



Deltaprogramme

Spatial Adaptation

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Deltaprogramme

- After the disastrous flood of 1953, the government took measures to better protect the country against flooding.
- **Increased rainfall, rising sea levels, higher temperatures**
- greater impact: population has increased
- This is why the Netherlands needs to look far ahead and draw up sound plans for the future. These plans are presented in the annual Delta Programme.



Programme Spatial Climate Adaptation

Problem

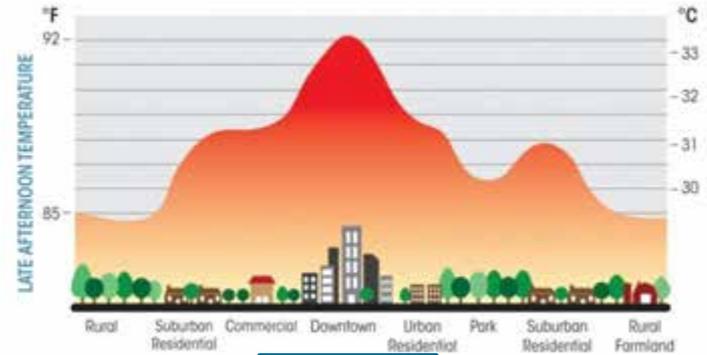
- Main effects of **climate change** in the Netherlands:
 - Sea level rise
 - Peak discharge rivers (rainfall winter)
 - Extreme rainfall intensity (summer)
 - Drought
 - Heat
- **Increased vulnerability** of living environment
- High risk of **damage** and **casualties**.
- Knowledge and experience insufficient used in **spatial planning decisions**



Scope Deltaplan



Waterlogging



Heat



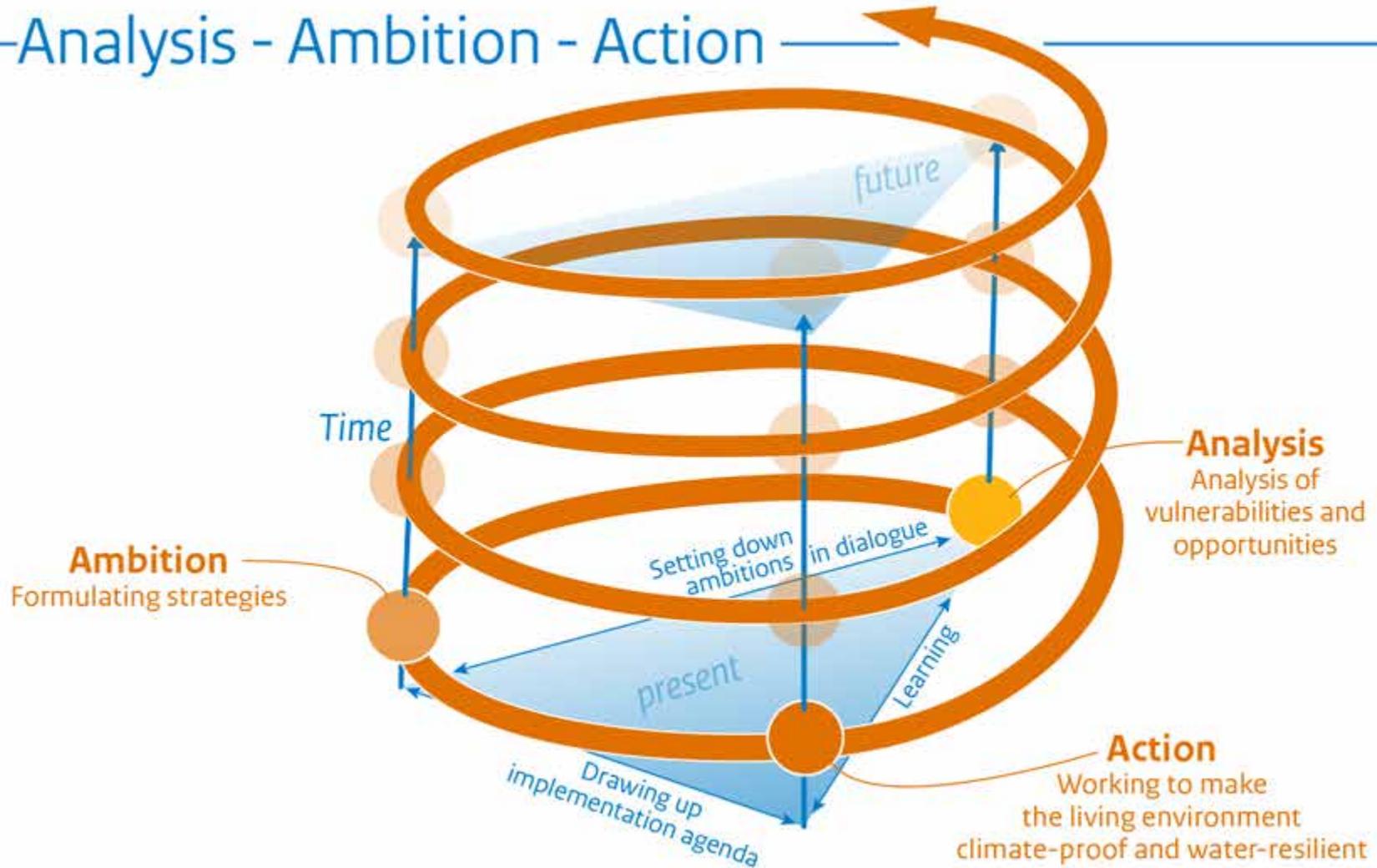
Flooding



Drought



Analysis - Ambition - Action





7 ambitions

Water-resilient and
climate-proof spatial
planning in the Netherlands



Drawing up
implementation agenda



Mapping out
vulnerabilities



Conducting risk dialogue
and drawing up strategy



Capitalising on
opportunities for linkage



Regulating and
embedding



Responding
to calamities



Encouraging
and facilitating



Ambition 1: Mapping out vulnerabilities

- **Before 2019 every municipality has performed a stresstest**





Critical Vital and vulnerable





Ambition 4: Capitalising on opportunities for linkage

- Linking the watermanagement challenges to existing agenda's for development and maintenance.





Katwijk



Ambition 5: Promoting and Facilitating

- Pursue Incentive Programme
- Platform Climateproof Together
- Kennisportal www.ruimtelijkeadaptatie.nl





Incentive programme 2015-2017

- Knowledge sharing
 - Expert meetings
 - Regional meetings
 - Knowledge portal
 - Climate Adaptation Atlas
- Learning by doing:
 - Impact projects
 - Living Labs
 - City Deal
 - Pilot stresstests
- Education

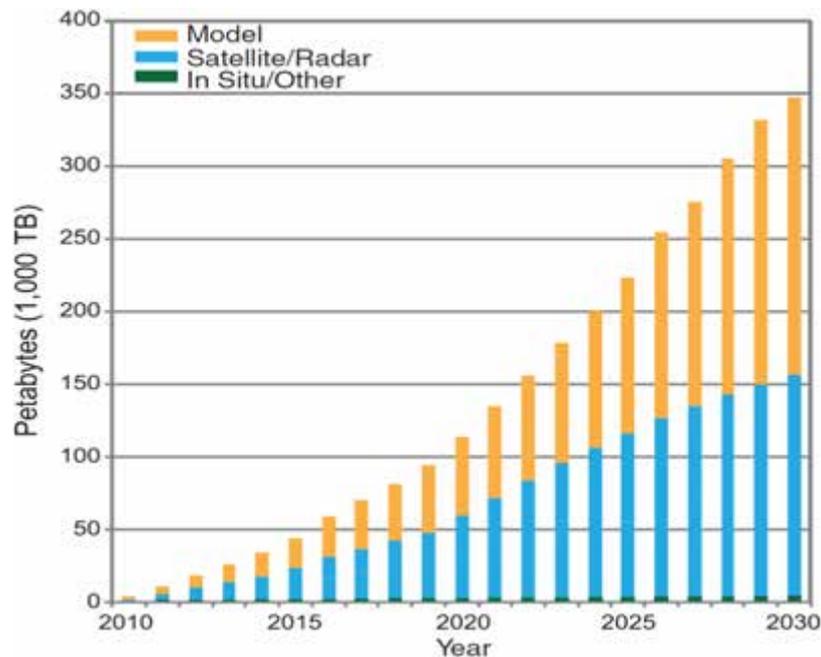


Knowledge sharing

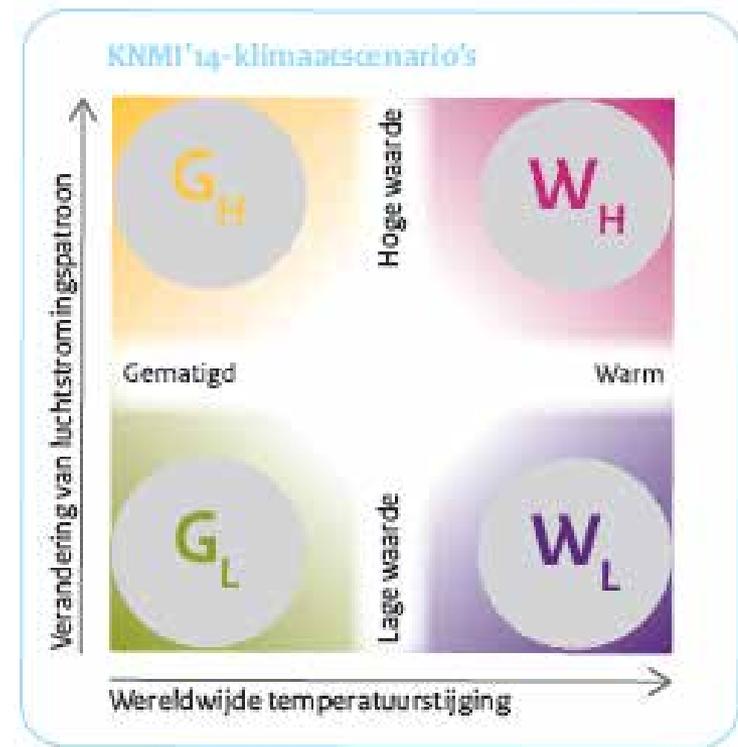
- Local governments play a crucial role in adaptation
- Climate science and data does not reach local stakeholders
- There is a clear need for methods that bridge the gap between the climate science community and the spatial planning community

Knowledge sharing

- The expected exploding volume of climate data (Overpeck et al. 2011)

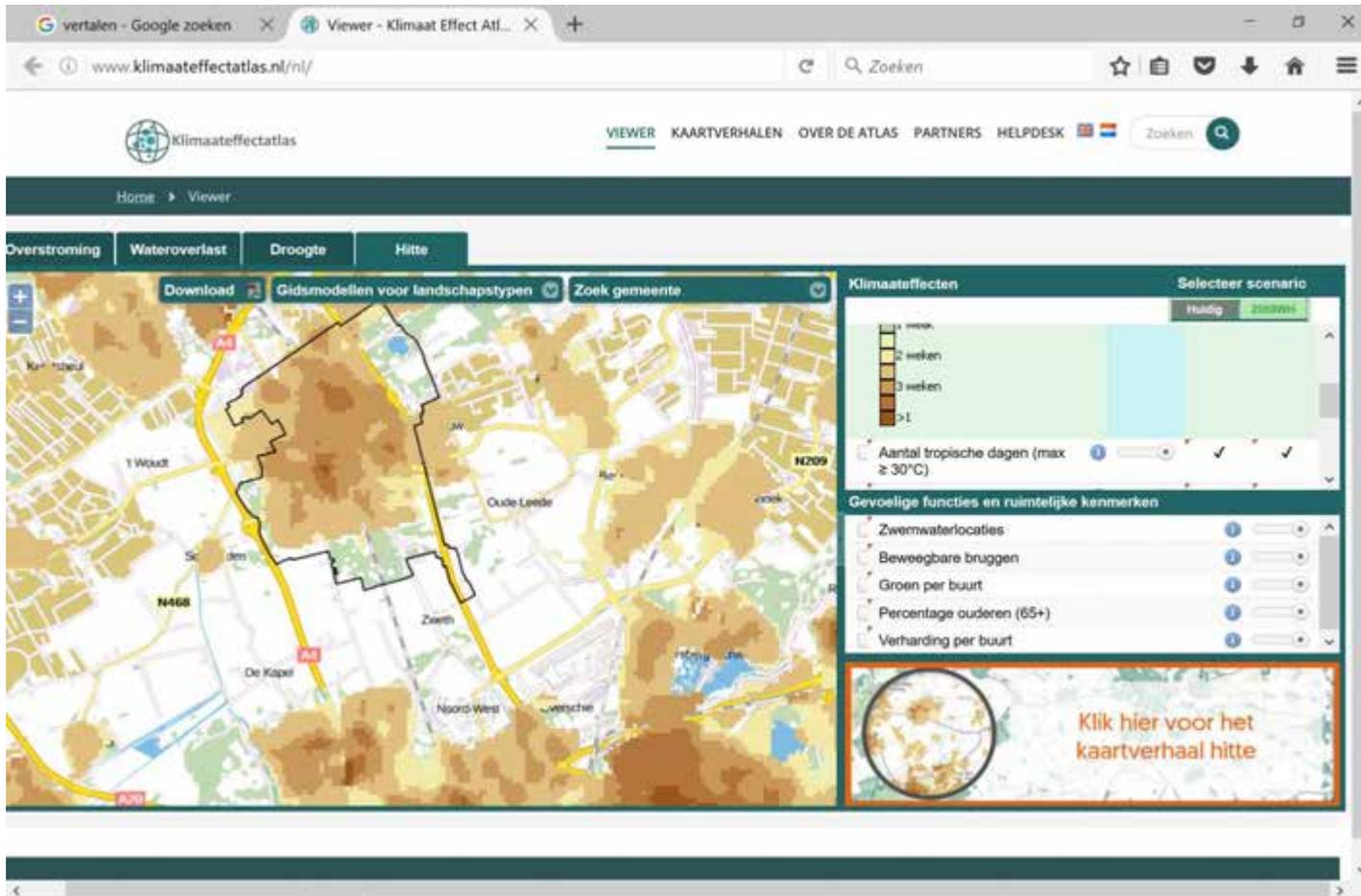


- Climate scenario's





Climate Effect Atlas (heat stress)





City Deal climate adaptation



Learning by doing



- Region Land van Cuijk





Ambition 6: Regulating and embedding

- Integral part of environmental visions
- Secure SA in implementation practice (municipalities and water boards) and policies (provinces)
- Explore (additional) legislation and regulations
- Before 2020 explore possibilities through performance guidelines and predicates.
- Appeal individuals on their own responsibility





Ambition 7: Responding to calamities

- Damage and nuisance will persist
- For calamity, during and curative





Dordrecht

Multi layer safety

Layer 3: Disaster management



Layer 2: Spatial planning



Layer 1: Prevention





Boulevard Scheveningen





High tide channel Lent - Nijmegen





Water square Rotterdam





Betondorp, Amsterdam

