



Adaptation as a way of flood management

Ralph Schielen, Ministry of Transport, Public Works and Water Management, Centre for Watermanagement and Twente University, Faculty of Civil Engineering

Geert Roovers, Oranjewoud consultants and engineers

ISFD, Toronto, Canada. 6-8 May, 2008

The Occasion

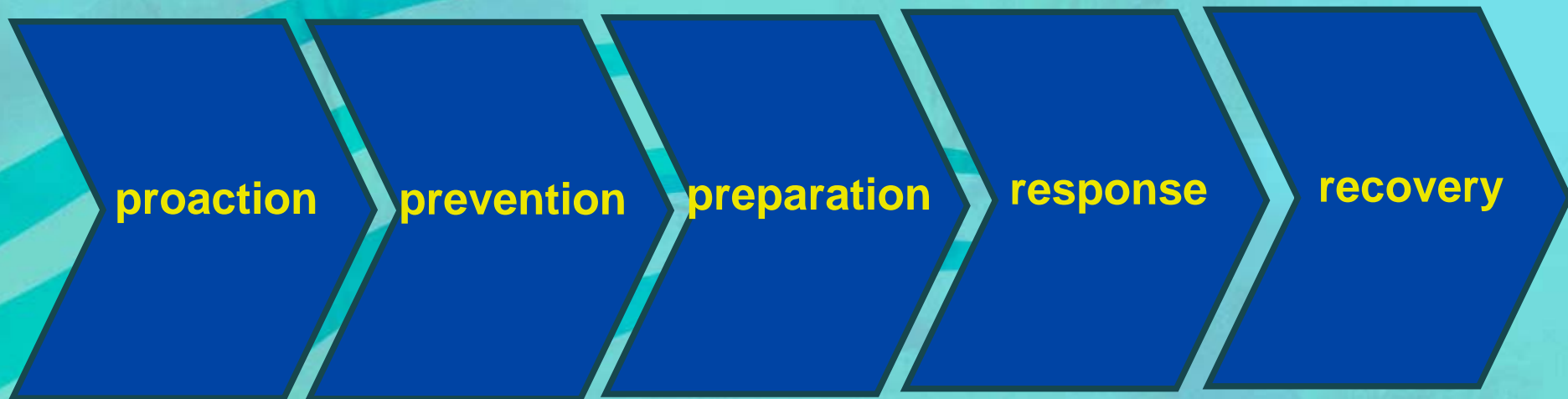


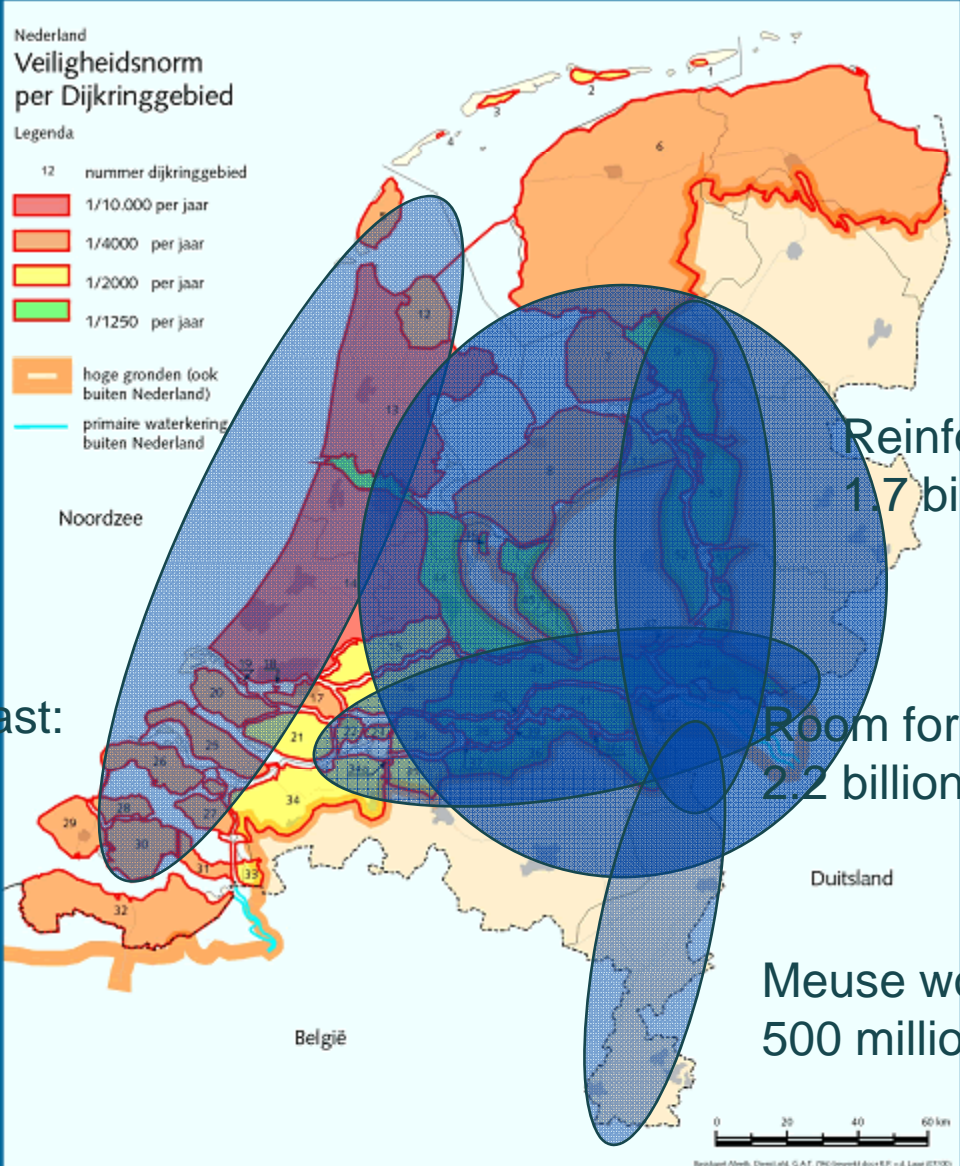
Prof. E. Dykstra, Washington
University

Quotes from ISFD-4

- We should prevent that floods are becoming a disaster (Prof. E. Plate, Germany)
- Manage risks by providing information (Minister Cansfield, Ontario, Canada)
- Reducing risks is not as interesting as responding to disasters (Dr. Briceno, UN)
- Recovery will take longer, and will cost much more than you think (D. Frink, USA)
- Support for flood protection changes over time (J. Barry, USA)
- Poor/no identification of safe havens in case of a crises (D. Lumbroso, Great Britain)
- During crises, there is a general lack of communication towards the general public
- ...

Safety chain





Weak links in the coast:
600 million euro's

5.0 billion euro's
for prevention

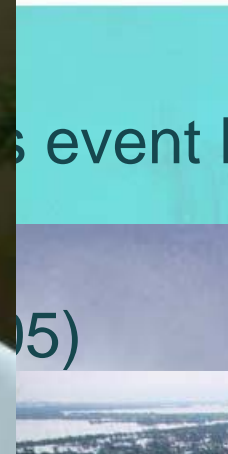
Reinforcing river dikes:
1.7 billion euro's

Room for the River:
2.2 billion euro's

Meuse works:
500 million euro's

The message

- Safety system in the Netherlands is ok.
- Raising awareness is difficult, absolute safety feeling
- What do we do when things go wrong
- More attention for consequences, communication
- Concept: 'A flood is just another normal situation'
- Different policy, another time scale



- Awareness campaigns 'Living with the water'



Awareness (2/2)

- Exercise in november 2008
- Riskmapping (www.risicokaarten.nl)
- Awareness by 'natives' still present





Terwolde

Image © 2008 Aerodata International Surveys

© 2008 Tele Atlas

Aanwijzer 52°16'42.89" N 6°07'13.47" O verh 2 m

Streaming 100%

Google™

Ooghoogte 2.51 km

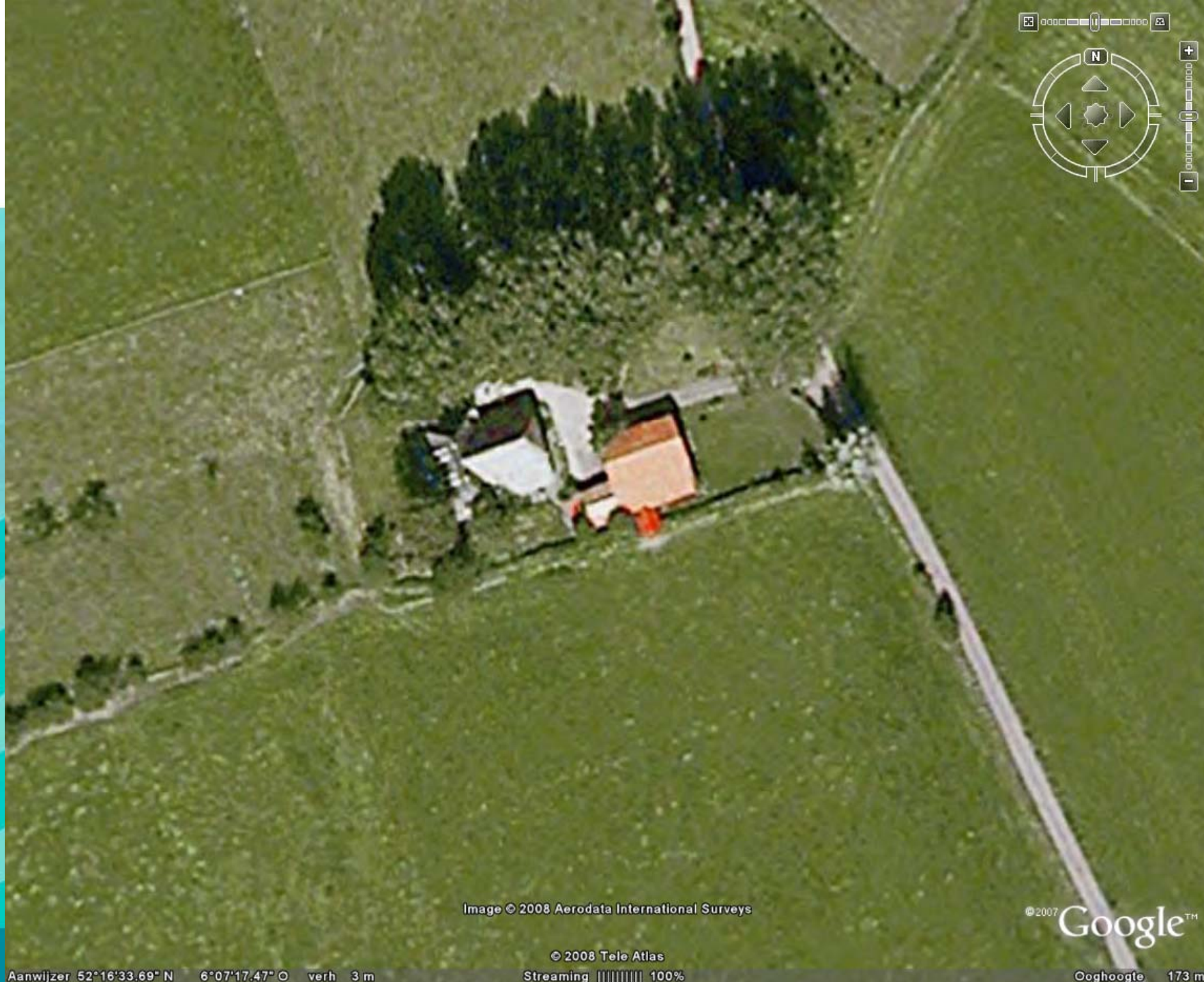


Image © 2008 Aerodata International Surveys

© 2007 Google™

© 2008 Tele Atlas

Aanwijzer 52°16'33.69" N 6°07'17.47" O verh 3 m

Streaming 100%

Ooghoogte 173 m

No absolute safety: adapt and be prepared



Frame of Mind

‘An inundation is just another normal situation’

‘An inundation is no crisis but a manageable situation’



Input:



Worst credible flood

Impact of flood: demand for assistance

The Netherlands in 2050

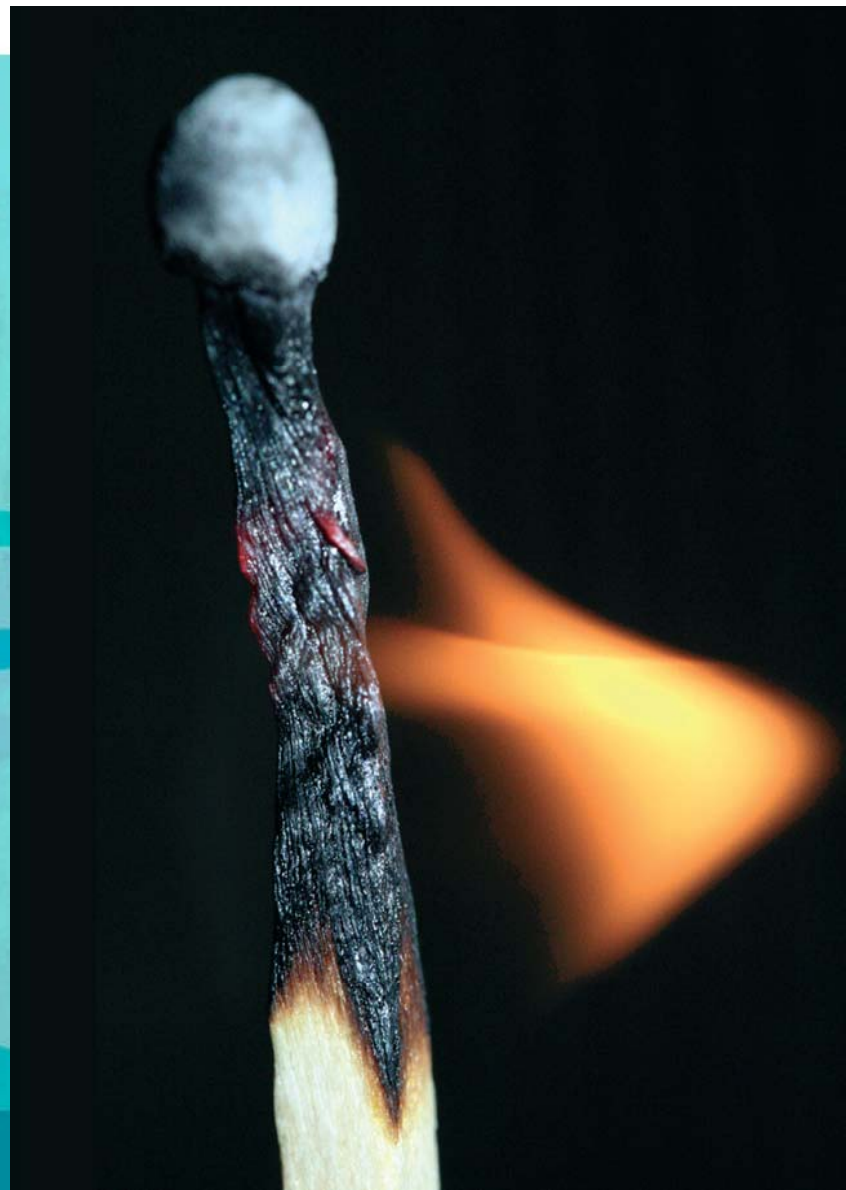


Self extinguishing disaster: the basis

- Resilient society
- Cell structure

Concept is in line with ideas and trends:

- Government vs community
- All disasters are local
- Strong communities tie together



Self extinguishing disaster

- Resilient society
 - Able to cope with threat
 - Exchanges ideas and experiences
 - Constructively deals with the conflict

Inundations should not be prevented at all costs !!

Self extinguishing disaster

- Cell structure:
 - Small, local, coherent
 - Evacuation and shelter facilities

self-extinguishing
disaster
cell structure



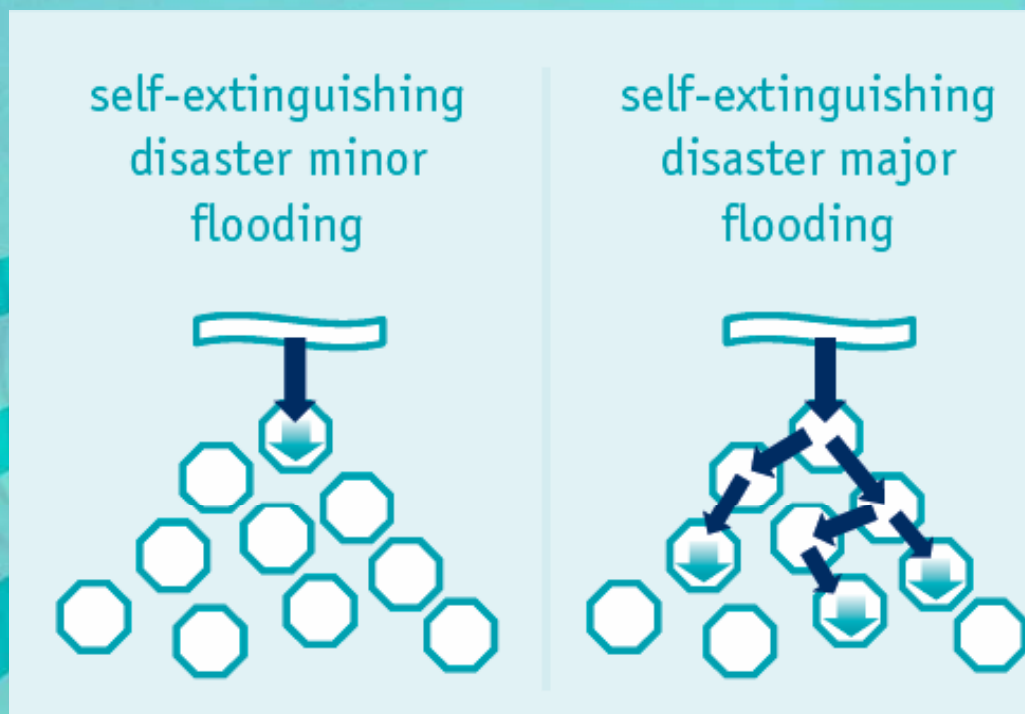
self-extinguishing disaster cell structure



-- Resilient and adaptive

Resilience = awareness + self-reliance

Self extinguishing disaster



Learning communities: new experiences, adapted strategies

Elements of the concept

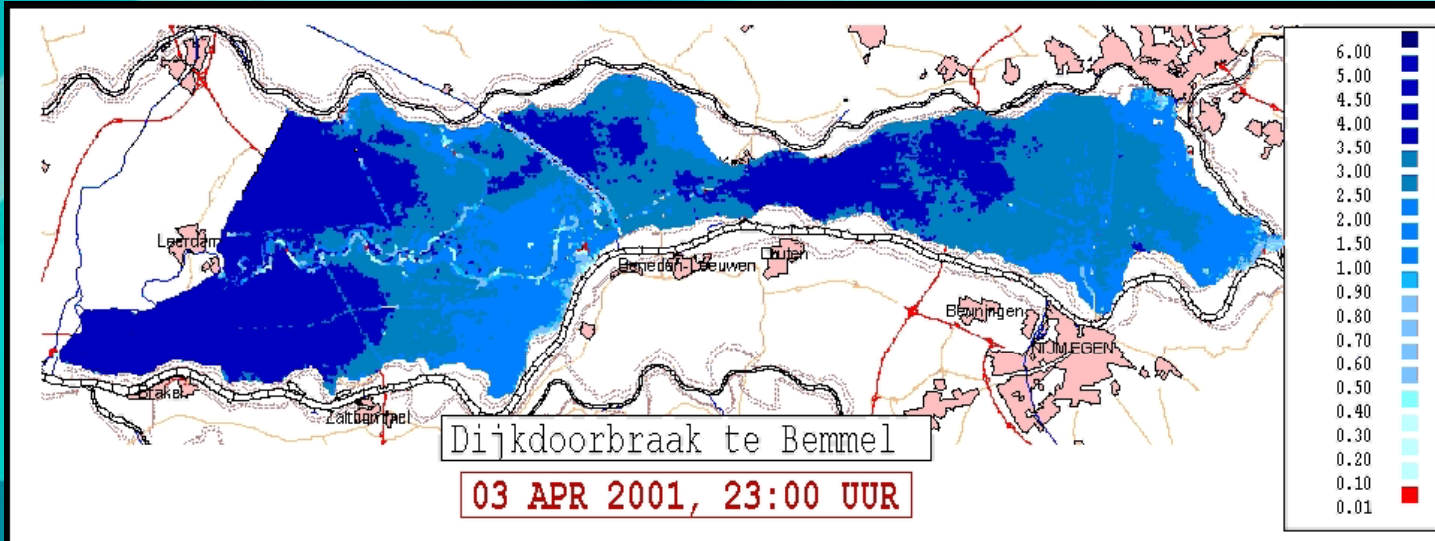
- The self-extinguish
- The encouraging a
- The government stimulates
- School programs
 - The adaptive infras
- At crisis: government 'rules'
 - The constant suppl
- What do you need to survive



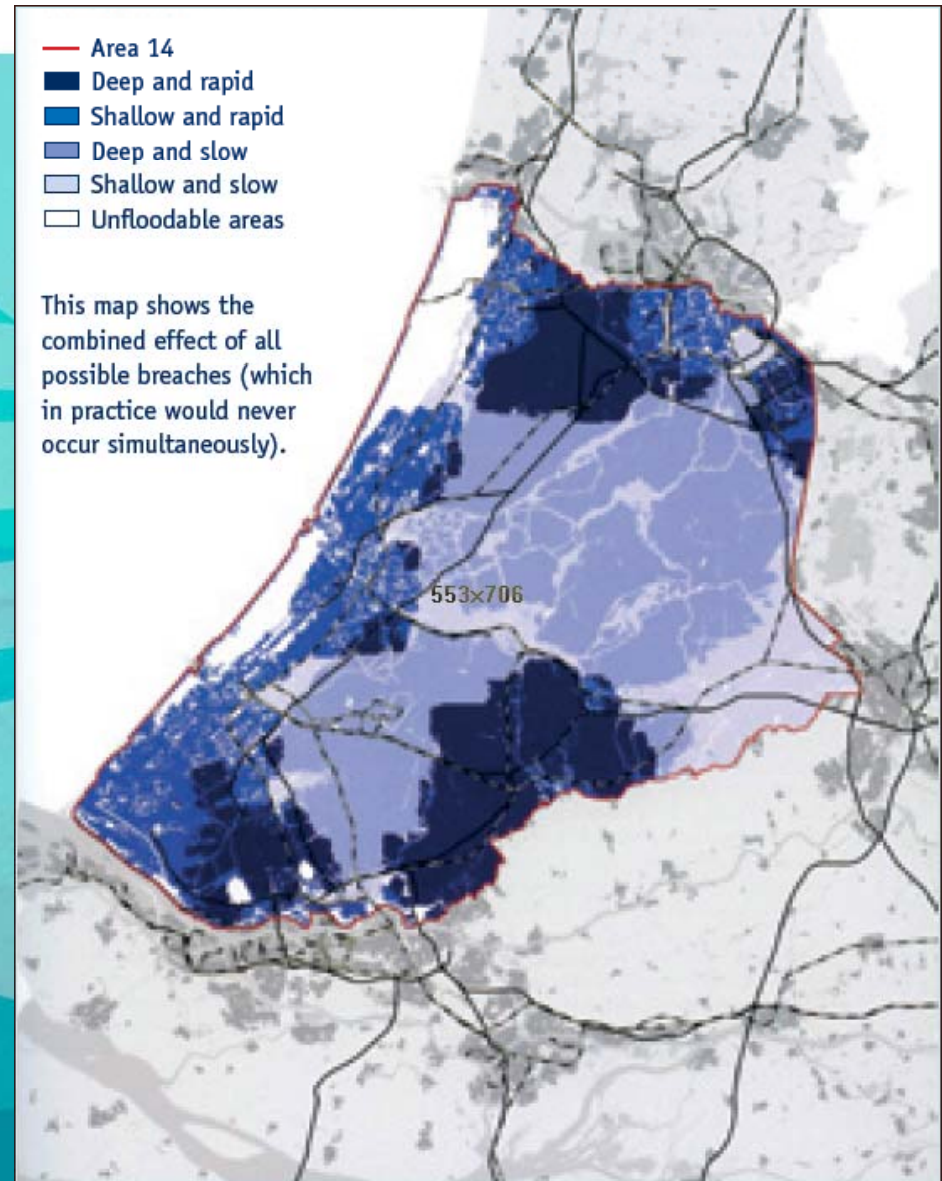
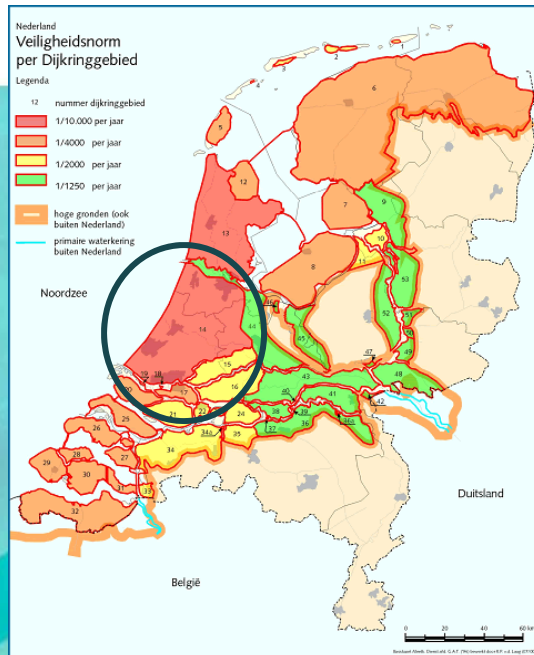
When does the concept work?



Inundation of section 43, after 4 days.



When does the concept work



Safety paradox

High protection level 'needs' wake up calls to maintain awareness

Concept might work best in areas with lower protection levels (1:50-1:200)

STORM

over Holland
2050

A resilient society survives the rising water

Ministerie van Verkeer en Waterstaat
Rijkswaterstaat
Water & Nieuwslaan

www.katrina2050.nl

oranjewoud

Elaboration of the concept in 2008
Storm over Holland 2050
www.katrina2050.nl

Quotes from ISFD-4

- We should prevent that floods are becoming a disaster (Prof. E. Plate, Germany)
- Manage risks by providing information (Minister Cansfield, Ontario, Canada)
- Reducing risks is not as interesting as responding to disasters (Dr. Briceno, UN)
- Recovery will take longer, and will cost much more than you think (D. Frink, USA)
- Support for flood protection changes over time (J. Barry, USA)
- Poor/no identification of safe havens in case of a crises (D. Lumbroso, Great Britain)
- During crises, there is a general lack of communication towards the general public
- ...