nordwest2050

LAND AVAILABILITY AS A LIMIT TO CLIMATE ADAPTION IN THE ENERGY AND FOOD SECTOR: NEW APPROACHES TO OVERCOME LAND USE CONFLICTS

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northwest2050 – sectors and areas

Sectoral approach:

- Energy
- Agriculture
- Harbor and logistics

Climate adaptation innovation paths:

- Regulation of land use conflicts
- Transformation in energy and agricultural sector

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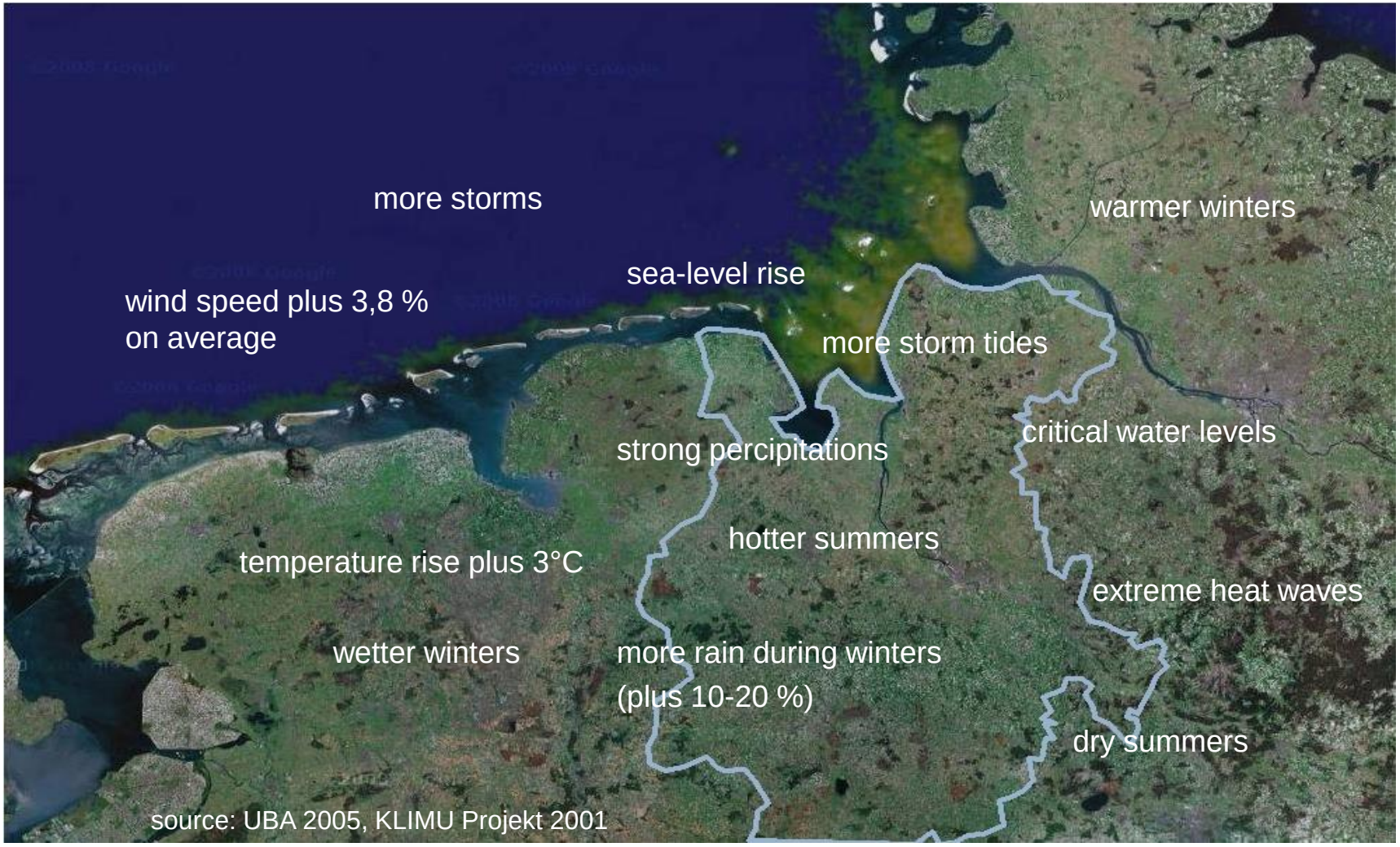
Climate impacts until 2100



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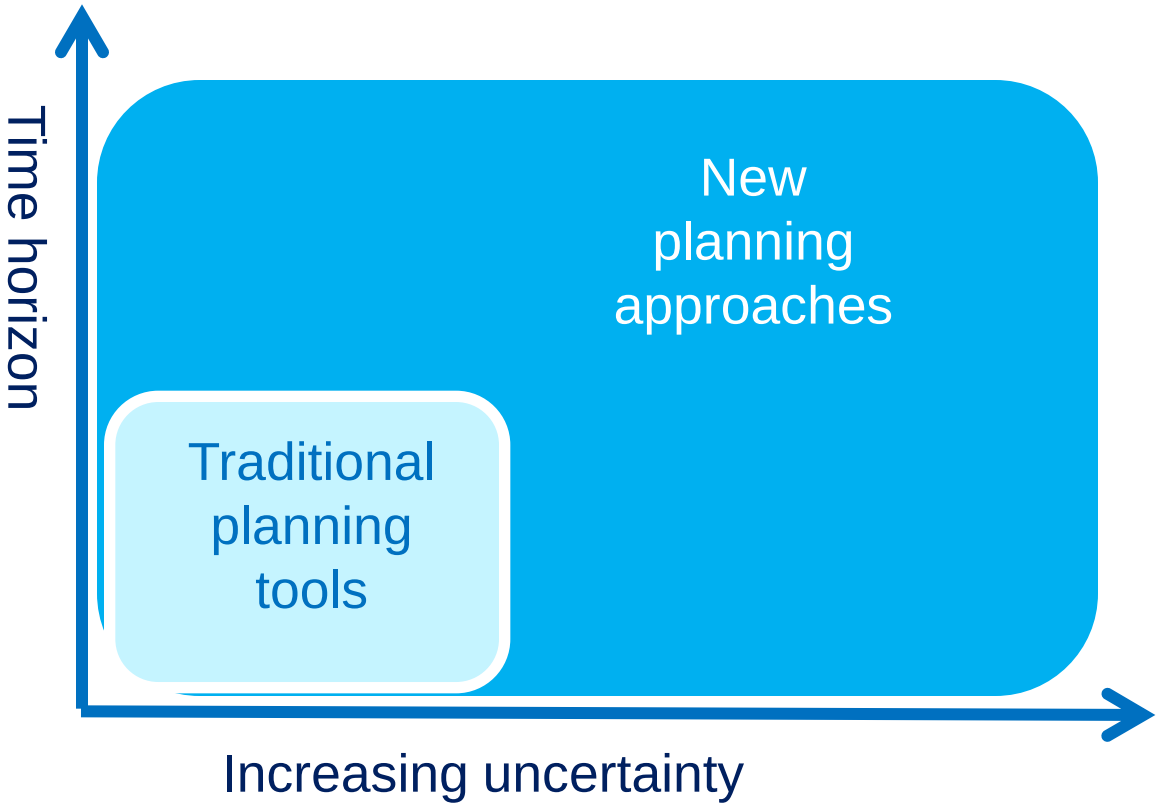
Challenges facing climate change and adaptation: planning perspective



- understanding and managing complexity and uncertainty is greatest challenge
- Traditional linear planning and decision making methods are unlikely to be effective
- Mismatches between long-term uncertainties and short time planning horizons cause problems for climate adaptation measures

Figure: Biggs et al. 2011, modified

Challenges facing climate change and adaptation: land use perspective

Transformation energy sector

- Increasing production of renewable energy
- Expansion up- and downstream energy infrastructure

Transformation agriculture

- Intensive industrialized production vs. Sustainable production
- Energy vs. Food production

Land use

- Impacts i.e. climate warming, sea level rise, extreme weather conditions
- Long term uncertainties

Climate change

- Technical adjustments
- Space consuming measures

Climate adaptation

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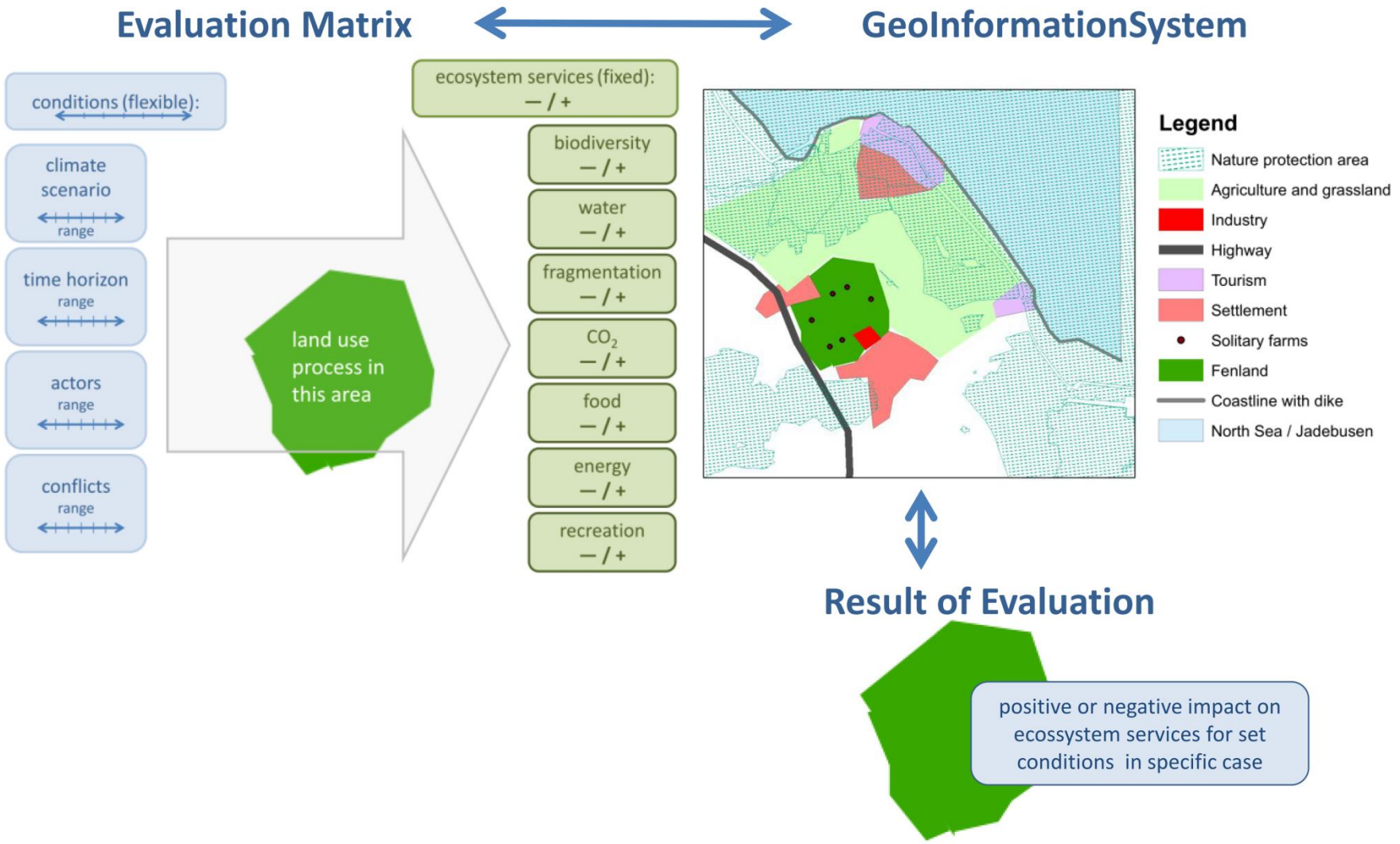
First conclusions....

- These so far described transformation processes and challenges have direct or indirect impacts on land use
- Local and regional stakeholders face a high complexity of issues that span across spatial, temporal, institutional, sector and thematic boundaries
- Risk to make decisions that may be wrong in future under the perspective of climate change and climate adaptation measures
- Need to capture the complexity and reveal feasible options for specific cases in a methodical approach and support local and regional stakeholders

Methodical approach I: Ecosystem services

- With the decision on changing land use the ecological value of the land is affected ether positive or negative
- Ecosystems and natural resources provide material, non-material, supporting, regulating and cultural services
- aim is to look at land the way that ecosystem services for climate adaptation are secured
- Show local and regional stakeholders long term consequences for ecosystem services in respect to climate adaptation and integrate them into decisions on land use
- Ecosystem services as one methodical approach for the definition of indicators

Methodical approach II: development of indicators



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Conclusions and next steps ...

- climate adaptation issues require flexible and adjustable dealing with uncertainty and changing conditions → focus on flexible, temporal or multifunctional land use
- The tool allows to describe where problems could arise if certain decisions were made
- Helps to discuss land use decisions under the perspective of climate mitigation and climate adaptation
- values ecosystem services and their role in adaptation process to climate change

- Next step is to fill the methodical approach with life

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Thank you!

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