



**ROYAL HASKONING**

consultants architecten ingenieurs

Is there a typical approach on ICZM?

- No general recipes / no grant scheme
- Ingredients, bits and pieces of knowledge and experience, guidelines, proven processes
- Every approach or method is to be estimated and considered given a specific context



# What do the Dutch do?

- Integrated coastal zone management contains two entirely different elements:
  1. Aspects of water management (quantity and quality)
  2. Aspects of involving the general public in area based approaches pursuing different goals at the same time



# Different situations, specific contexts





- ❑ Overall ambition: realize a sustainable and **climate change resistant** water management
  
- ❑ Components of the plan:
  - ❑ Flood protection
  - ❑ Sustainable fresh water supply
  - ❑ Cleaner water and natural design



- ❑ Co-operation between government bodies
- ❑ Area based approaches being the standard
- ❑ Pro-actively looking for involvement from any one or any party having interests at stake
  
- ❑ An **integrated** area based approach is meant not just to realize water related issues but is also to solve other issues (economic, social, spatial,..) by applying a development-gearred approach and seizing opportunities.

- ❑ Basic national principles / policies for water management:
  - ❑ Go with the flow of natural processes where possible
  - ❑ Offer resistance where necessary
  - ❑ Seize opportunities to foster prosperity and well being
  
- ❑ Embedding water tasks and measures into other types of tasks and measures (spatial planning, urban development, ...) is considered vital.

# Go with the flow or offer resistance?



Go with  
the flow



Offer  
resistance





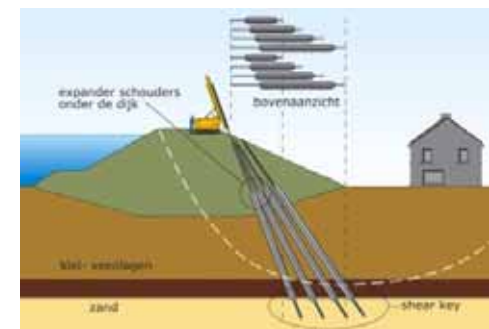
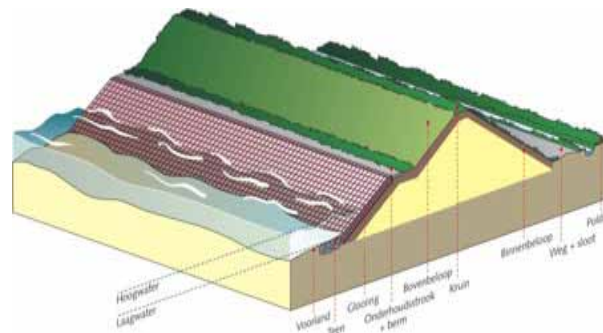
Hydraulic engineering to tackle the issues:

## □ The coast

- The sandy coast: a soft defence where possible using natural processes of sand sedimentation “zandmotor”



- Complementary to that improving the dykes alongside other stretches of the coast



# Testing! Testing?



# Rising peak discharges in rivers



- ❑ The rivers:
  - ❑ Shifting of dykes to give rivers more space “Ruimte voor de rivier”
  - ❑ Dredge complementary channels alongside the river
  - ❑ 100% protection?



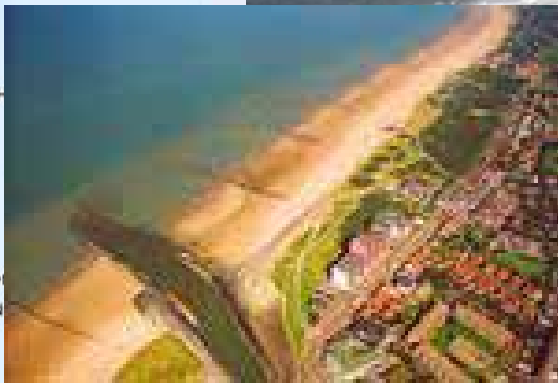
# Massive opposition?

- ❑ Not really, unless other than safety issues are pursued with hydraulic projects i.e. “Ontpoldering Westerschelde”
- ❑ No hydraulic projects are executed without using a kind of area based approach trying to bundle and solve a multitude of issues:
  - ❑ Zwakke schakels:  
‘Weak links’
  - ❑ Ruimte voor de rivier:  
‘Room for the river’
  - ❑ Ontpoldering Westerschelde:  
surrender agricultural land to the sea in order to enlarge a bird sanctuary



# Zwakke schakels

## Prioritaire zwakke schakels



# Raising the water level in the IJsselmeer

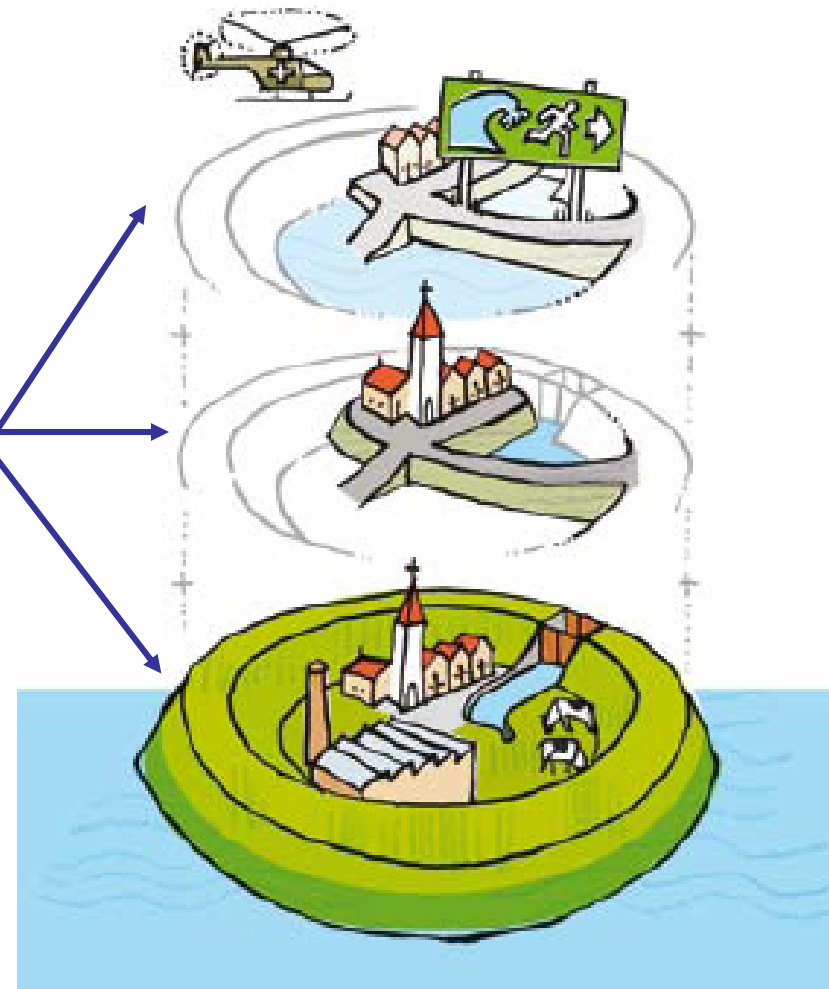


# A large scale ICZM-project



## □ A three-tier approach:

1. Prevent flooding
2. Limit the effects of potential flooding
3. Improve the organisational preparedness (disaster mitigation)



# Risk management: some activities

- Prevent flooding:
  - Dykes etcetera
- Limit the effects of flooding
  - Spatial planning!
  - Compartmentalize
  - Water resistant building and allocation of functions / land use
  - Early warning systems
- Organizational preparedness (disaster mitigation)
  - Plans / strategies, equipment, staff
- EU-directive on Risk management



- ❑ De ‘brede blik’: water managers are taught to be open minded and to keep an eye on other interests then those related to water (more generalists)
- ❑ ‘Look for trouble’: be aware of economic, social, spatial and/or other issues in a region that can be related to water issues
- ❑ Involve all kinds of parties and persons in looking to solve issues. The creativity generated will surprise you.
- ❑ Beware for the expert approach!



- ❑ Draft an agenda for a project in cooperation with stakeholders (= today)
- ❑ Bind stakeholders to the project: commitment pays off in the end!
- ❑ Try to find solutions for a multitude of issues at the same time. More complexity means:
  - ❑ More room for solutions
  - ❑ More possibilities for financing solutions
- ❑ Beware not to try solve issues in an area based approach that don't originate within the area itself

# Alone, unique, experimental?



- ❑ Integrated area based approaches were started in the early nineties in the Netherlands (11 spatial – environmental experiments)
- ❑ Nowadays using area based approaches is the standard, is mainstream in the Netherlands (as well as in other countries):
  - ❑ At an integrated level (agricultural, ecological, urban, and water related issues combined for example)
  - ❑ At a sectoral level (traffic related issues for example)

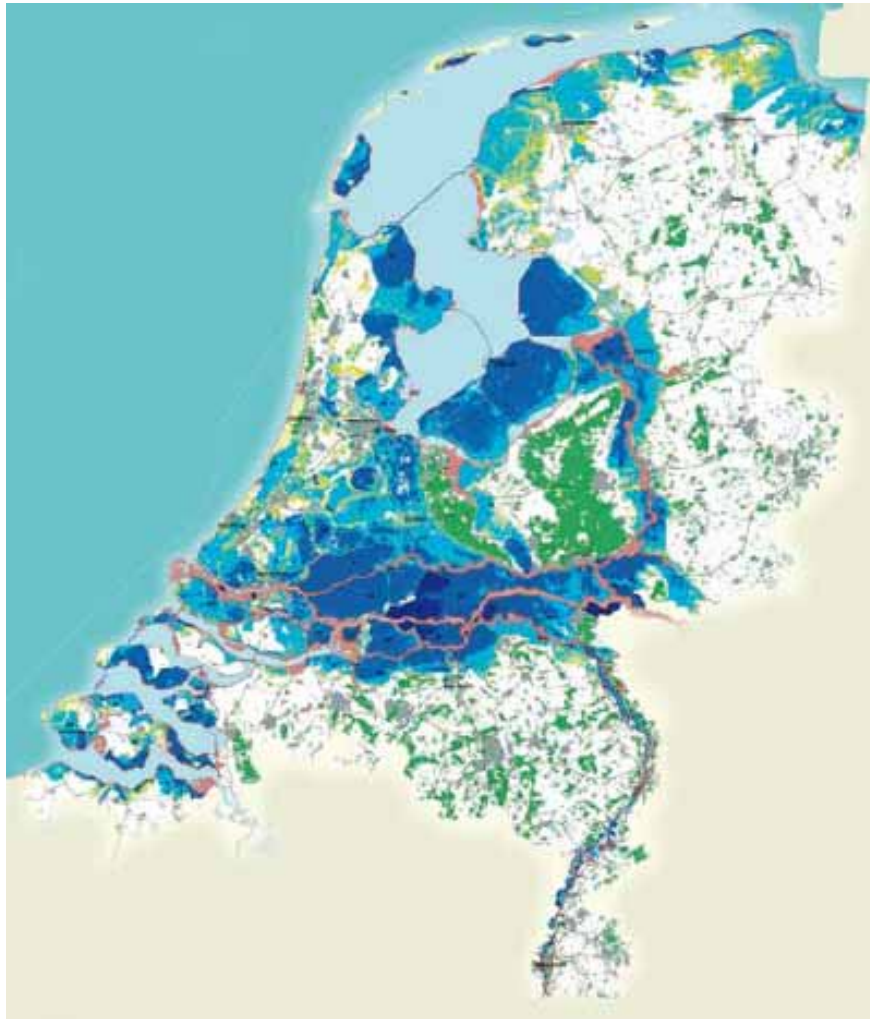
Why: because they have proven to be successful!

# Risk management projects in the Netherlands



-  Verbetering aan dijk, duin, dam of landbouw
-  Dijkstuk
-  Project  
Strakke schakels langs de kust
-  Project  
Ruimte voor de Rivier
-  Project  
Maaswerken
-  Project  
Zeeveringen Zeeland








# National risk map



## primaire stabilisatieregion

-  categorie a
-  categorie b
-  categorie c
-  gebied hoge gronden

## maximale waterdiepte

-  0,2 m - vloedkansenopploei
-  0,2 - 0,5 m
-  0,5 - 0,8 m laag overlooptkansenopploei
-  0,8 m - 2 m eenzijdige overlooptkansenopploei
-  2 m - 5 m eerdere overlooptkansenopploei
-  > 5 m
-  buitenrijke gebied

# Different situations or sharp contrast? (skip?)

