

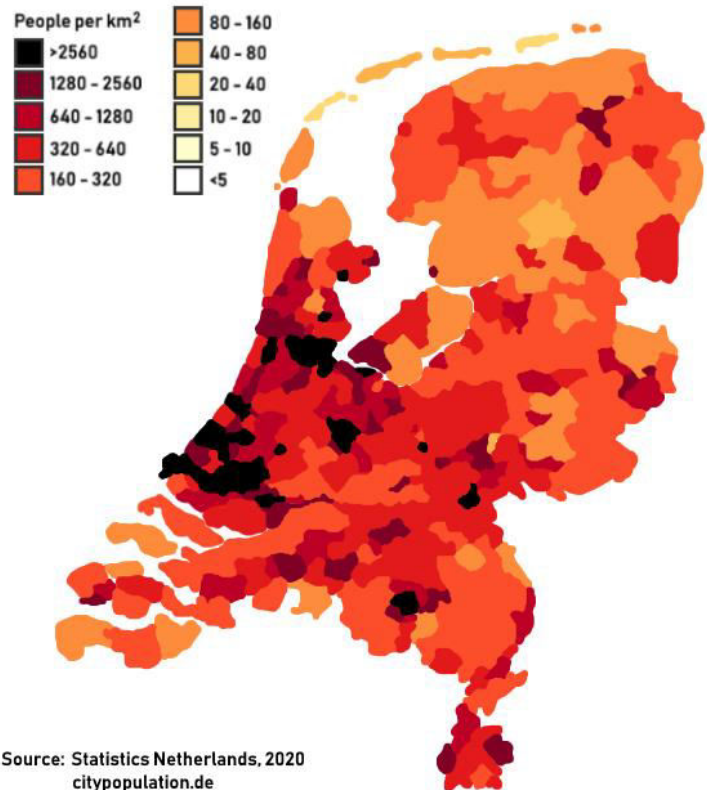


Integrating Nature-based Solutions into Policies for Flood Risk Management in the Netherlands

Liping Dai

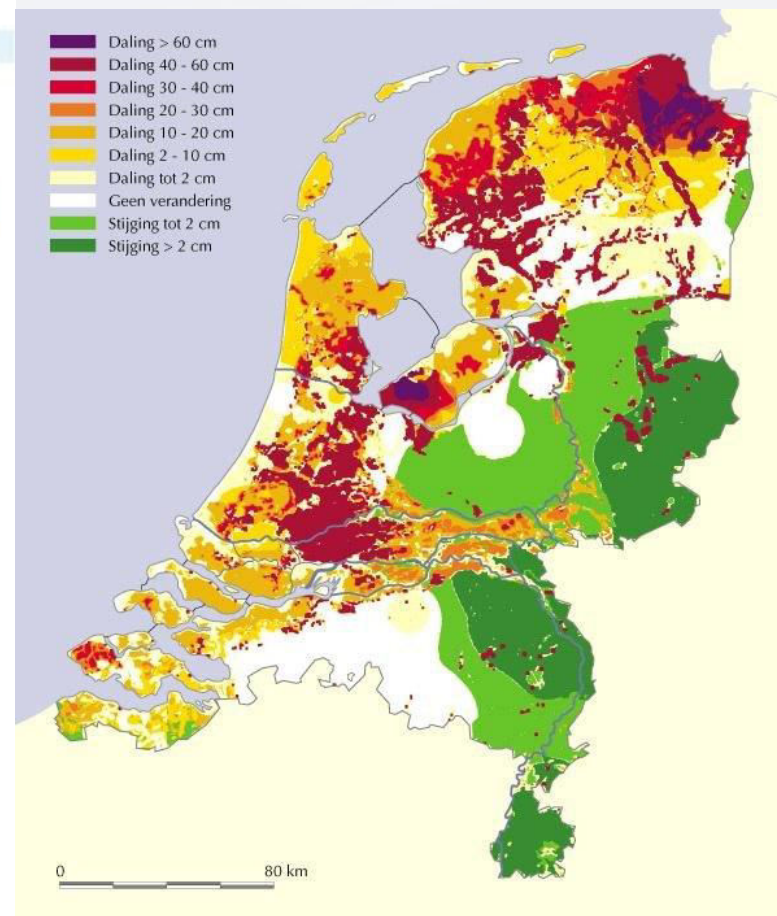
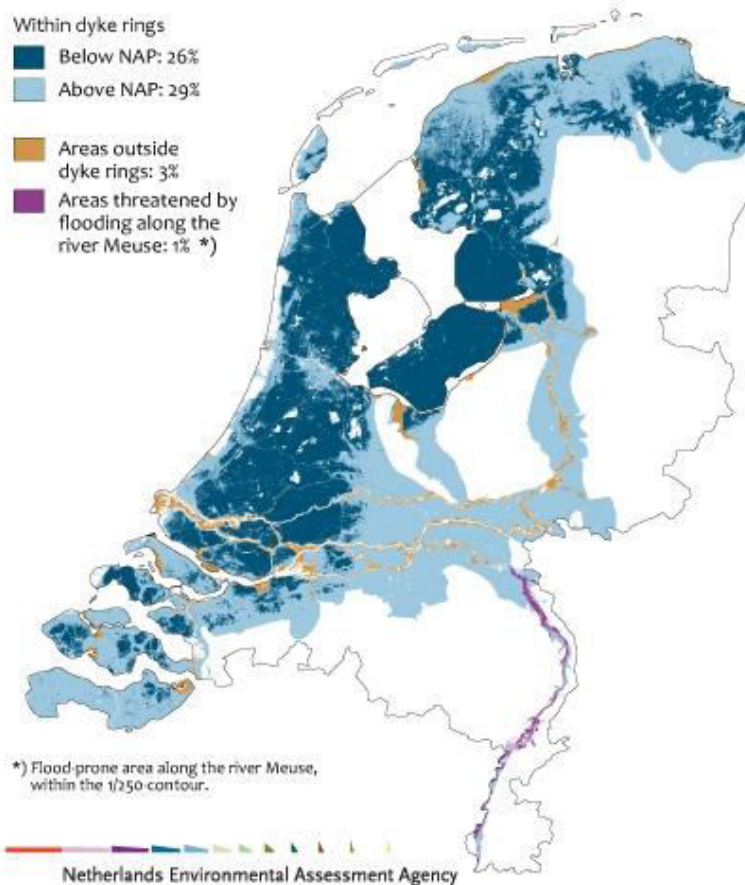
Utrecht Centre for Water, Oceans and Sustainability Law
(UCWOSL), Utrecht University

Netherlands - population density



Flood-prone area

- Within dyke rings
- Below NAP: 26%
 - Above NAP: 29%
- Areas outside dyke rings: 3%
- Areas threatened by flooding along the river Meuse: 1% *)



Flood-prone area:

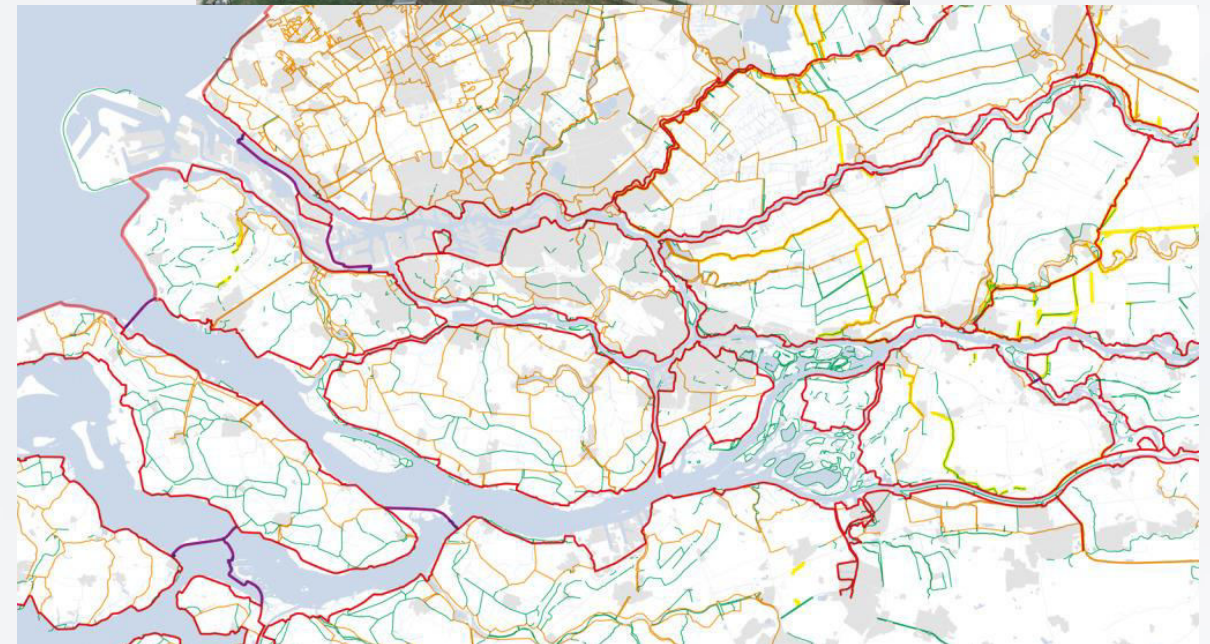
Susceptible to flooding: 59%

Below sea level: 26%

Susceptible to river flooding: 29%

Protected by embankments or dunes: 55%

- Dutch Flood Risk Management
 - Long tradition, world-famous
 - Flood defense strategy
 - Engineering approach
- Near flood events 1993/1995; damage and large-scale evacuations in River Area
- Common sense of urgency, but growing opposition against 'traditional' measures



Types of measures: our Toolkit

Strengthening dikes



Dyke relocation



Depoldering



Lowering of floodplains



Lowering groynes



Deepening summer bed



High-water channel



Removing obstacles



Water storage

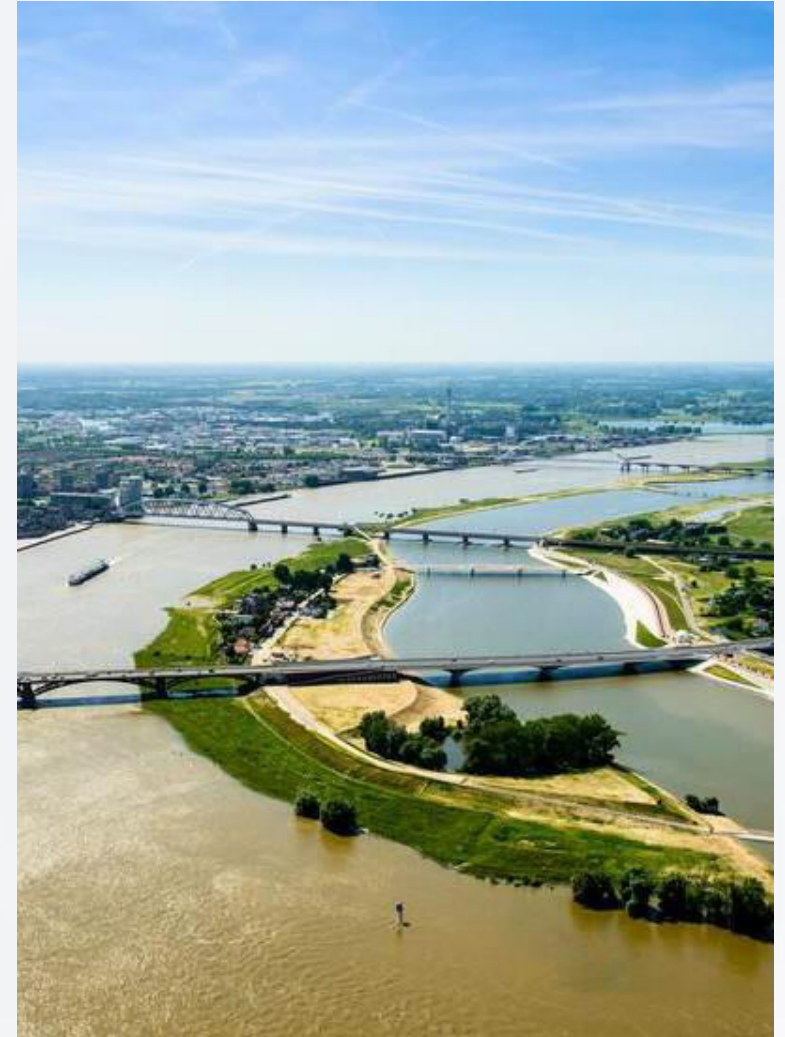


What has really
proven to be
successful?
The 'Room for
the river'
approach!



Boeve, M. N., van den Broek, G. M., Groothuijse, F. A. G., Keessen, A. M., & van Rijswijk, H. F. M. W. (2019). Evaluatie PKB Ruimte voor de Rivier: juridisch-bestuurlijke lessen voor toekomstige grootschalige infrastructurele overheidsprojecten. Tijdschrift voor omgevingsrecht, 2019(2), 52-64
van Doorn-Hoekveld, W., Gilissen, H. K., Groothuijse, F., & van Rijswijk, H. (2022). Adaptation to Climate Change in Dutch Flood Risk Management: Innovative Approaches and Related Challenges. Utrecht Law Review, (2022) 18(2), 51-69..

- Common sense of urgency (1993, 1995); need for collaboration
- Clear, binding and non-negotiable goals and deadline
- **Combined goals** (flood protection & improving spatial quality)



“Decentralize what can”

- PKB---a framework-setting instrument at the national level and legally binding
- Administrative cooperation agreements--decentralized governments committed to the implementation of the PKB



Participation

- Informal participation--- information evenings, kitchen table conversations..
- taking the community's input into the decision-making process as much as possible



Flexibility in Decision-making

Project decisions--limited flexibility (e.g. permits, exemptions, or other approvals) but not prevent innovative solutions

Implementation decisions--giving contractors freedom to determine the method of execution





Thank you!