

Exploring, evaluating and upscaling adaptation pathways for Europe

Marjolijn Haasnoot, Ad Jeuken, Laurens Bouwer, Jouni Paavola, Hans Sanderson et al.

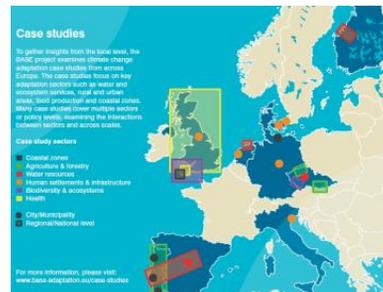


Bottom-up climate
Adaptation Strategies
Europe. Towards a
sustainable Europe

Adaptation pathways can support sustainable (effective, robust and flexible) adaptation to uncertain change.

Upscaling: lessons
from cases

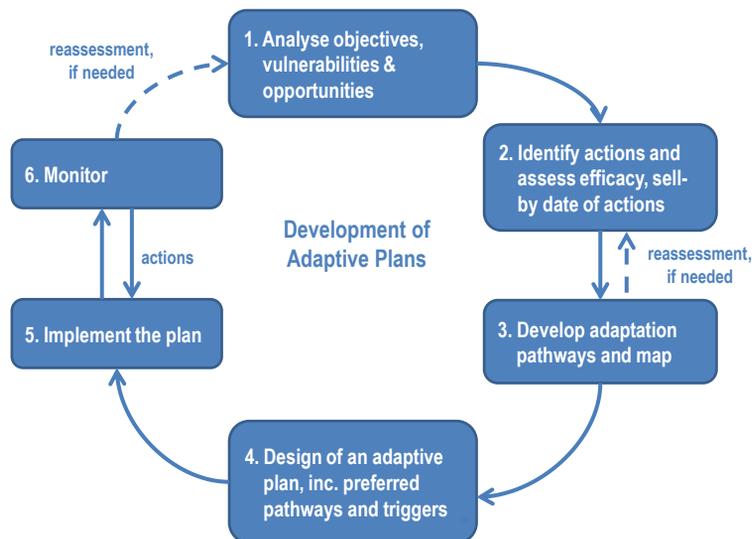
European scale
Model-based



Adaptation pathways describe a **sequence of policy actions/investments** in institutions and infrastructure over time to achieve **objectives** and are part of a **policy and planning framework** (e.g. DAPP*) that ensures **evaluation** of costs and benefits and **monitoring** to track both implementation and changing conditions.

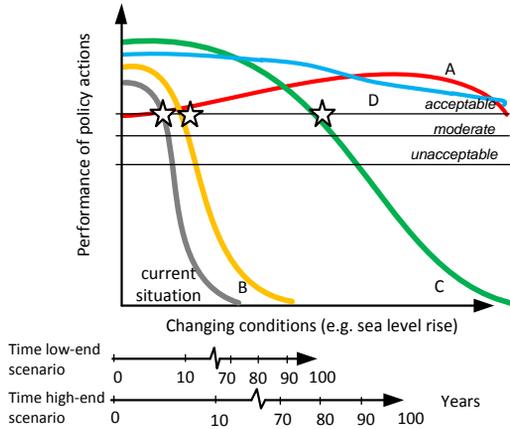
*Haasnoot et al. (2013) Glob. Env. Change. 10.1016/j.gloenvcha.2012.12.006

Planning Framework: Dynamic Adaptive Policy Pathways



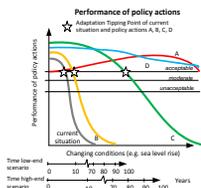
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There are different approaches for developing pathways. BASE uses the performance of actions to identify Adaptation Tipping points (ATP)



Under what **conditions** does the policy fail?

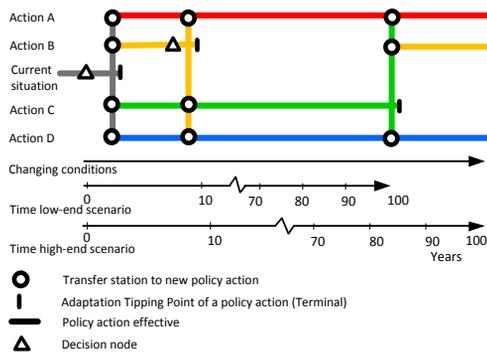
When does the policy start to fail achieving objectives?



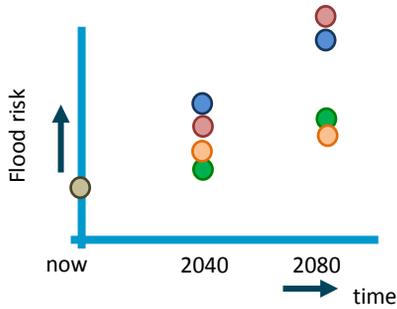
After an ATP other actions are needed to achieve objectives: a pathway emerges.



Adaptation Pathways Map



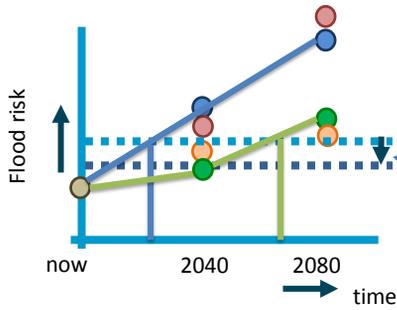
Performance of current situation for three time slices for different scenarios



What is *acceptable* flood risk?
 When do we get an adaptation tipping point?

- Current flood risk
- Flood risk RCP 4.5
- Flood risk RCP 8.5
- Flood risk SSP5
- Flood risk SSP2

Assess moment of Adaptation Tipping Point (sell-by year of actions)

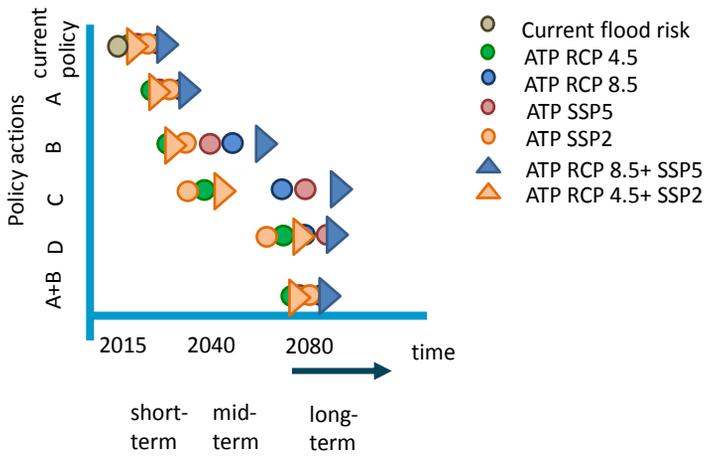


What is *acceptable* flood risk?
 When do we get an adaptation tipping point?

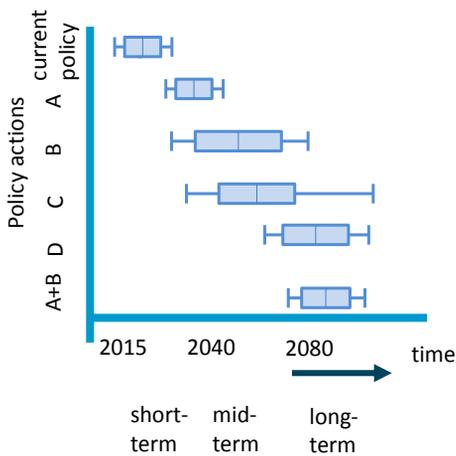
- ▤ Acceptable flood risk
- ▤ Future acceptable flood risk
- Current flood risk
- Flood risk RCP 4.5
- Flood risk RCP 8.5
- Flood risk SSP5
- Flood risk SSP2

Range **ATP** current state:
 2030 in RCP 8.5
 2070 in RCP 4.5

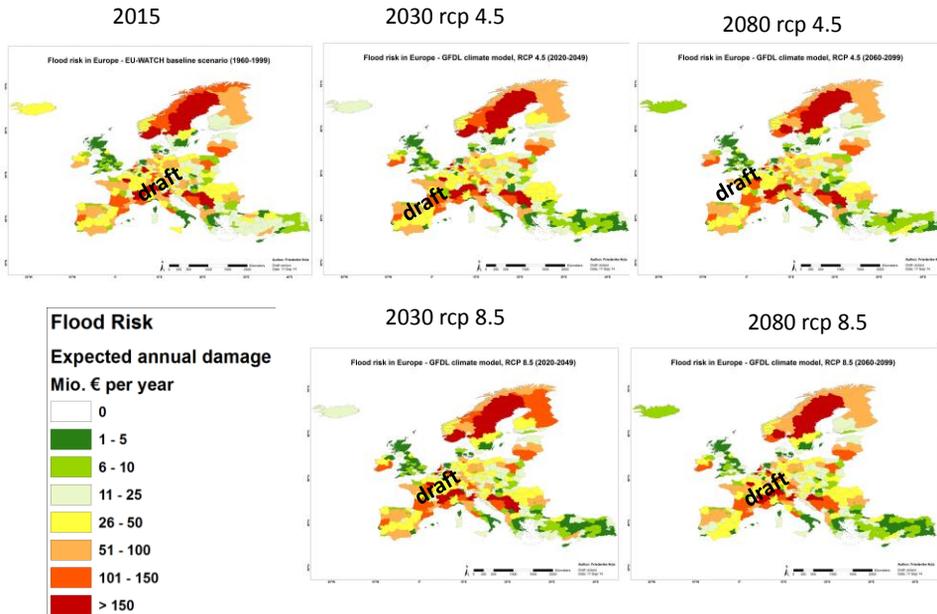
Moment of ATP: Sell-by years of current state and policy actions under different scenarios and models



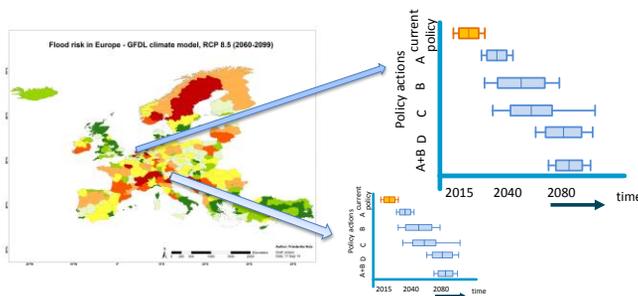
Moment of ATP: Sell-by years of current state and policy actions under different scenarios and models



Model simulations: **example** results on Flood risk, current state

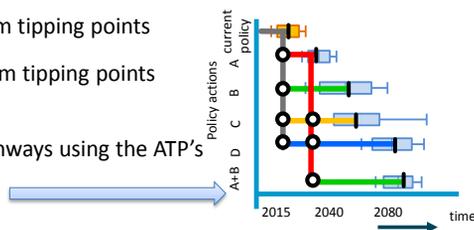


Urgency and timing of adaptation tipping points → pathways



- short term tipping points, countries need to be early adaptors
- mid term tipping points
- long term tipping points

Construct pathways using the ATP's



Lessons from cases (still ongoing..)

Actions

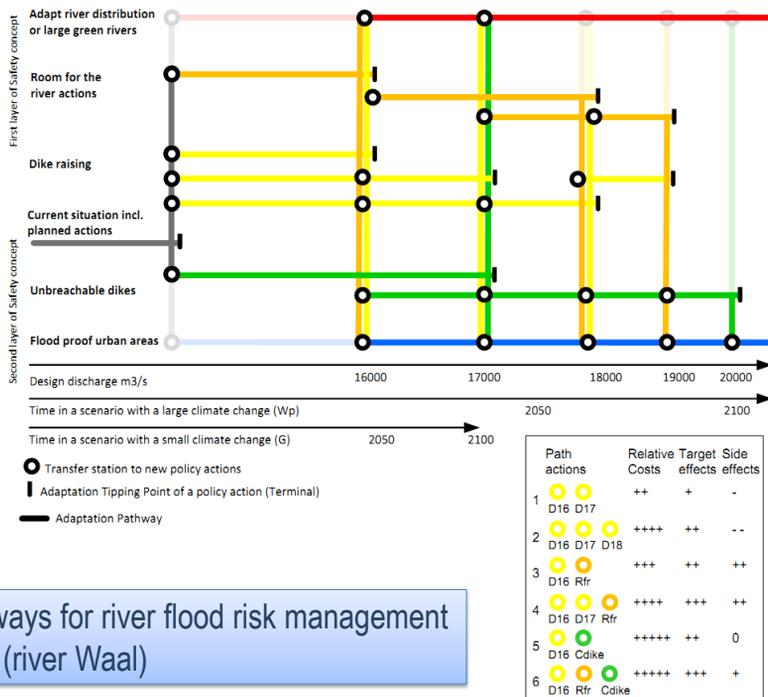
- Vulnerability mitigation – adaptive capacity
 - Damage mitigation: adapt buildings, different crops, water storage, ..
- Exposure mitigation
 - Flood/drought/heat mitigation: higher/stronger embankments, room for the river, dams , water storage, green areas
- Pathways enablers
 - Awareness raising, education, pricing

Criteria ATP

- Related to objectives or changing conditions (e.g. sea level rise).

Costs of actions

Signposts and triggers



Pathways for river flood risk management in NL (river Waal)

Posters of Eliska and Andre will give other examples from the cases

Summary

- European scale models could give quick overview of urgency and timing of actions (ATP) and promising options.
- Cases can give inspiration for EU-pathways and strategies, and what to monitor, but timing and specific actions will be different at regional and local scale.

