



Delta Programme Commissioner



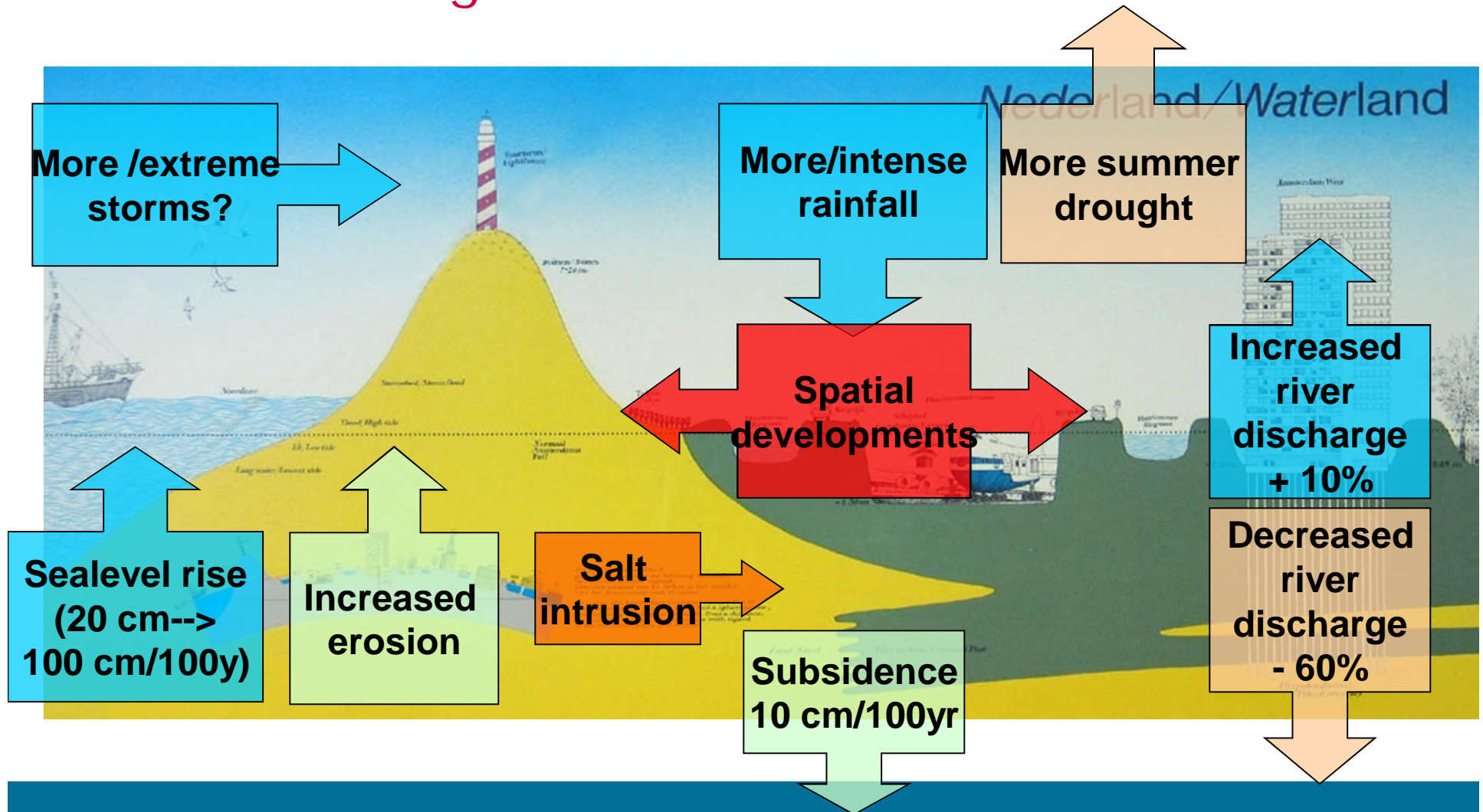
The Delta programme: Policy making for an uncertain future

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Future challenges of the Dutch delta





The Delta Programme



One Aim:

- keeping NL a good, safe and attractive place to live and work for present and future generations (→ long term perspective)

Three Goals

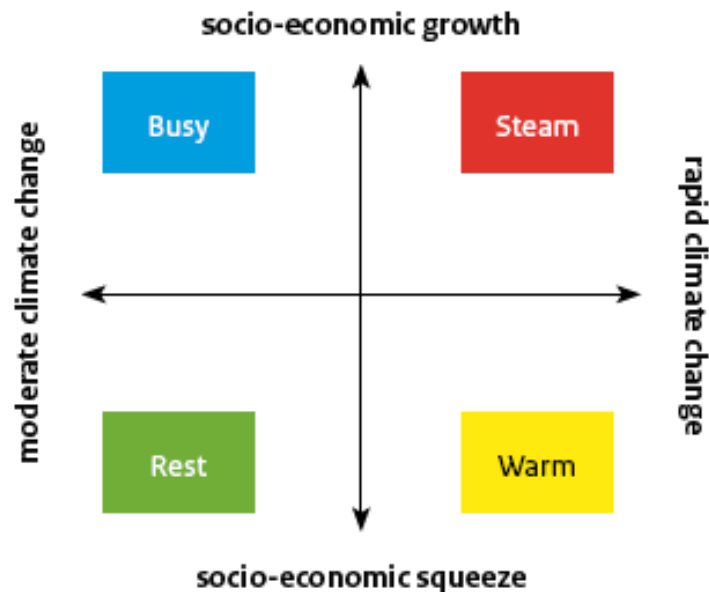
- Safe, now and in the future
- Fresh water supply guaranteed, also in drought
- Climate proof urban environment

3 sources of uncertainty

- Future developments ("pressure")
- Lack of knowledge ("effects", system behavior)
- Implementation



a) Future developments: scenario's and ADM



Water challenge scenario's

- Climate change
 - sea level rise,
 - river discharge,
 - rainfall,
 - evaporation
- Socio-economic developments
 - population,
 - economy,
 - land use/urban development



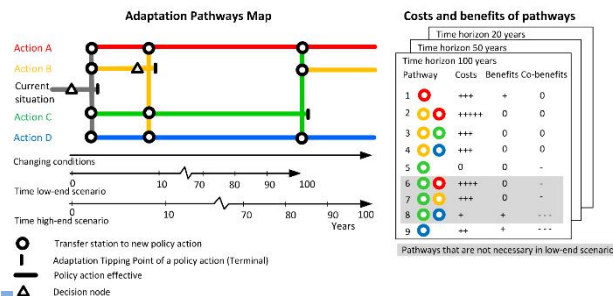
→ Adaptive strategies, flexible measures



Do what is necessary now, keep future options open:

“too little, too late” vs. “too much, too early”

- Link short term investment decisions with long term water challenges
 - Long term design horizon, “avoid regret”, spatial reservations
- “Adaptive strategies” (vs “end situations”)
 - Able to speed up / slow down
 - Flexible measures (“Building with Nature”)

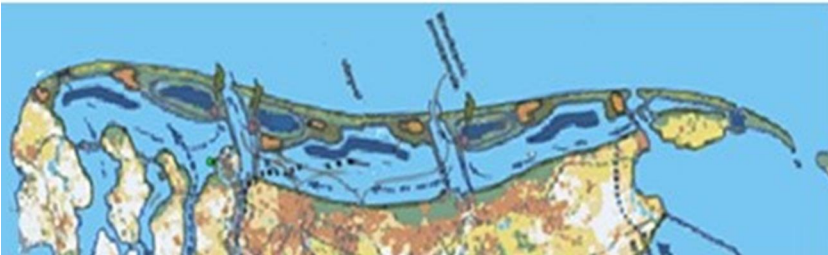




b) Lack of knowledge

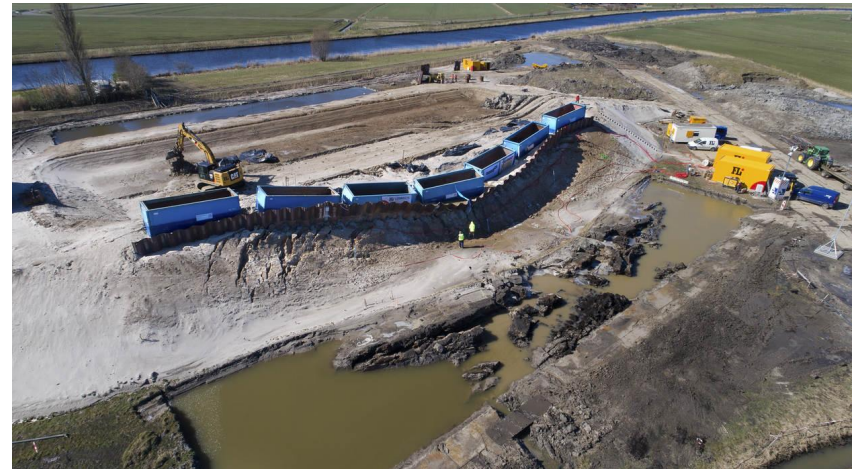
Lack of knowledge

- Large and local (time and space) scale system behavior
- Effect of interventions
- Costs, benefits



Solution

- Research, field pilots
- Include a safety margin in design (“freeboard”)
- Include redundancy in measure (manual operation of barrier)





Tools to support decision making



- Uniformity in data, basic principles and model software
- Accepted by stakeholders
- Explicit and transparent
- Iterative and Reproducible



c) Commitment & continuity → future-proof implementation



Multi-governance setting and stakeholder involvement, JFF
→ commitment

Institutional arrangements:

- Delta Act
- Delta Fund (1 bln euro/yr)
- Annual progress report to Parliament
- Delta Commissioner
- Strong implementing agencies
- Involvement of innovating private parties and knowledge institutes
- Monitoring & Evaluation



Monitoring & Evaluation

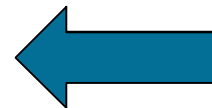
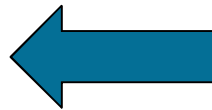
DP-regions and themes:

Implementation
+ Annual progress report

Periodic review (2020, 2026, ...) of regional strategies regarding:

- New developments
- New techniques / innovations
- New knowledge

- decide to adapt strategy
- accelerate / slow down
 - change to other strategy,
 - develop new strategy,
 - research



Signalgroup:

Annual report on DP-wide relevant

- new developments in land use,
- new knowledge,
- changes in societal preferences

Advice on issues to be addressed in 6 yr. review:

- Accelerated sea level rise (+2 – 3 m in 2100)
- More frequent / prolonged droughts
- Increasing rainfall intensity
- Urban growth vs. decline regions



Advice Signalgroup on accelerated sea level rise (SLR):



Reduce uncertainty by:

- Monitor actual situation Antarctica and SLR(worldwide + Dutch coast)
- Start research programme on:
 - Relationship CO₂ - temperature, collapse Antarctic land ice, SLR
 - Relationship SLR- Dutch coastal systems (shoreface, intertidal areas/wetlands, flood defences/storm surge barriers, salinization, pumping)

Start to be prepared by:

- Explore effect SLR on life time present infrastructure and opportunities to increase their life time
- Explore alternative Long Term strategies and measures and what is necessary on short term to keep LT options open.
- Include uncertainty in SLR in decision making and design of short term infrastructure investments



The Deltaprogramme makes
uncertainty manageable