

SESSION III: Pop-Up Talks

- 1) Simon Collander-Brown, DSTL
- 2) Anant Prakash, BP
- 3) Simon Cook, Southern Water Services
- 4) Rosalind West, DEFRA

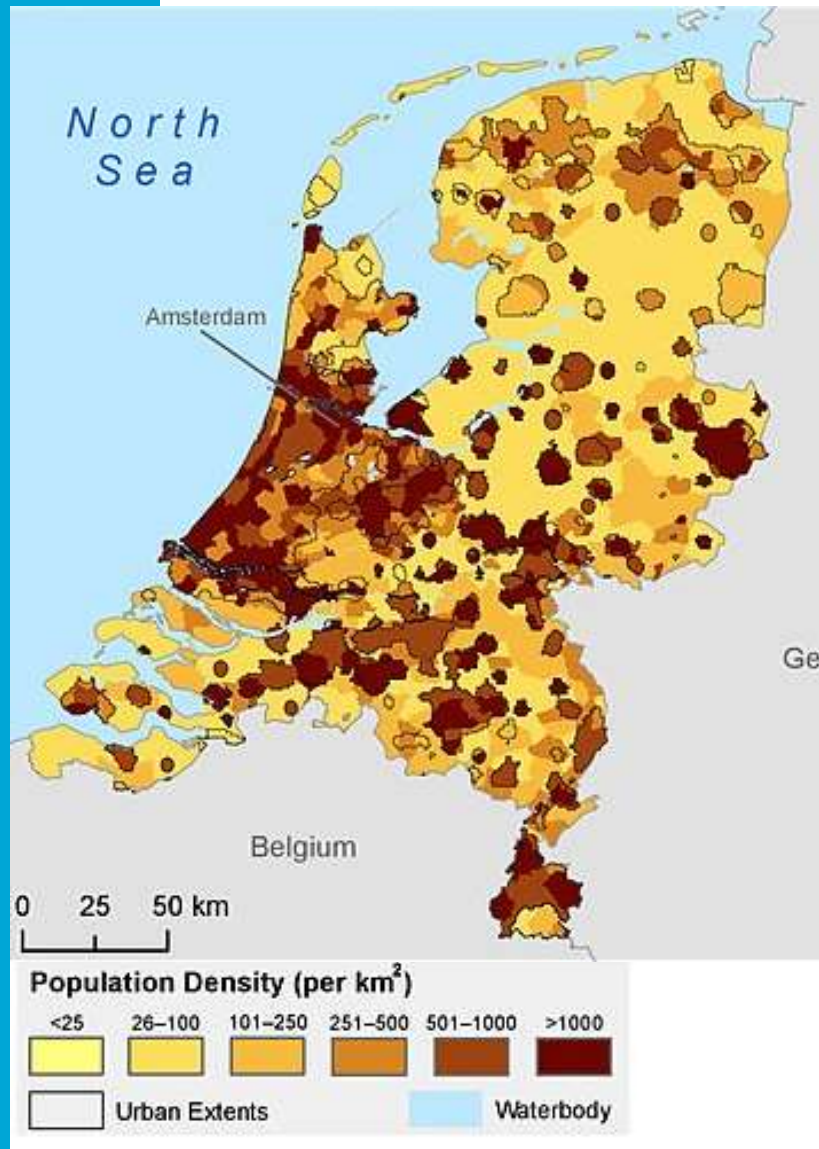
Specialist: **Jan Kwakkel**



Supporting decision making under deep uncertainty

some experiences in The Netherlands





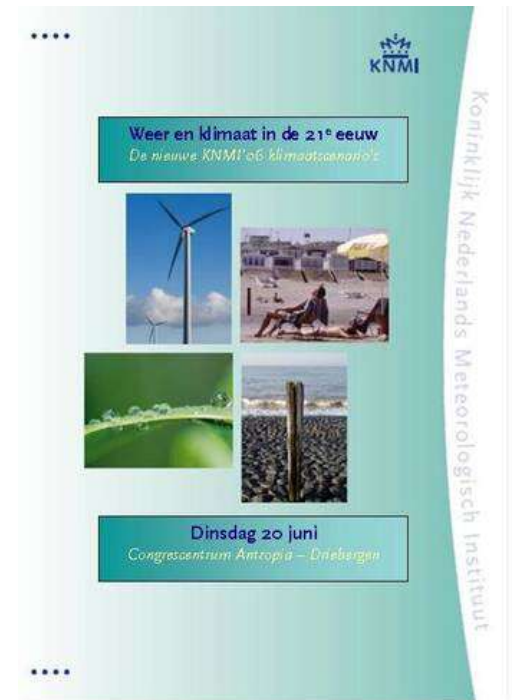
A problem with scenarios

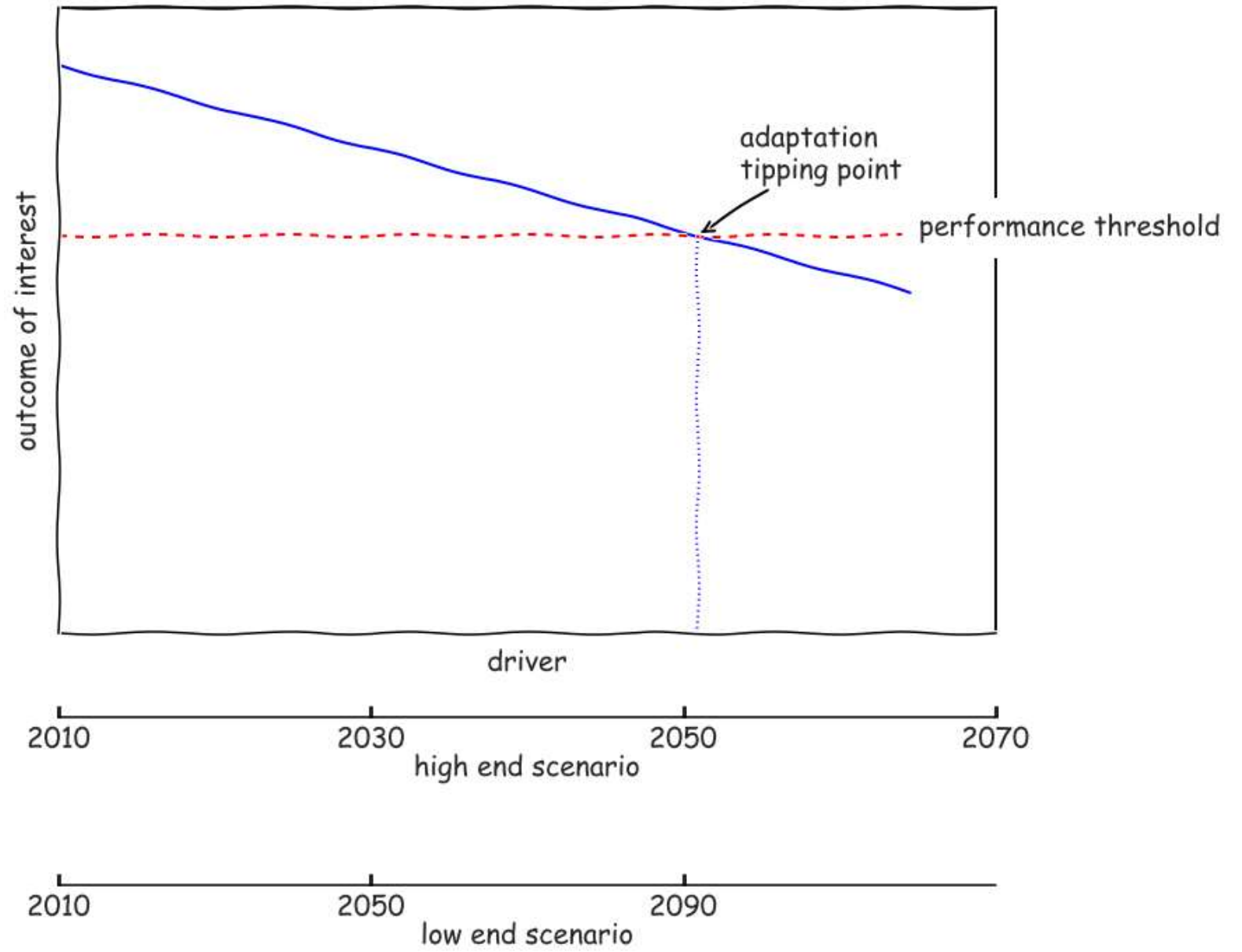
Long history of scenario based planning in the Netherlands

- Transport
- Land use
- Water management

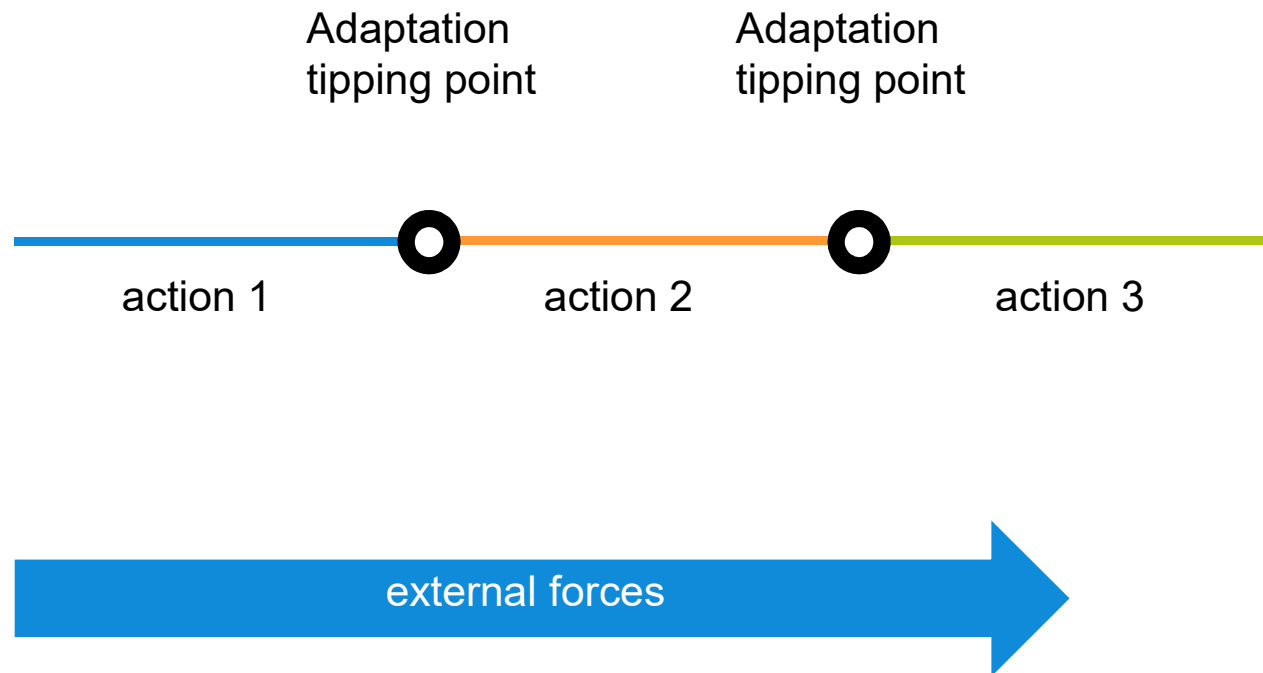
Problem

- Timing of building new assets is scenario depended
- New scenario requires redoing the analysis for timing

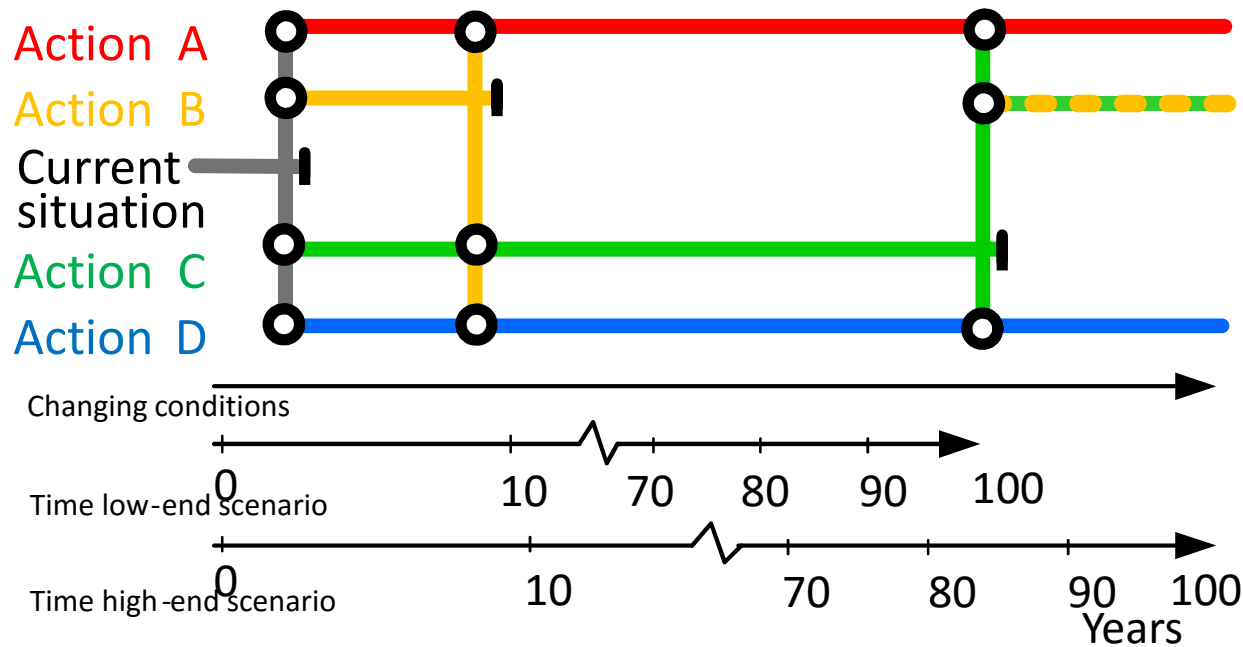




What is an adaptation pathway?



Adaptation pathways



- Transfer station to new policy action
- Adaptation Tipping Point of a policy action (Terminal)
- Policy action effective

Time horizon 100 years				
Pathway		Costs	Benefits	Co-benefits
1		+++	+	0
2		+++++	0	0
3		+++	0	0
4		+++	0	0
5		0	0	-
6		++++	0	-
7		+++	0	-
8		+	+	---
9		++	+	---

Adaptive delta management what is new?

What is not new?

we have for centuries adapted our delta to changing conditions, but always in response to (near) disasters

What is new?

anticipate uncertain future changes and address them proactively

Need for new methods for problem analysis, policy analysis, planning, and decision support

Dealing with uncertainties is the key issue of adaptive (delta) planning:

“what to do and under what conditions to do it?”

“not too much, not too little”

“not too early, not too late”



How to develop adaptation pathways

Qualitative approaches

expert opinions

participatory processes



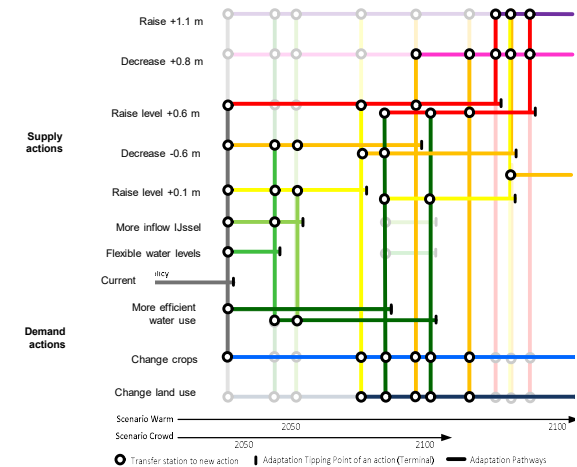
Quantitative approaches

(multi objective) Robust Decision

Making

multi-objective Robust

Optimization



Hybrid

iterate between stakeholder
deliberation and model based



The adoption of adaptive delta management

Delta programme in the Netherlands is enshrined in law

- Agreement on yearly funding
- Commitment to short term action
- Specification of long term options
- Currently focus on design and institutionalization of monitoring

Adoption in various countries

- Bangladesh, Vietnam, Indonesia, co-funded by Dutch National government
- Australia, New Zealand
- United Kingdom (Thames Estuary 2100 plan)