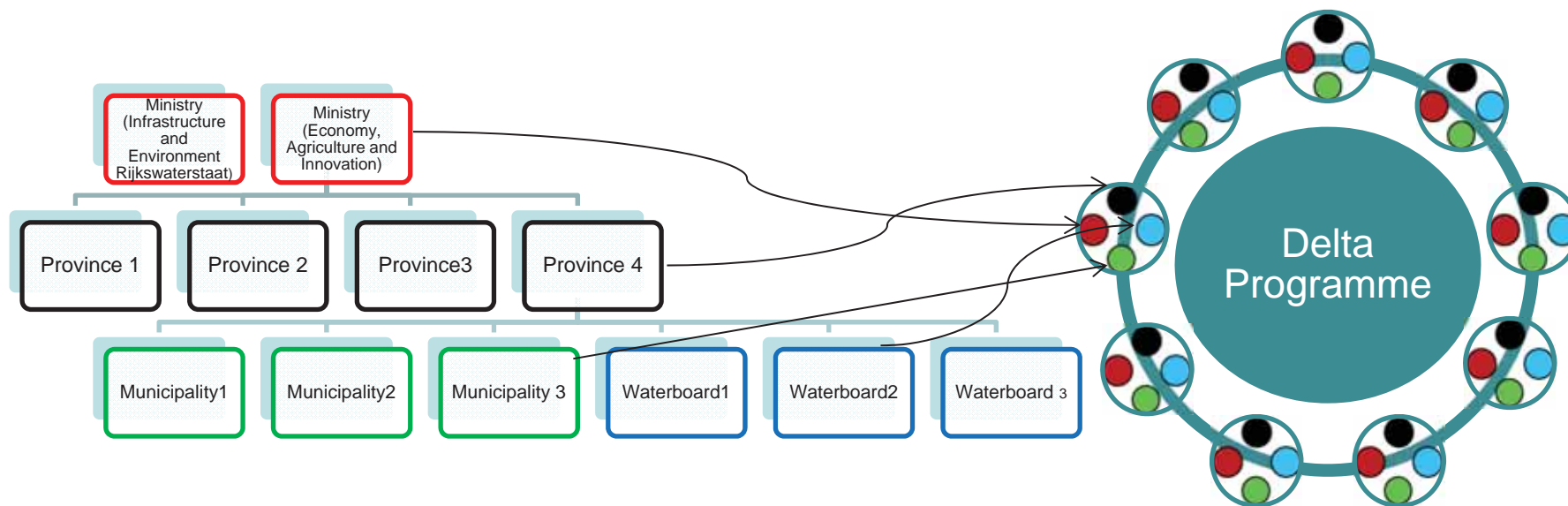


- | | | |
|--|--|------------------|
| ■ Hoog stedelijk | ■ Glastuinbouwgebied | Energiecentrales |
| ■ Stedelijk | ■ Akkerland | Vaarwegen |
| Landelijk wonen | ■ Grasland | |
| 2e woningen sprawl | ■ Tuinbouwgebied | |
| ■ Industrie/kantoren | | |

3. Approach and Results - 11



Multi-level governance steering committees for sub-programmes



4. How could it work for Ria Aveiro?



4. How could it work for Ria Aveiro? - 2



How to create overview?

- What do you want? → Ambitions
- What do you need to do? → Issues and responsibilities
- What can you do? → Influence

4. How could it work for Ria Aveiro? - 3



Dealing with the
outside world

Dealing with
uncertain future

Use the
international spirit
of Portugal

4. How could it work for Ria Aveiro? - 4

Adaptive delta management:

- approaches climate adaptation as an investment problem
- address stakeholder needs in a win-win approach
- supports in prioritization where to start
- provides a story to tell what to do when scenarios change (investments need to be delayed or made earlier)

further more:

- no blue print, but a tailor made approach, fine tuned at governance and physical system
- start global, refine during time

4. How could it work for Ria Aveiro? - 5

Stakeholder analysis Tool - influence and interest matrix



4. How could it work for Ria Aveiro? - 6

Soft solutions

Hybrid hard-soft mix

Hard solutions



*more space, more BwN, no dike
more flexible, cost-effective (?)*



*less space, more BfN, more dike
less flexible, extra investment*

non tidal/ tidal



Wadden Sea
Markermeer/Friese
IJsselmeerkust



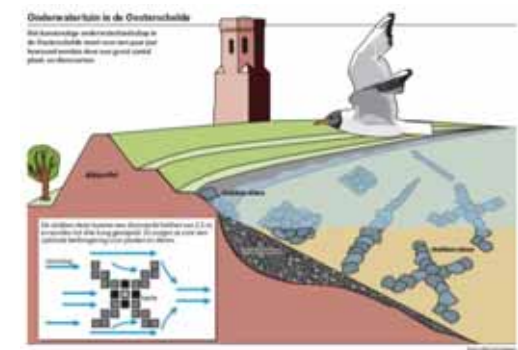
oysterreef-
dike combi



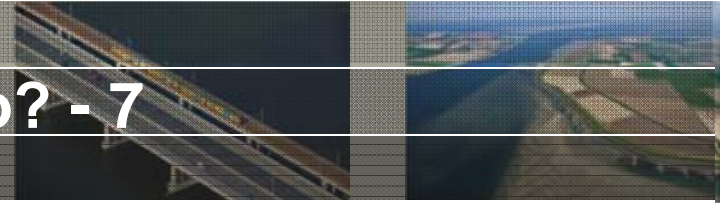
forest-dike combi



Rich 'Levees'
Oosterschelde!



4. How could it work for Ria Aveiro? - 7



Reduce erosion of intertidal areas
in Eastern Scheldt



4. How could it work for Ria Aveiro? - 8



Water Management + Climate Adaptation only through communication with all stakeholders

