



Session IV
From Risk to Resilience:
Building for the Future

Lessons from Flood Risk Management in the Netherlands

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Every place is different. We need a tailored approach

Flood threat in the Netherlands

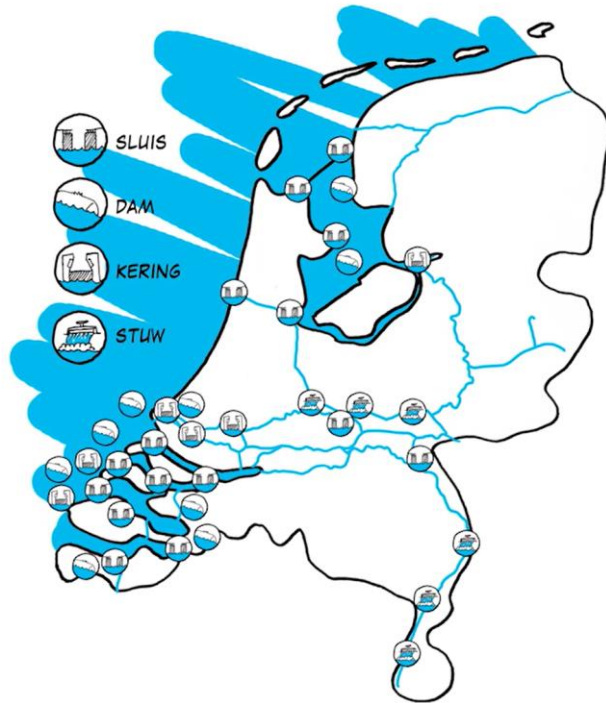


Major cities below sea level:
Amsterdam, Rotterdam, The Hague

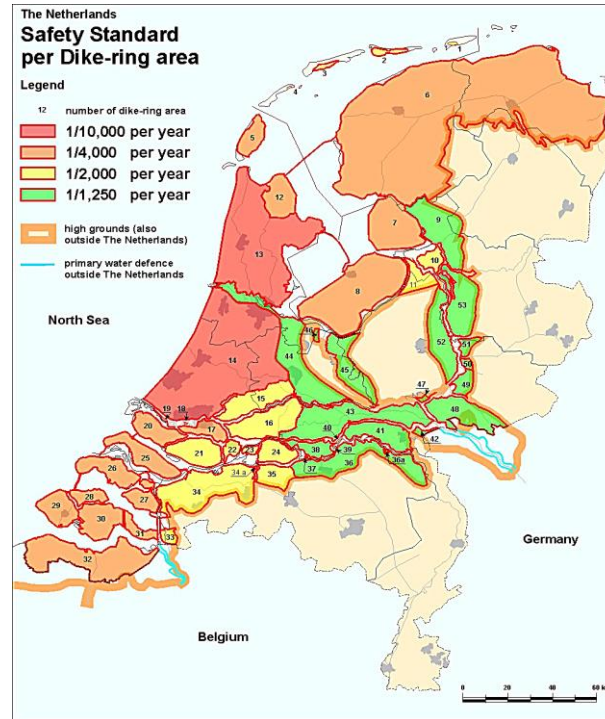
- What are the key features of the system?
- What do we want to achieve?
- Now and in the future?

Multiple layers of defense

Dams and hydraulic structures



Dikes



Room for the River

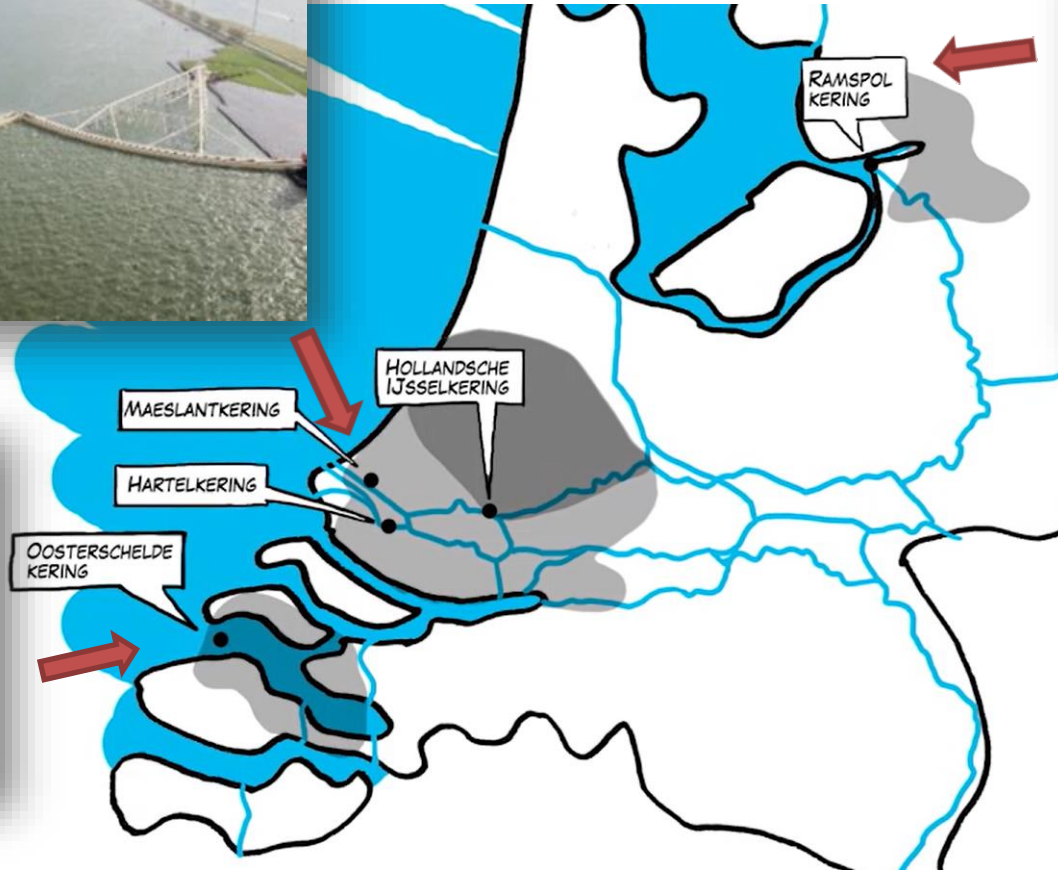


And there is more!

- Spatial planning
- Resilient infrastructure
- Emergency planning



Five storm surge barriers



- Reduce the area that is threatened by sea
- Need for passing of water
- Each barrier is unique!



The Maeslant barrier

- Operational since 1997
 - Two doors: 210 m, 22 m high, 15 m deep
- Triggered by sea level and river flow
 - Use of Decision Support Tool based on forecasting
 - Close barrier: +3m NAP at Rotterdam
 - Closing takes 2 hours
 - Alert: +2,6m NAP at Rotterdam
- Expected operation: once every 7 years
 - Trigger “+3 m NAP” has not yet occurred
 - Two storm test at +2,6m NAP in 2007 and 2018
- Costs
 - Construction 450M Eur
 - Maintenance and operation: 5M Eur/year

