



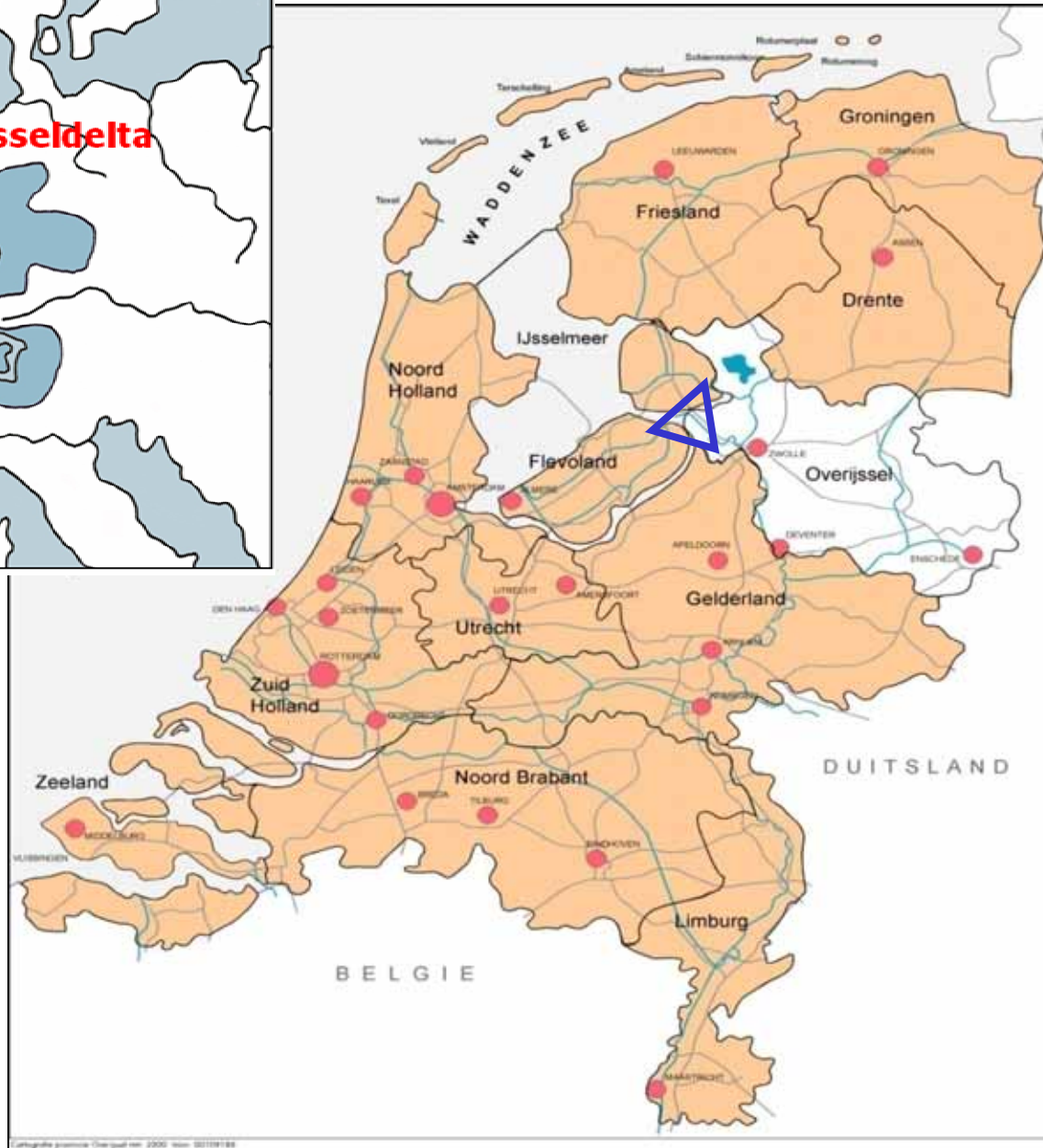
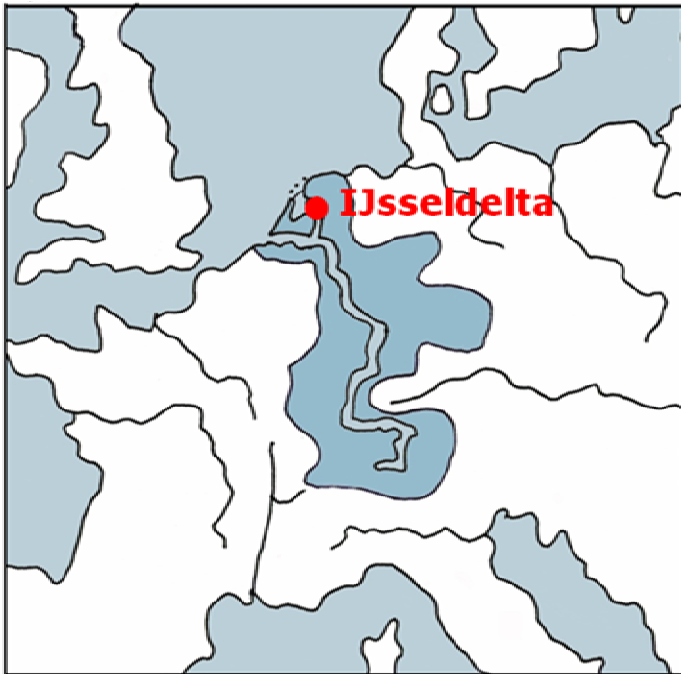
# Climate adaptation in the IJsseldelta

5th World Water Forum, 16-22 March 2009

Arjan Otten

Province of Overijssel





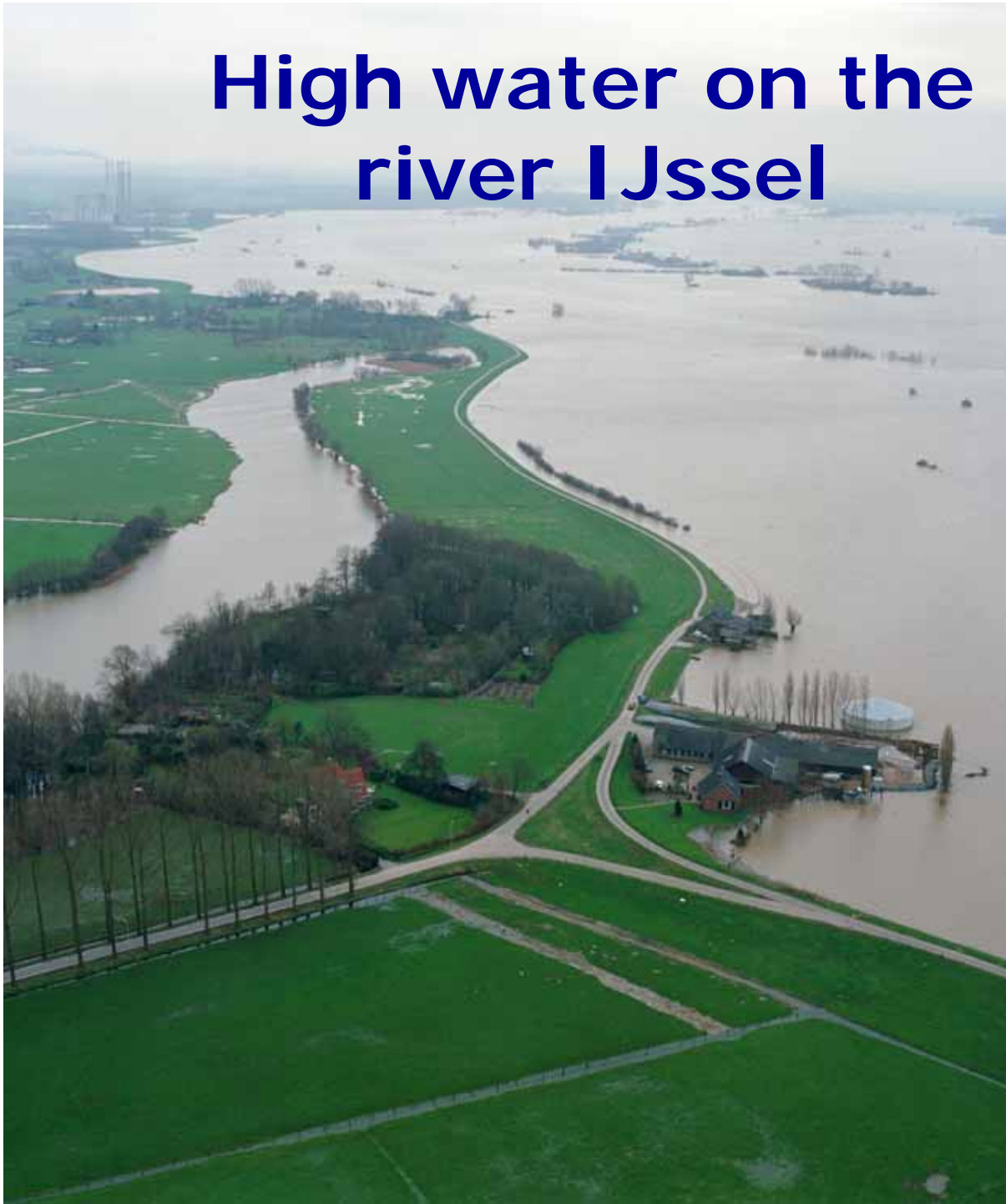
▽ IJsseldelta

# The Netherlands without dikes



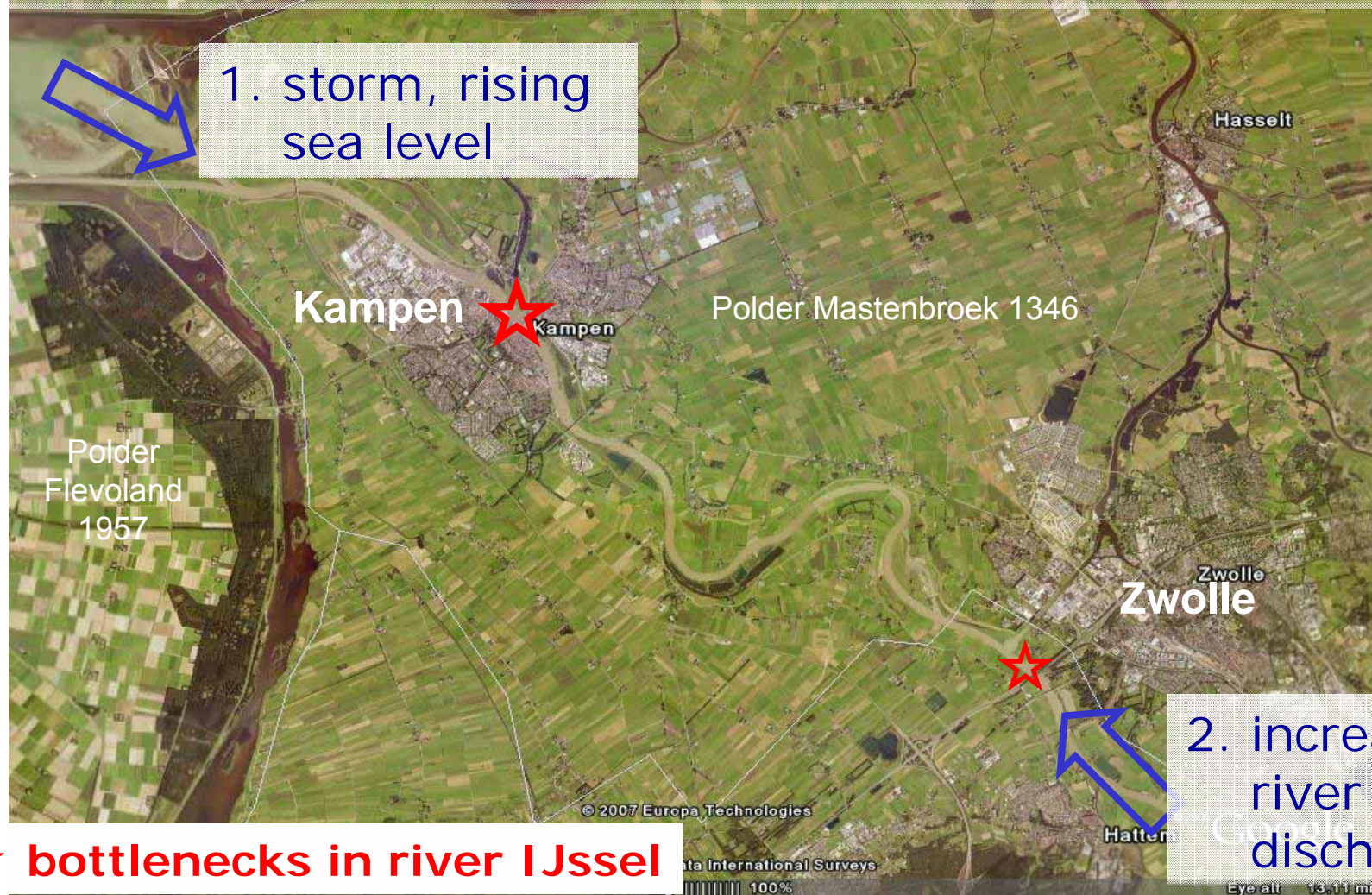


# High water on the river IJssel





# Climate change in the IJsseldelta

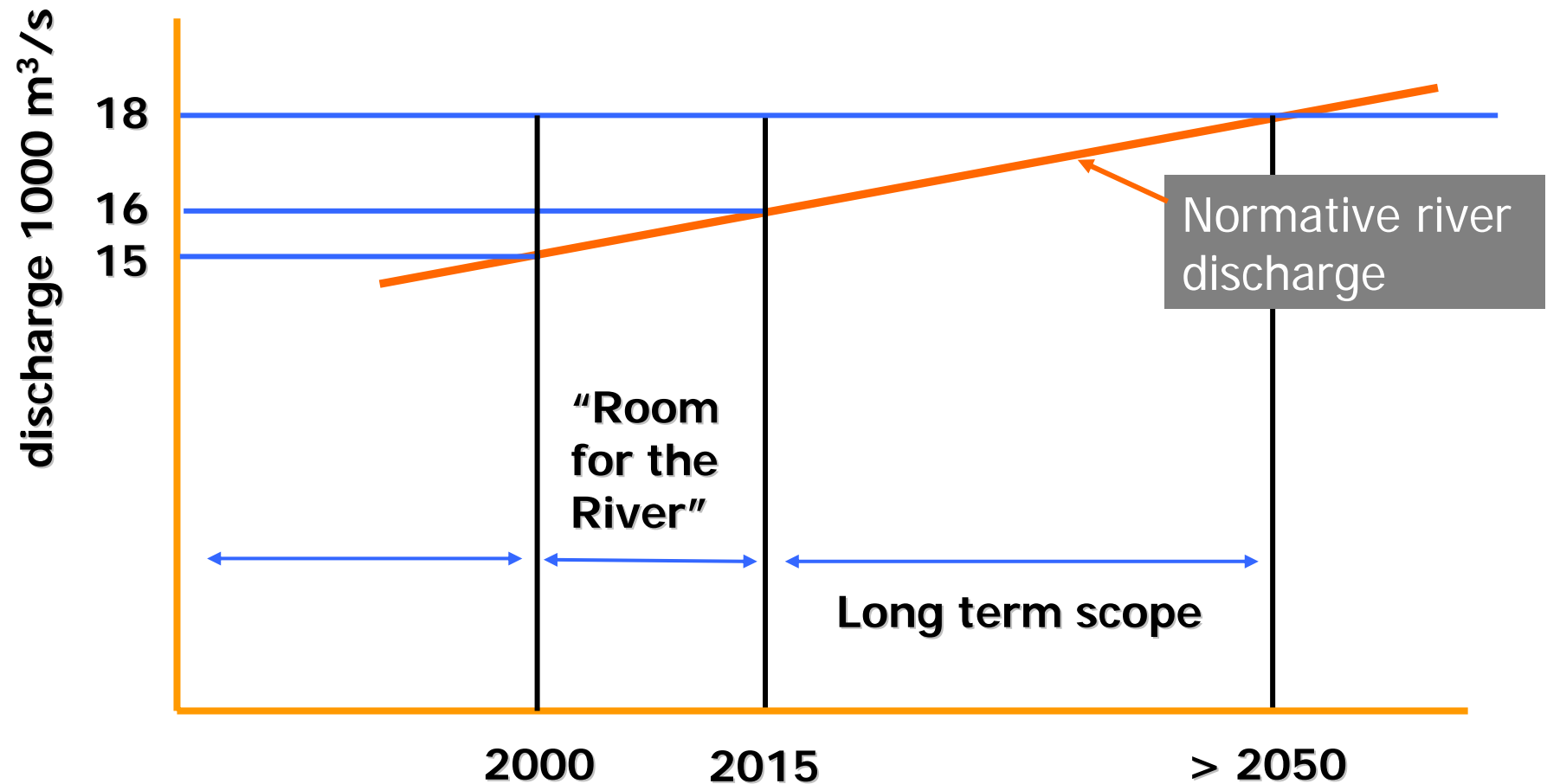


★ **bottlenecks in river IJssel**

2. increasing  
river  
discharges

project - **ijsseldelta** -

# National programme 'Room for the River'



"Water management in the 21th century "



# Room for the river measures in the IJsseldelta

## **1. enlargement of summer bed:**

- national initiative
- 'easy and cheap'
- short term

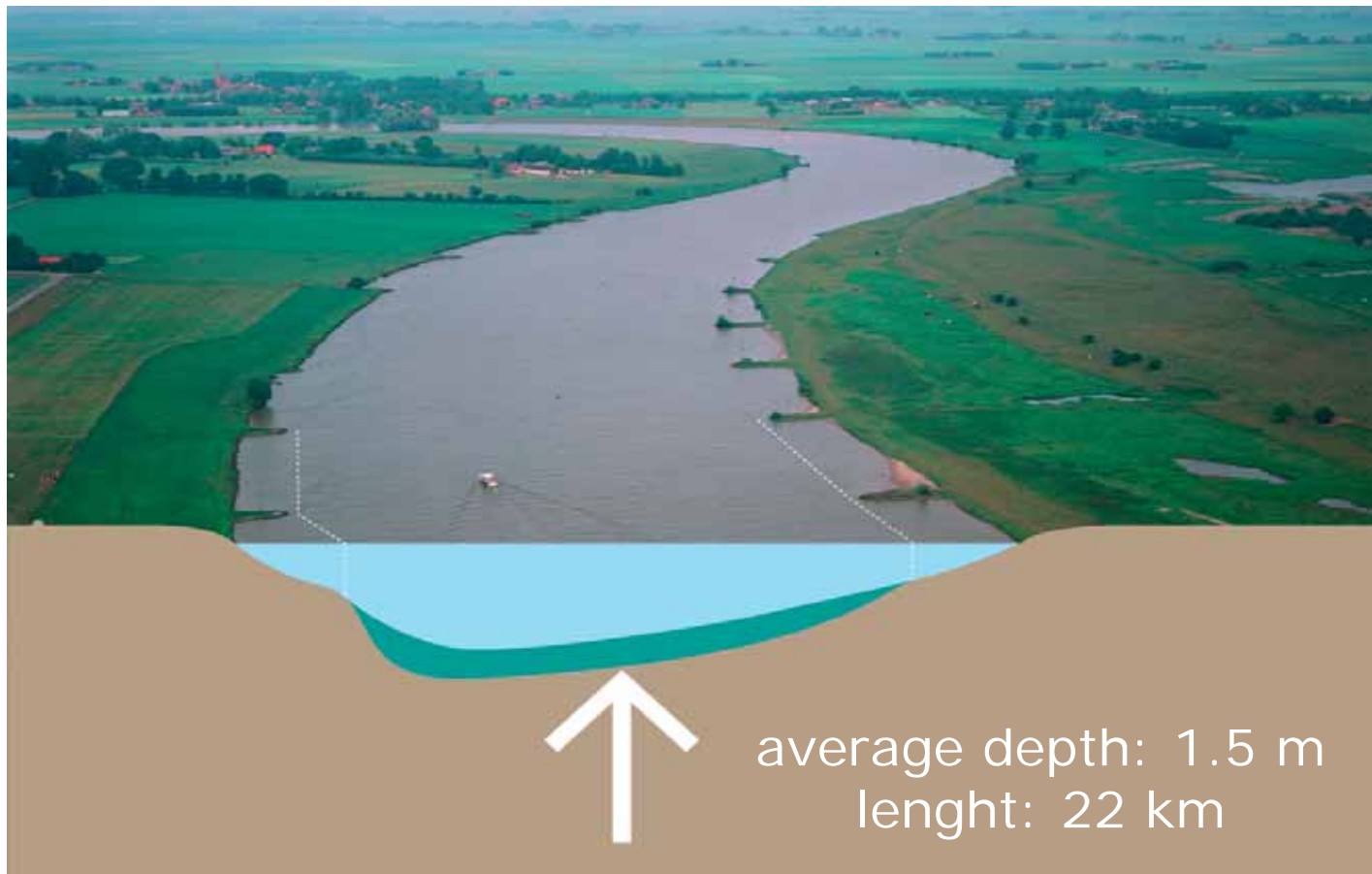
## **2. dike displacement Westenholte:**

- regional initiative (coproduction)
- combined with nature development and a country estate

## **3. river bypass:**

- regional initiative (coproduction)
- complex and more expensive
- sustainable solution

# Enlargement of the summer bed (national initiative)



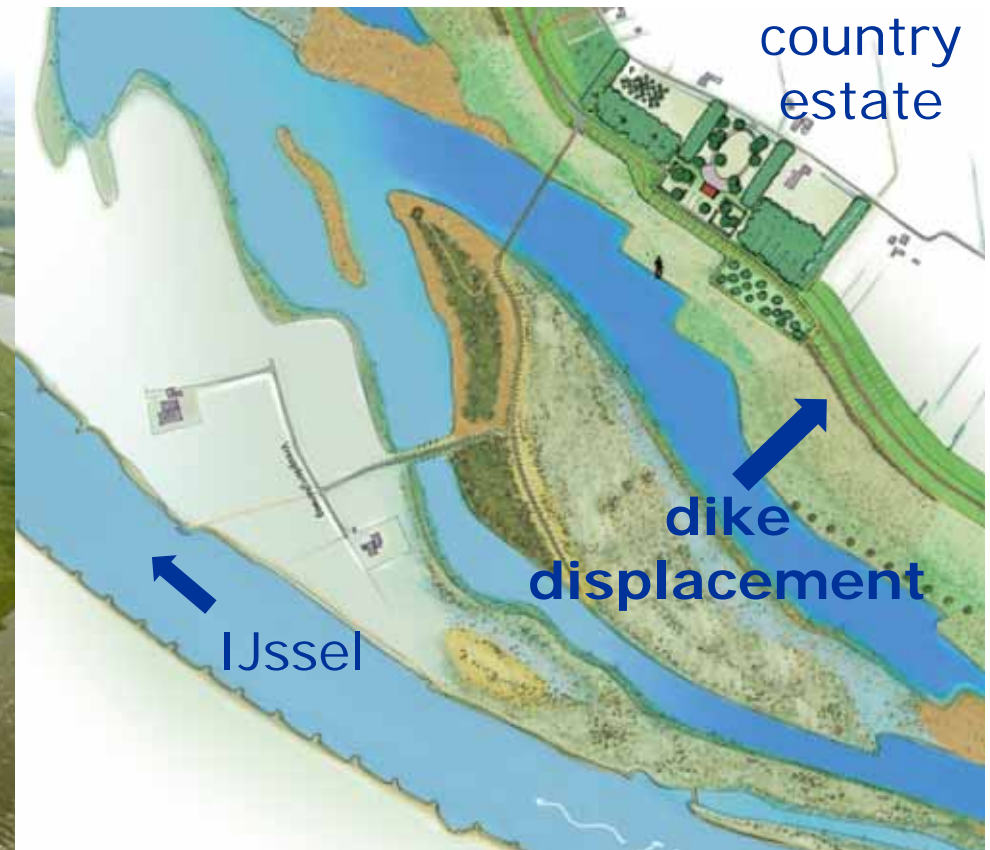


# Regional initiatives





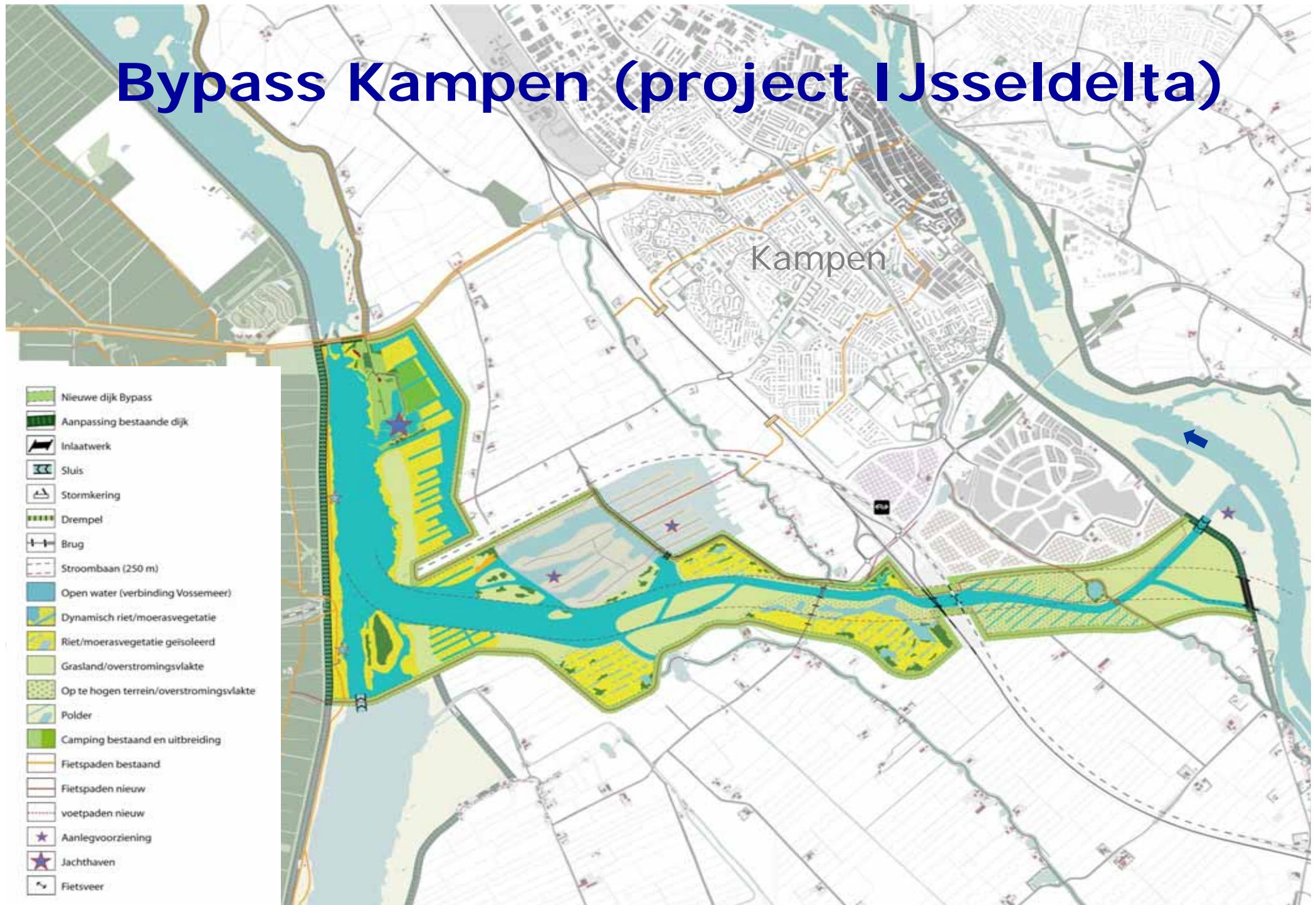
# Dike displacement Westenholte



Combined with nature development  
and a new country estate

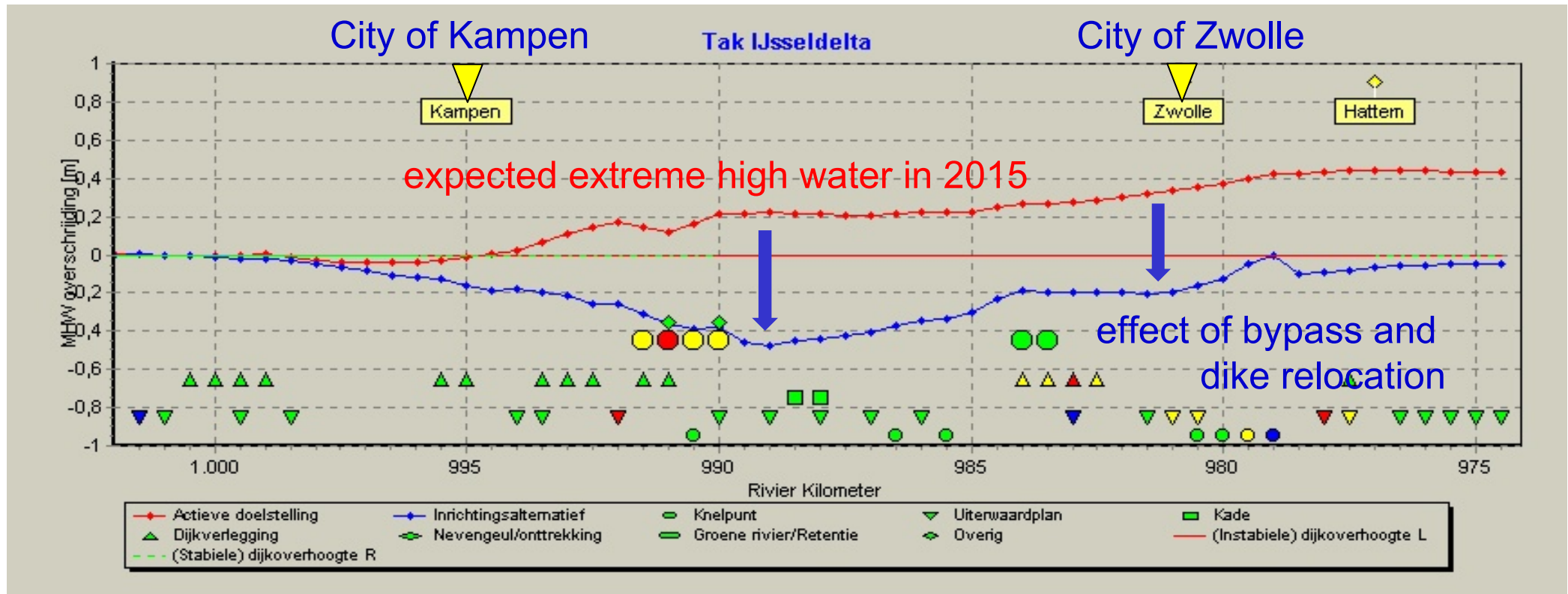


# Bypass Kampen (project IJsseldelta)





# High water in the IJsseldelta and the effect of 'Room for the River'



An aerial photograph showing a large body of water, likely a delta or estuary, with a central island and surrounding land. The water is a deep blue-green color, and the land is a mix of green and brown. The sky is bright blue with some clouds. The text "A closer look at Project IJsseldelta" is overlaid in white.

# A closer look at Project IJsseldelta

**How to get to a supported, sustainable  
development plan?**



# Challenge of Project IJsseldelta

- 6 spatial issues: flood protection, nature development, agriculture, housing, railway, highways
- 11 governmental organizations
- 11 non-governmental organizations
- many individual stakeholders
- very short period of time (deadline railway)
- limited budget



# The Overijssel approach

1. combine and integrate the spatial challenges as much as possible
2. joint cooperation with the stakeholders
3. province as director of the planning process
4. intense and direct public participation (interactive, bottom-up)
5. goal: agreement (plan + implementation!)
6. based upon a view on sustainability and climate adaptability.

# Process Project IJsseldelta

- **2005-2007: interactive, informal phase**
  - December 2005: agreement adaptation railway line
  - June 2006: Masterplan
  - January 2007: gentlemen's agreement
- **2007-2011: formal phase**
  - review of the strategic regional land-use plans (2007-2008)
  - purchase of land and real estate (2007-...)
  - financial agreement, consequences of advice Deltacommittee, etc.  
→ go/no go decision (beginning 2009)
  - review of local land-use plan and dike relocation plan (2009)
  - licenses, permits, blueprints (2010-2011)
- **2011-2030: implementation**
  - 2011: start construction levees, dams, storm-surge barrier, sluices
  - 2013: railway operational
  - 2015: bypass operational
  - 2013-2030: housing development

# 1. Combination and integration of the spatial challenges

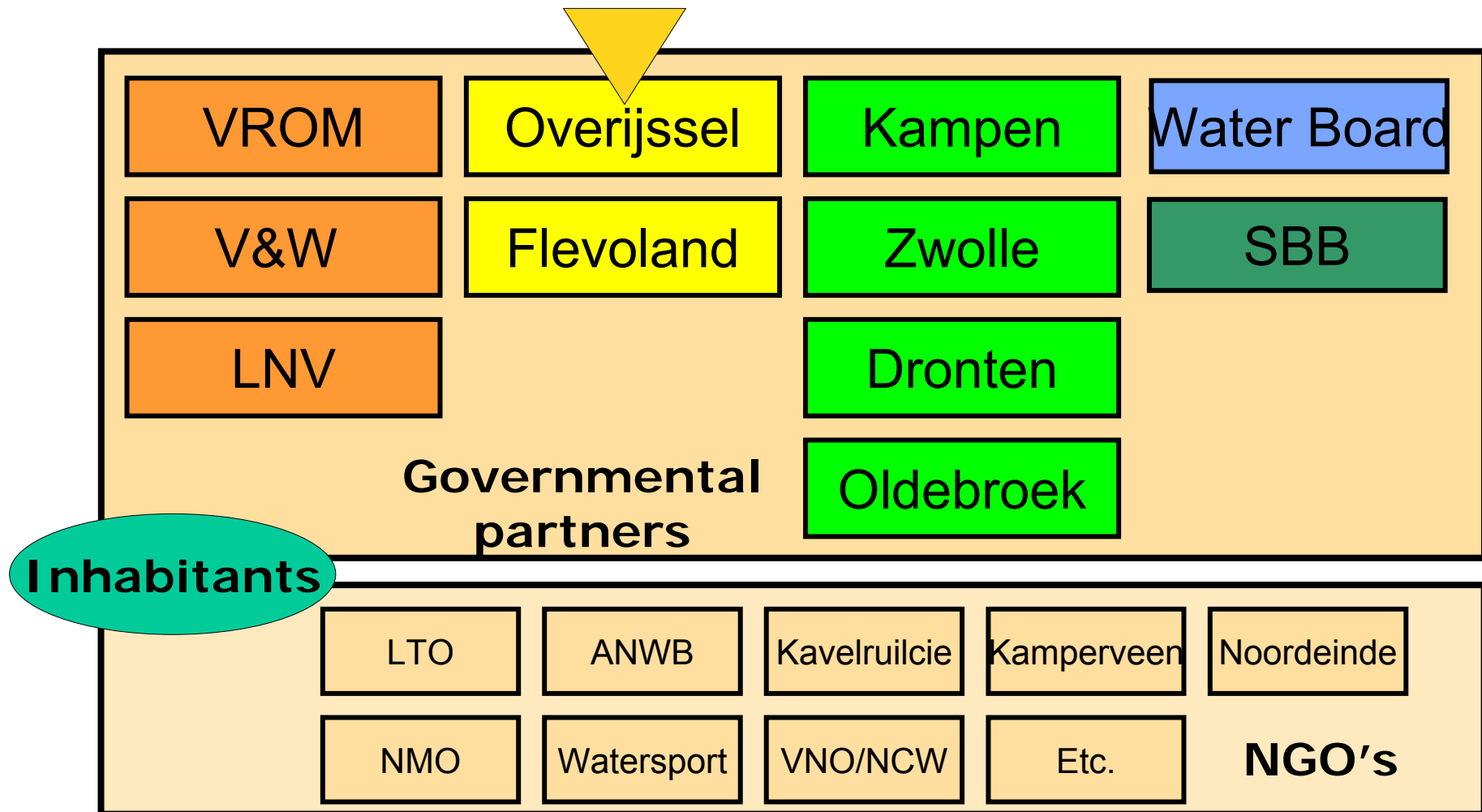


## Spatial strategy:

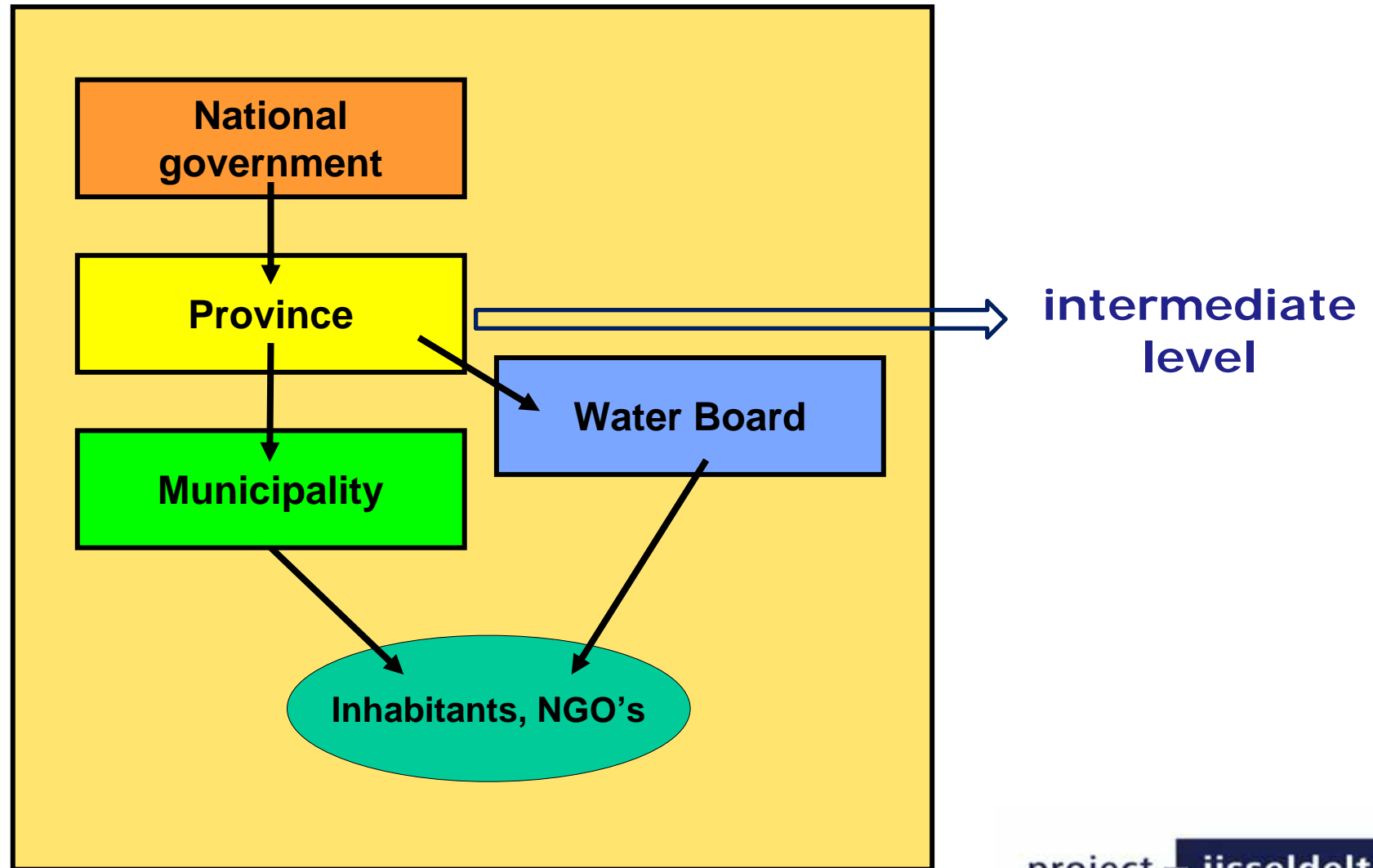
- combine and integrate the major spatial developments (including a river bypass) in the southwest
- prevent large scale developments and preserve the resilience to adapt to climate change in the northeast of the delta (green area on the map)

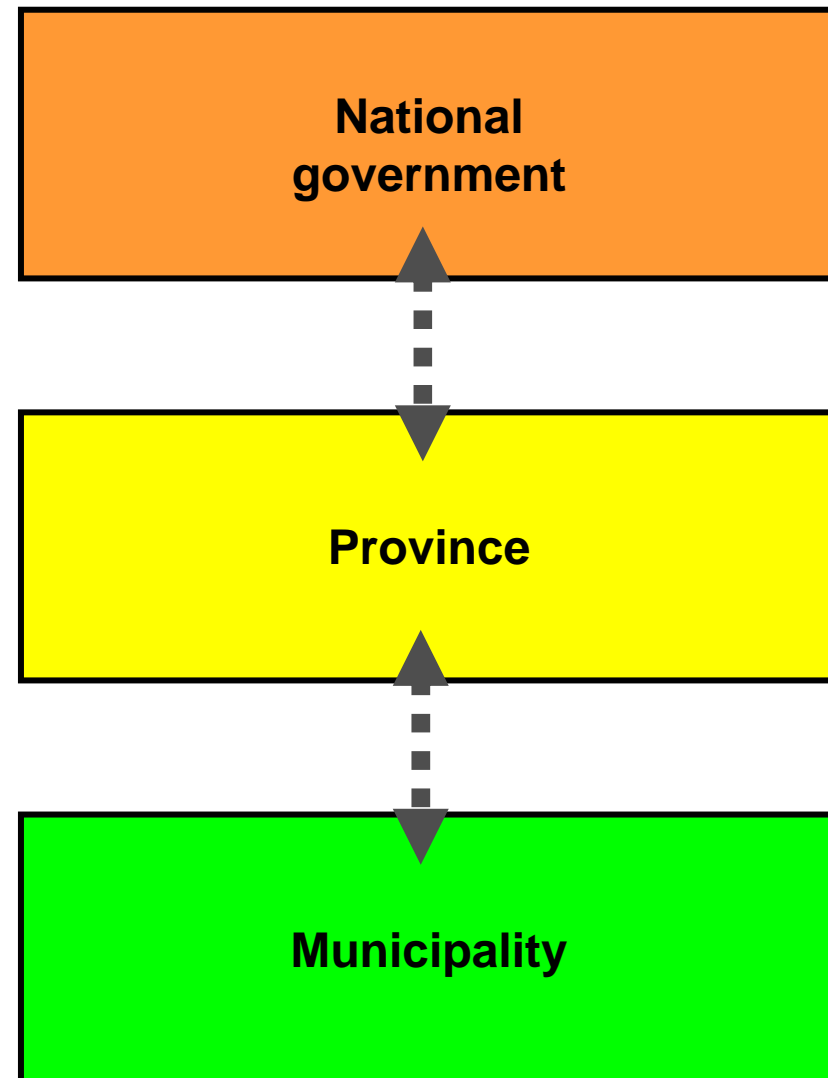


## 2.+ 3. Joint cooperation with the province as a network director



# Traditional planning hierarchy



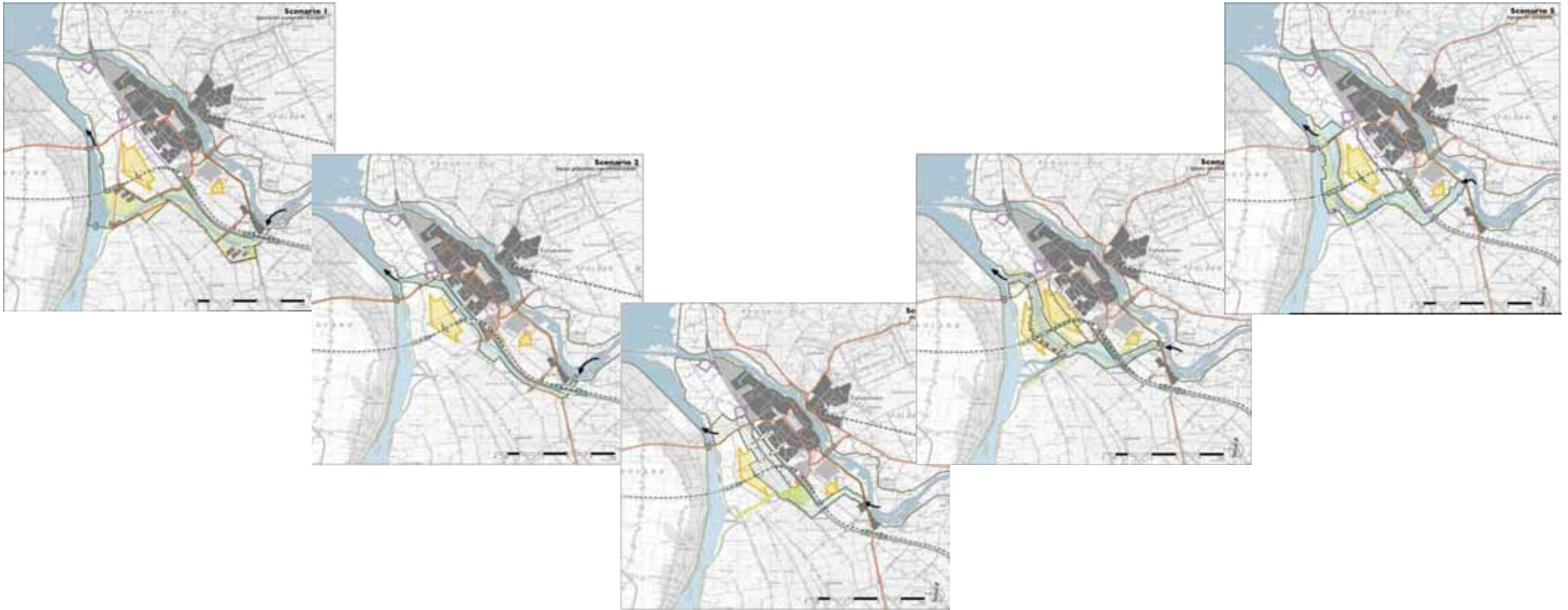




## 4. Open, direct and intense public participation



# Beginning 2005: 5 initial scenarios





# A short but turbulent period of opposition and resistance...

*Bypass IJssel bij Kampen heeft ingrijpende gevolgen voor dorp*

## Noordeinde overvallen door miljoenenproject

### Medialeger overspoelt dorpje Noordeinde

door ROEL KLEINE  
OLDEBROEK

Het Veluwe dorpje Noordeinde in de gemeente Oldebroek is gisteren niet overspoeld door het rivierwater van de IJssel, maar wel overvallen door een medialeger.

TV-ploegen van de verschillende omroepen en verslaggevers van kranten waren naar Noordeinde afgereisd om de perikelen rond de bypass-operatie te verslaan. Zoals door deze krant gemeld was de provincie Overijssel het

dorpje vergeten te informeren over de voor Noordeinde desastreuze gevolgen van het IJsseldelta-project. In vrijwel alle scenario's wordt praktisch het hele dorp van de kaart geveegd. Sailant detail is overigens dat de Overijsselse gedeputeerde Rietkerk oud-inwoner is van de gemeente Oldebroek.

We zijn overvallen door alle publiciteit', meldt de gemeente Oldebroek. SBS 6, RTL 4, Netwerk, De Volkskrant, RTV Gelderland en RTV Oost zijn in Noordeinde geweest om er met de verontwaardigde inwoners te praten.

project - ijsse delta -

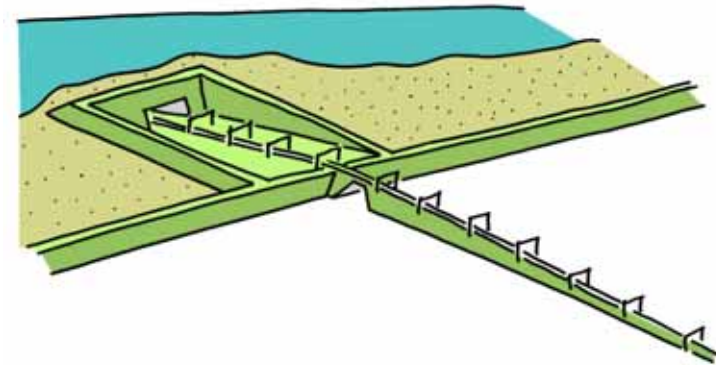




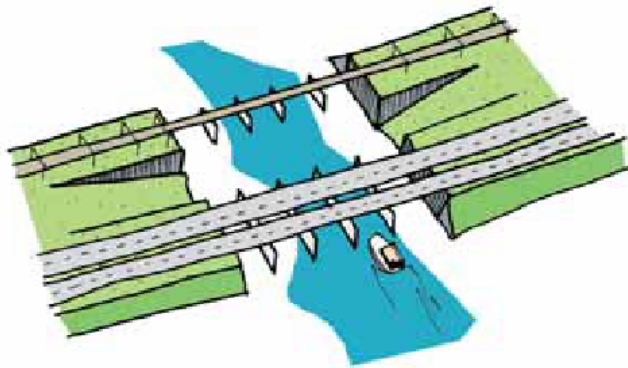


**Spring 2005: birth of the 6th scenario,  
developed by the public !** project - **ijsseldelta** -

## 5. End of 2005: agreement upon adaptation and financing (€ 30 million) of infrastructure



1. adaptation of tunnel railway



2. crossover of railway and motorway with bypass



# Masterplan and gentlemen's agreement (2006/2007)





# Review of the Regional plans (2008)

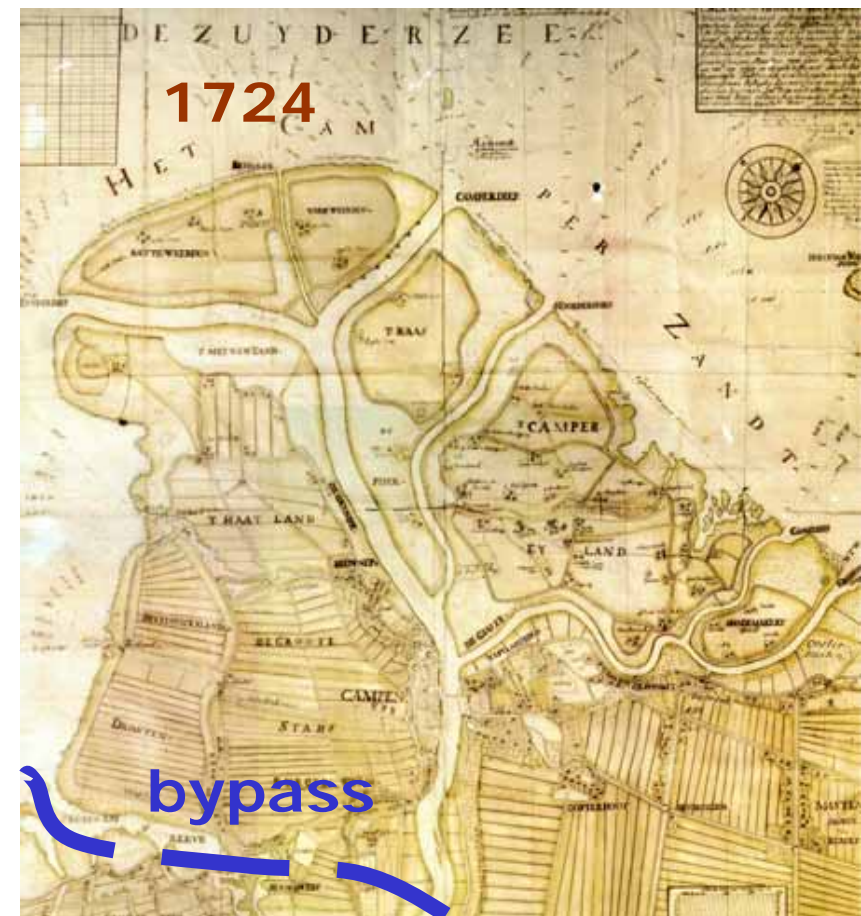
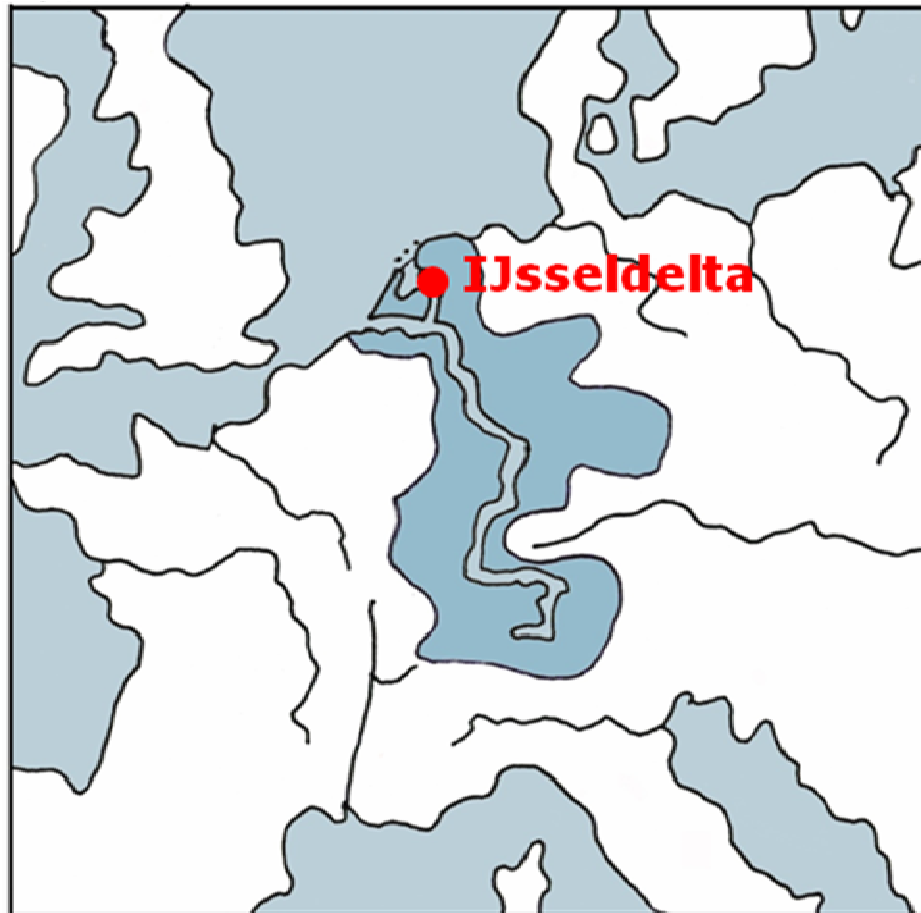


**Masterplan 2006**

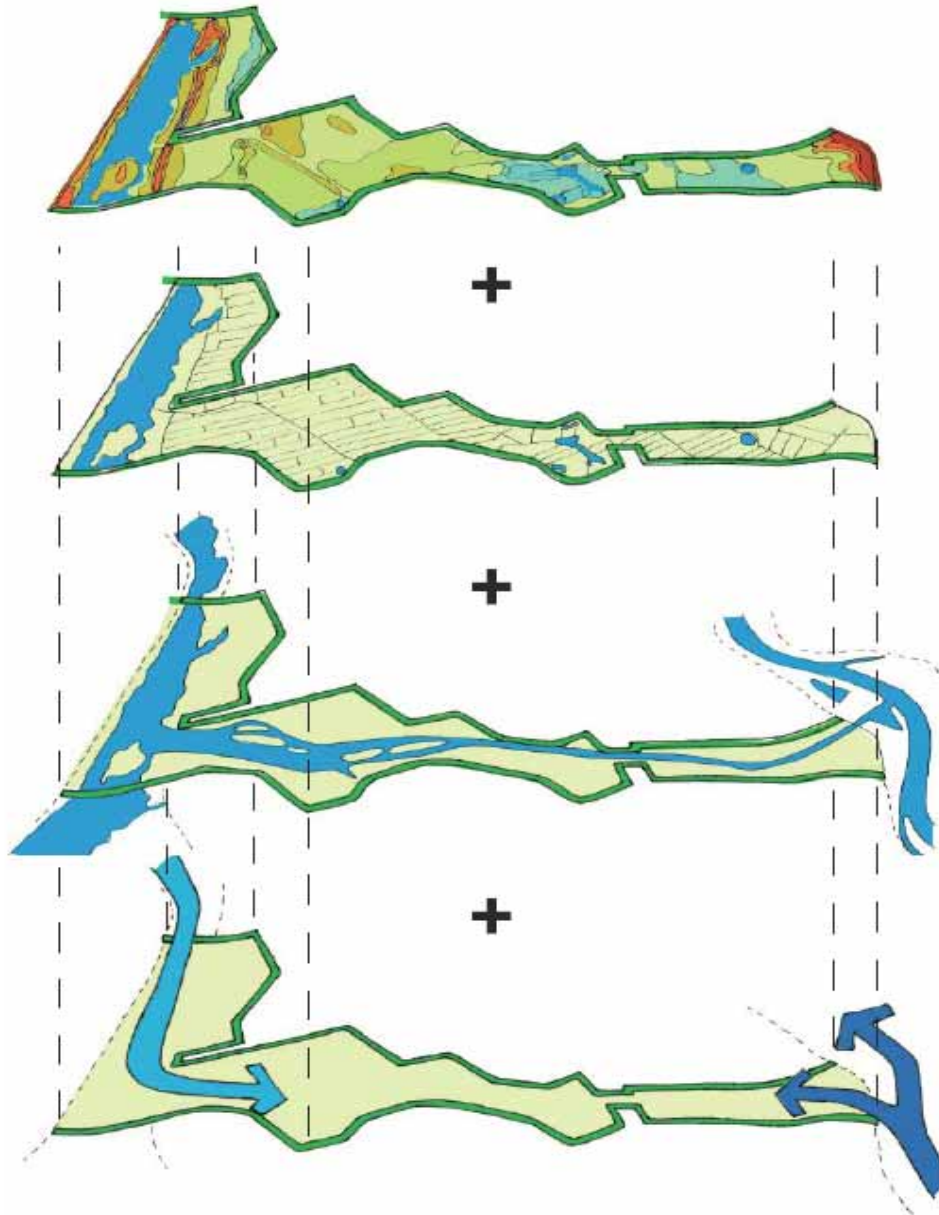


**Regional plan 2008**

## 6. Based upon a view on sustainability and climate adaptability



# Sustainable principles for bypass design



1. soil characteristics

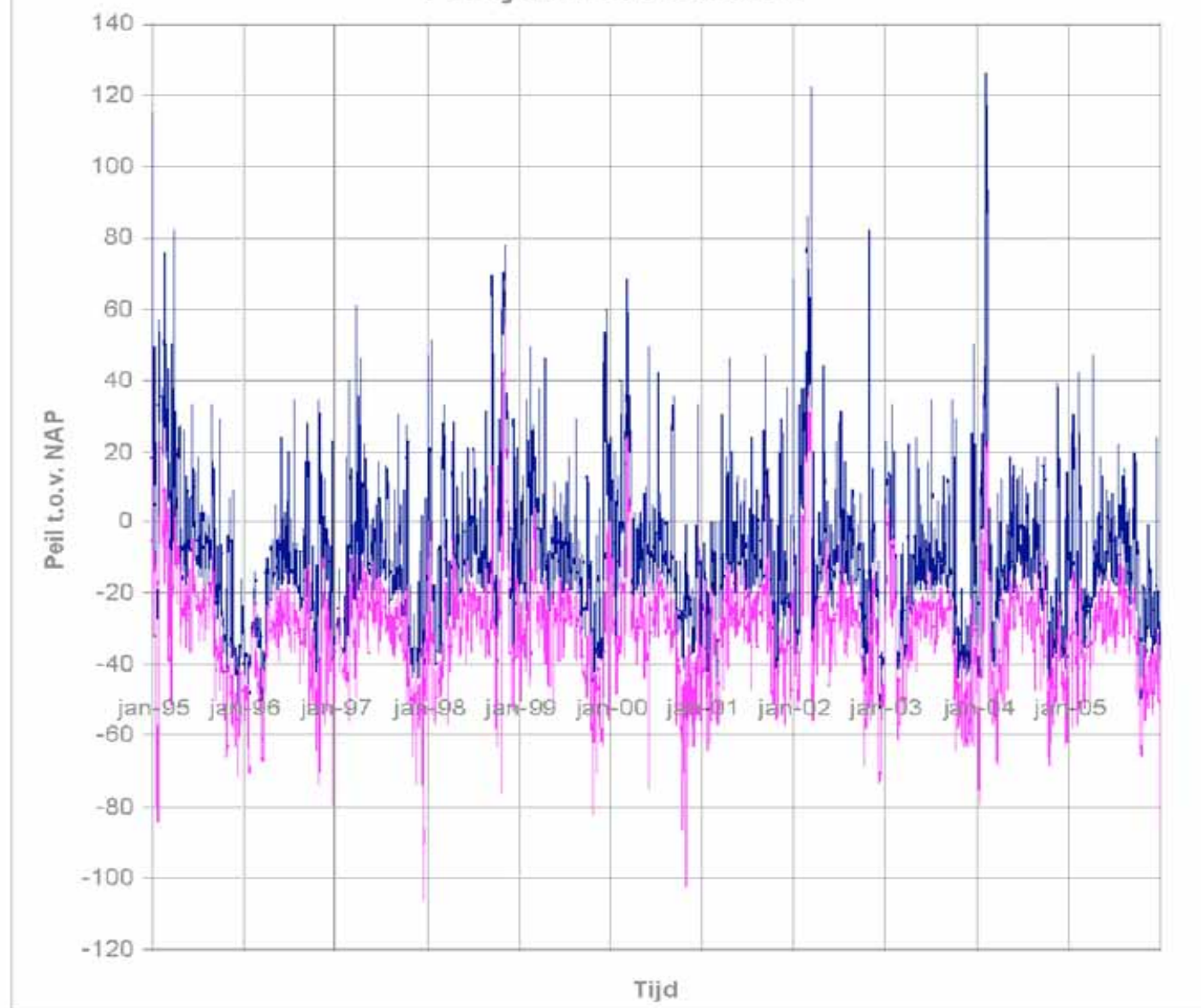
2. landscape structures

3. connection IJssel – IJsselmeer

4. space for water



# Fluctuations of water level in IJsselmeer



# Water dynamics in the bypass



current water level (- 70 cm)



level Lake IJsselmeer (- 20 cm)



10x a year (+ 20 cm)



3x a year (+ 40 cm)



1x a year (+ 60 cm)



1x in 2 years (+ 80 cm)

# Water as a motor for nature development

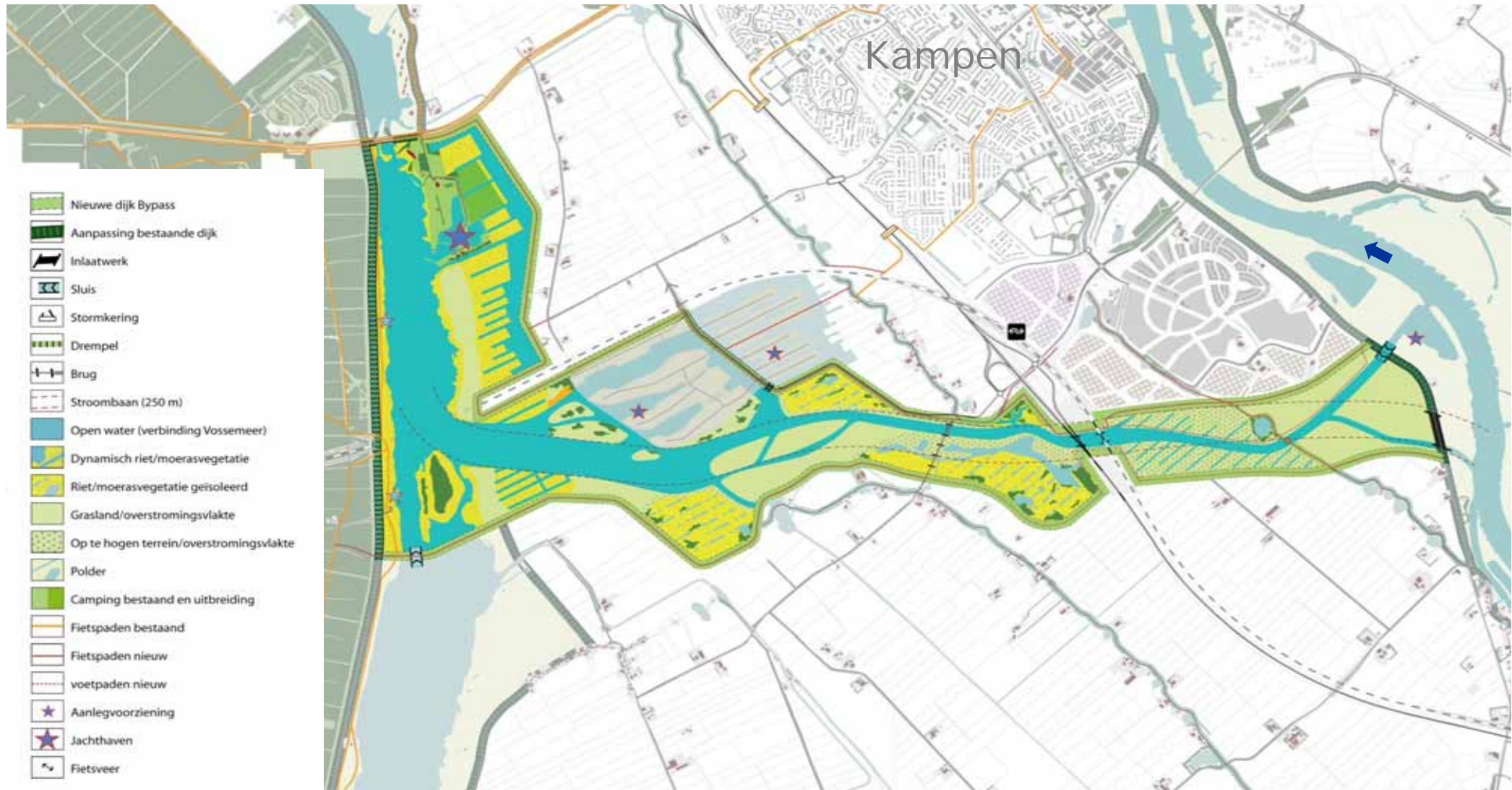


- 350 ha. nature development (partly Natura 2000)
- chances for important/rare ecosystems (water reed, marshes)

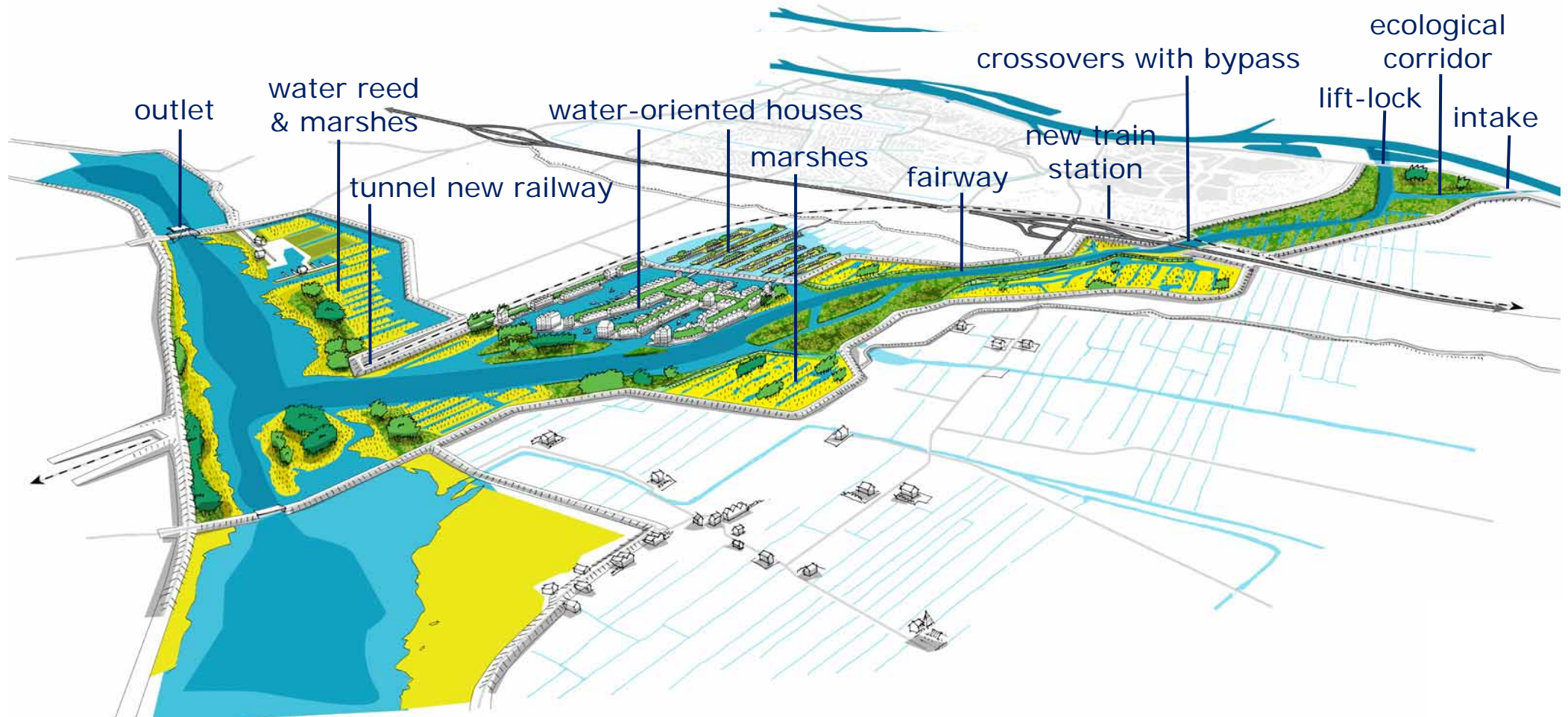




# Impression preferred alternative bypass (based upon the most environmentally friendly alternative, 2008)



# Bird's eye perspective of preferred alternative (2008)



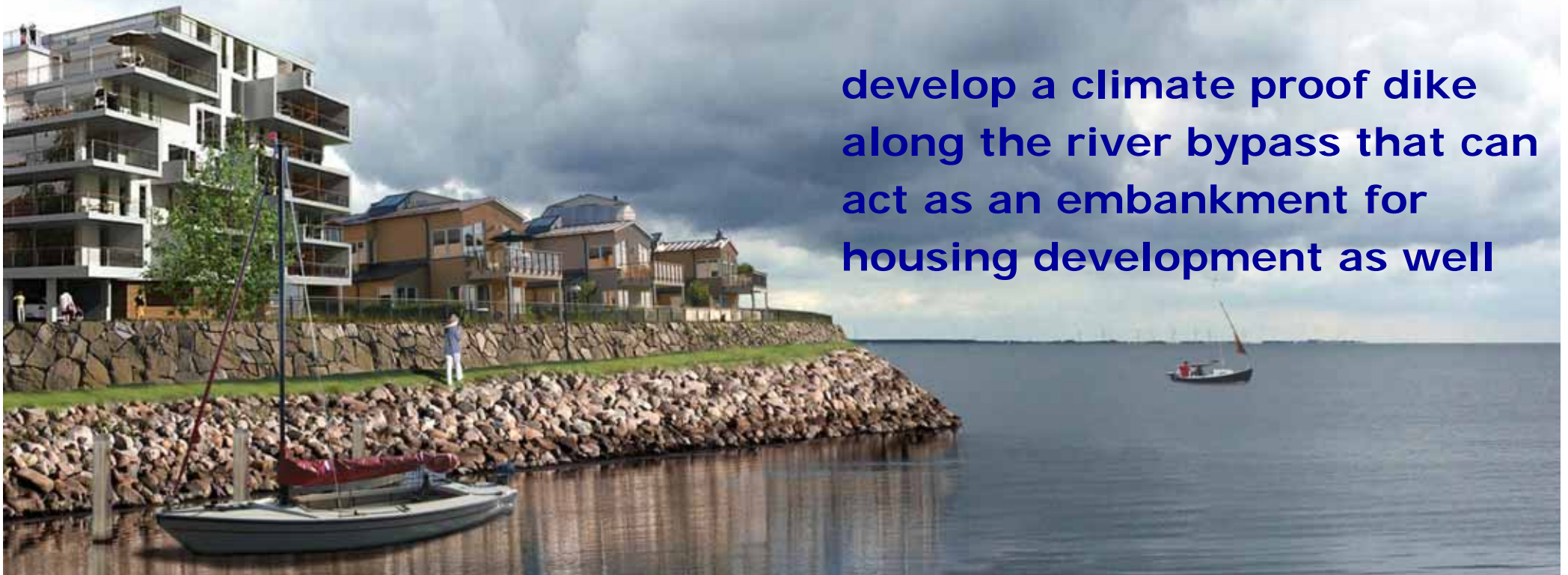


# Advice of the Delta Committee (autumn 2008)

- emphasis on the necessity of long term 'space for the river' measures
- increase the level of the Lake IJsselmeer with a maximum of 1.5 m. in the long term

**Recent idea (2009):**

**develop a climate proof dike  
along the river bypass that can  
act as an embankment for  
housing development as well**





# Statements

- 'think globally, act locally' is a hell of a job in multi-stakeholder plan-making processes
- top-down policy directives are a helpful necessity in case they trigger (instead of block) local action
- the most important success factor of multi-stakeholder plan-making processes are the personal skills and qualities of the stakeholders themselves (e.g. network competences, vision, leadership, negotiating skills)



[www.ijsseldelta.info](http://www.ijsseldelta.info)

#### Public partners of project IJsseldelta



Province of Overijssel



Province of Flevoland



Municipality of Kampen



Municipality of Dronten



Municipality of Oldebroek



Municipality of Zwolle



Waterboard Groot Salland



Waterboard Zuiderzeeland



Staatsbosbeheer



Ministerie van Verkeer en Waterstaat

Ministry of Transport, Public Works and Water Management



Ruimte en Milieu  
Ministerie van Volkshuisvesting,  
Ruimtelijke Ordening en Milieubeheer

Ministry of Housing, Spatial Planning and the Environment



agriculture, nature  
and food quality

Ministry of Agriculture, Nature and Food Quality

#### Main consultants



DHV Consultancy and Engineering



H+N+S Landscape Architects

project - **ijsseldelta** -