From science to robust policy making:

Managing uncertainties and reputational risks in climate change adaptation plans in England

Dr. Christian Kuhlicke

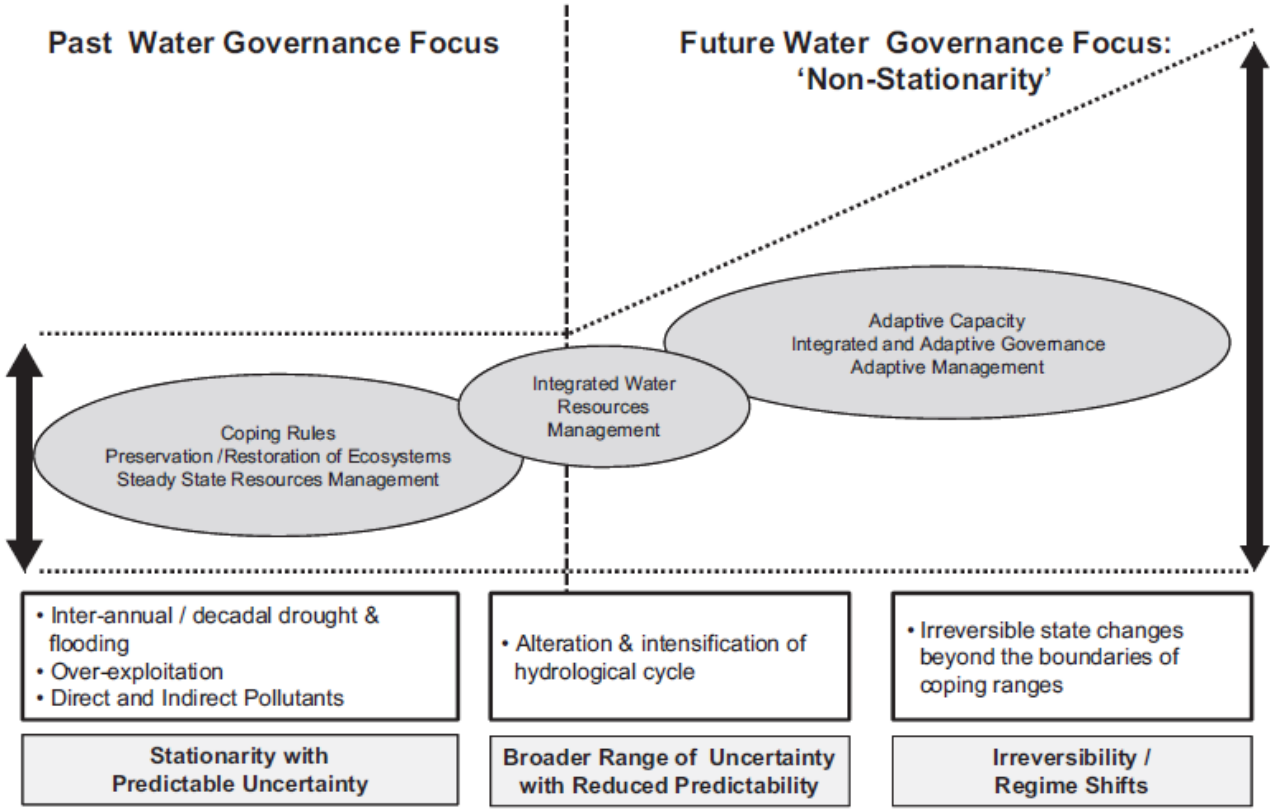
Department of Urban and Environmental Sociology

World Water Congress, Special Session 34:
Incorporating the Science Evidence Base into Water Policy and Law
27.05.2015, Edinburgh

Helmholtz-Centre for Environmental Research – UFZ
Permoserstraße 15, 04318 Leipzig

Christian.kuhlicke@ufz.de

HELMHOLTZ
CENTRE FOR
ENVIRONMENTAL
RESEARCH – UFZ



- Flexibility,
- Iterativity,
- Connectivity
- Subsidiarity

Hill Clarvis, M.; Allan A.; Hannah, David M. (2014) Water, resilience and the law: from general concepts and governance design principles to actionable mechanisms; Env Scie & Policy

- Administrative-organisational challenges in using uncertain climate science by following an adaptive management approach?
- Interconnectedness with institutional context?

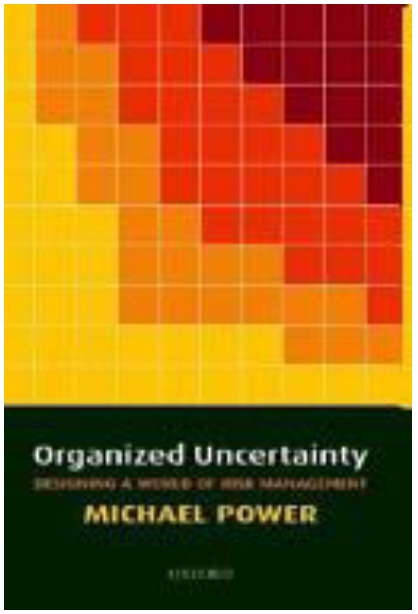
HELMHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH – UFZ

The disposal of the Brent-Spar and the raising awareness about reputational risks

- Shell planned to dispose the Brent Spar oil storage buoy in 1995 in the deep Atlantic
- Greenpeace and other NGOs managed to organise a global protest against Shell that severely undermined the reputation as well as its annual turnover
- Meanwhile many business companies as well as organisations have made reputational management an explicit effort of their organisational structure and made it an objective of corporate management itself

HELMHOLTZ
ZENTRUM FÜR
UMWELTFORSCHUNG
UFZ

Michael Power (2009) Organized Uncertainty: Designing a world of risk management



- Shift from government to governance: risk managing organisations need to act in an institutional environment that is shaped by the demands and expectations of a plurality of actors

- Pressure to be more open and responsive to external voices than previously science-based risk management thinking

- Stakeholder can become a managerial 'dread factor' and an explicitly recognised source of risk for organisations responsible for risk management

⇒ Organisations are therefore increasingly engaged with managing second order reputational risks and this potentially at the expense of first order risks

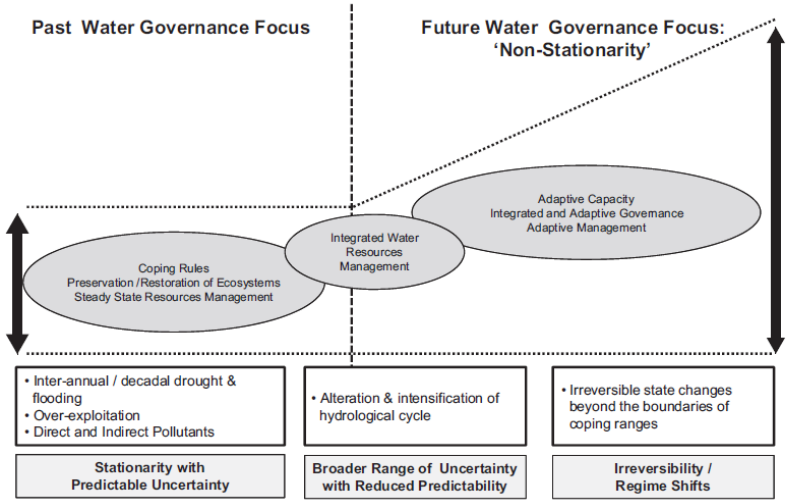
Henry Rothstein et al. (2006) A theory of risk colonization: The spiralling regulatory logics of societal and institutional risk, *Economy and Society*

Assumptions for the study

1. Organisations involved in managing the long-term consequences of CC are highly aware of reputational risks and try to manage and contain them ex-ante

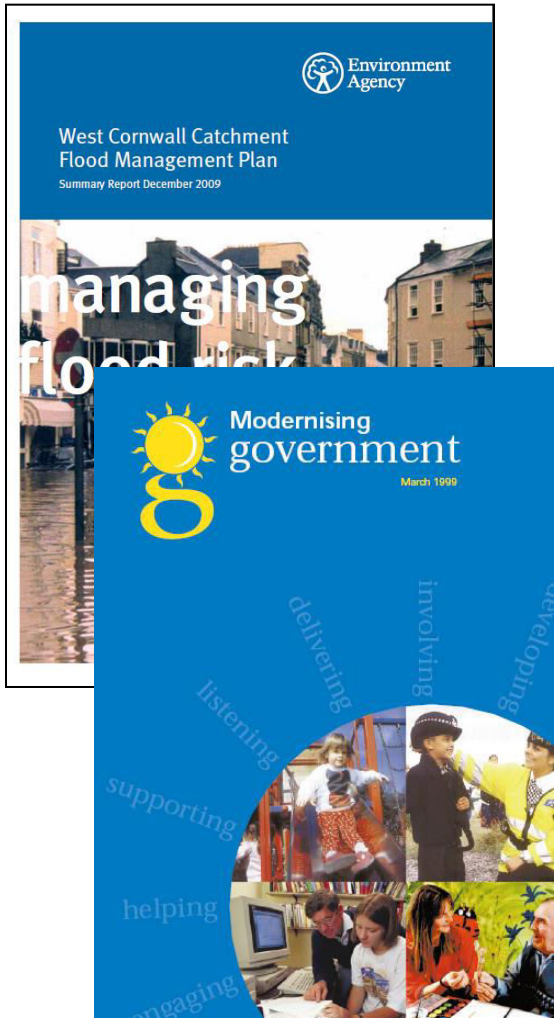
2. Using uncertain climate science is “risky” for involved organisation

3. Adaptive management might amply reputational risks because it adds institutional complexity



HELMHOLTZ ZENTRUM FÜR UMWELTFORSCHUNG UFZ

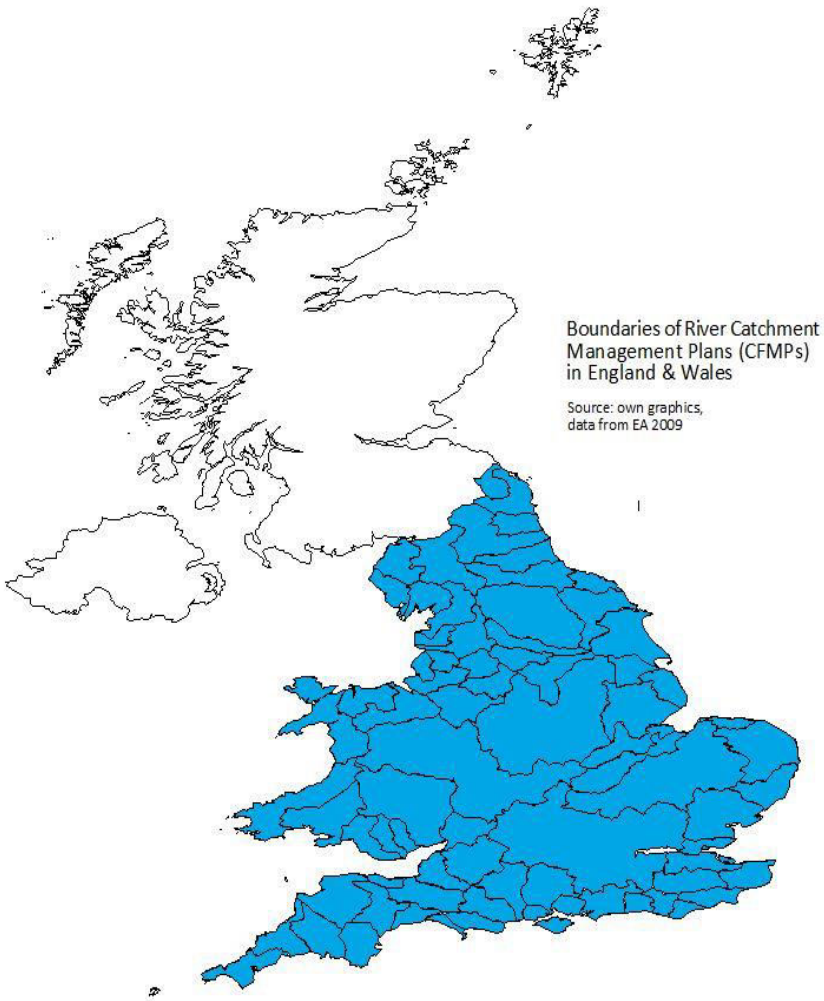
The case study – flood and coastal erosion management in England



- Long-term strategic management approach (2100) √
- Consider the possible effects of climate change √
- Risk-based management approach √
- Adaptive management approach √
- Call for inclusive decision-making √

HELMHOLTZ ZENTRUM FÜR UMWELTFORSCHUNG UFZ

The case study – flood and coastal erosion management in England



Flood and coastal erosion management

Organisational actors

- UK CIP – *UK Climate Impact Prgramme* – provides the science
- DEFRA - *Department of Environment, Food, and Rural Affairs* – translates science into policies
- EA - *Environment Agency* – implementation, advising, consultation
- LA - *Local Authorities* - "*lead agency*"

Strategic plans

- CMFP - Catchment Flood Management Plan (77 in total)
- SMP - Shoreline Management Plans (22 SMP)

Planning documents

- SFRA - Strategic Flood Risk Assessment (350 communities)

Methods

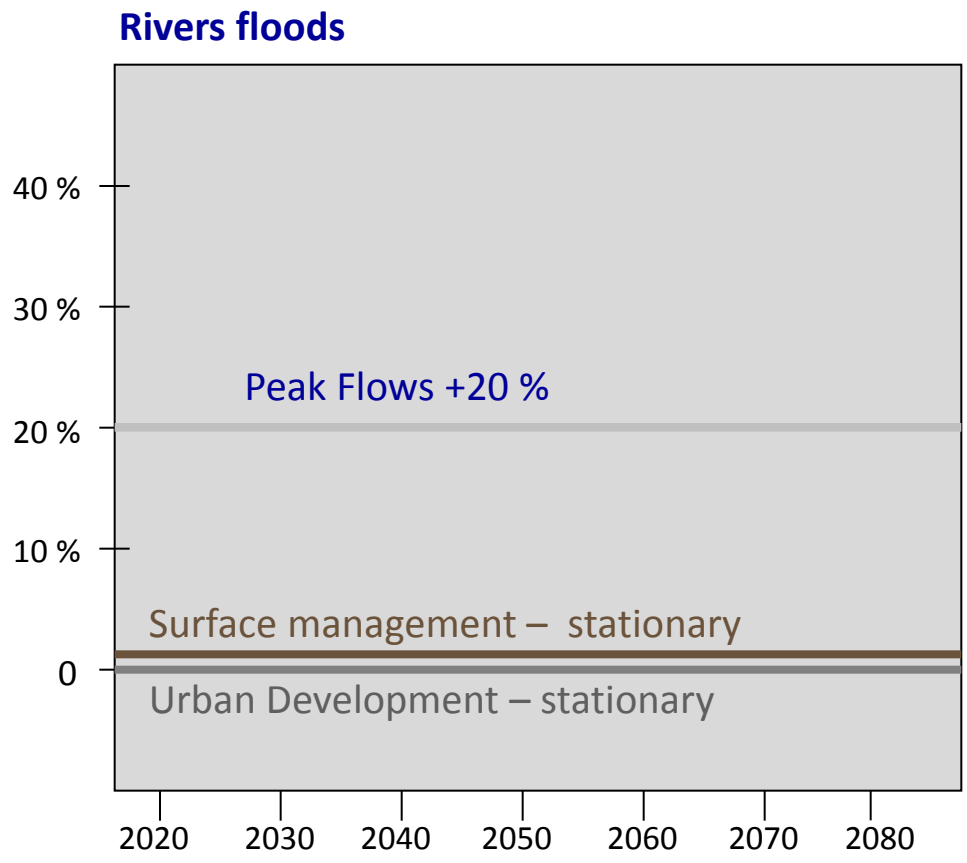
- Interviews conducted in 2011

Science (11)	▪ Climate projection ▪ Impacts ▪ Adaptation
Strategic planning (5)	▪ Strategic and long-term planning
Operational level (10)	▪ Implementation ▪ Community engagement

- Document analysis

- How are uncertainties transformed into risks
- Institutional and organizational challenges?
- Reputational risks

HELMHOLTZ ZENTRUM FÜR UMWELTFORSCHUNG UFZ



Framing in guidance documents, by scientists and strategic policy-makers

- **Enormous uncertainties** with regard to the physical processes (meteorological, hydrological, land use, soil moisture, etc.)
- Because of lack of knowledge: "*pragmatic approach*" (DEFRA 2006)

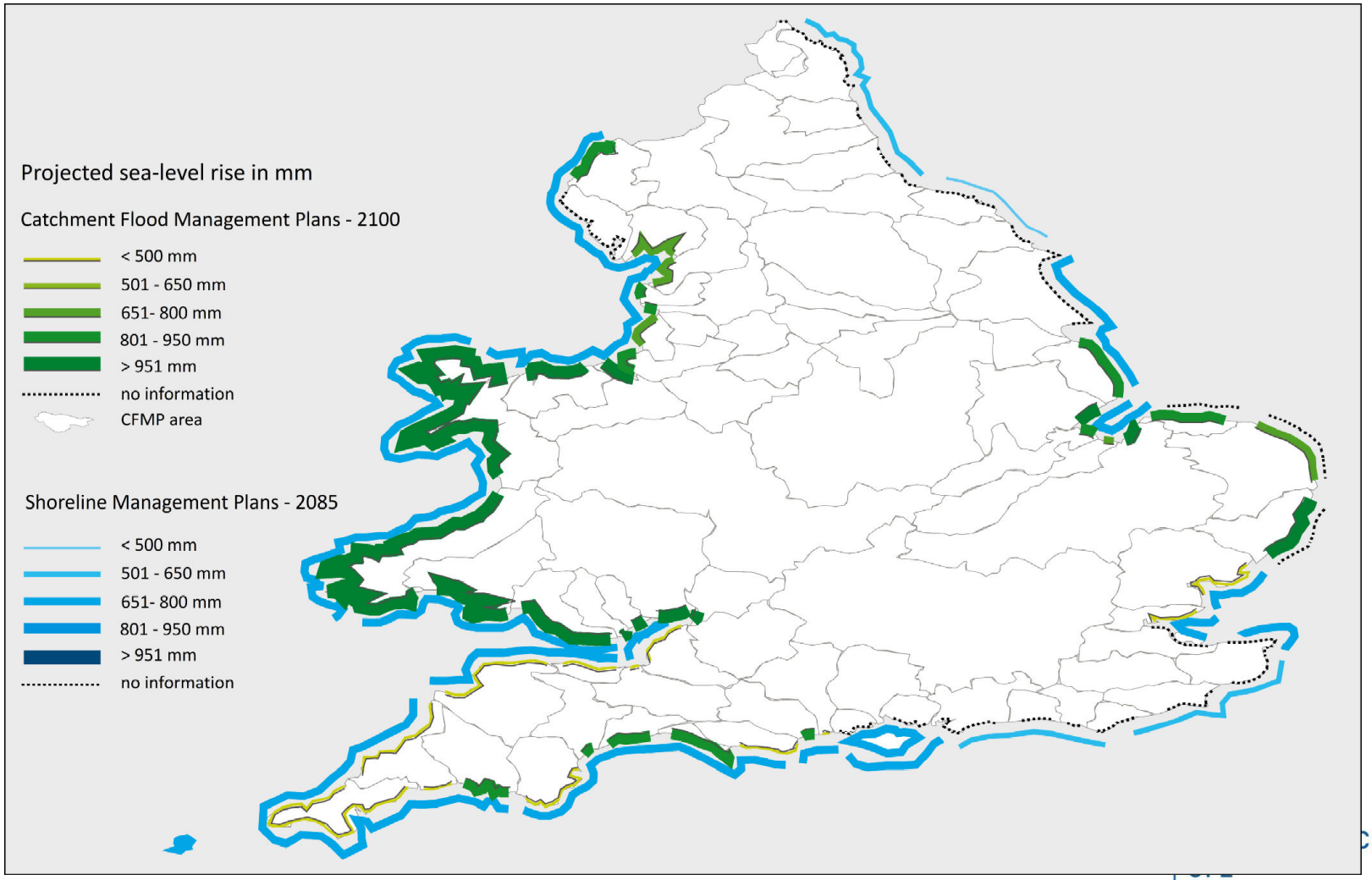
Framing on the operational level

- **Validity** of 20 % number **not questioned**
- Reference to institutional framework ("we got the number and work with it")

⇒ Allows delegation of responsibility and potential reputational risks

The Institutional Geography of Adaptation:

Shoreline Management Plans & Catchment Flood Management Plans



How are uncertainties transformed into risks?

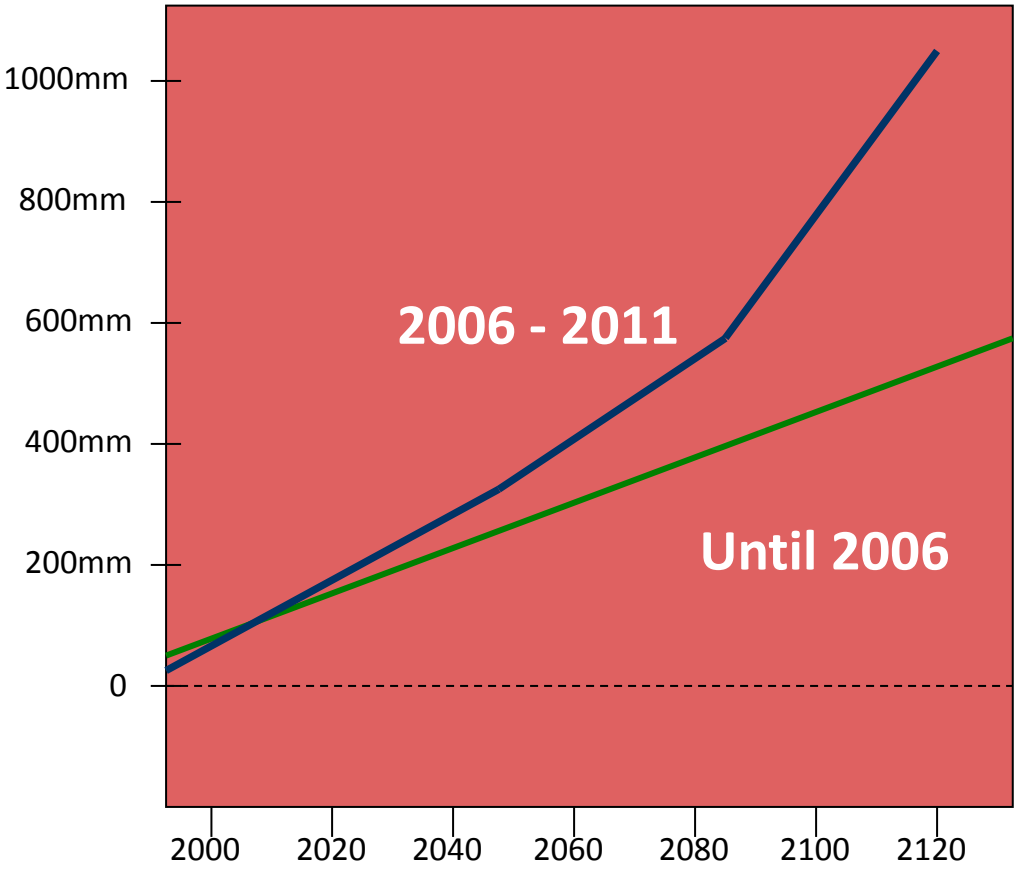
⇒ Shoreline Management Plans & Catchment Flood Management Plans

Area	**Expected sea-level rise (2080)**	Based on
West Cornwall	**500 mm**	FCDPAG1 2001
Hampshire Avon	**500 mm**	FCDPAG1 2001
Frome and Piddle	**500 mm**	FCDPAG1 2001
South Devon	**500 mm**	FCDPAG1 2001
Parett	**500 mm**	FCDPAG1 2001
North Devon	**500 mm**	FCDPAG1 2001
Mid Summerset	**500 mm**	FCDPAG1 2001
Tamar	**900 mm**	FCDPAG3 2006
Dorset Stour	**925 mm**	FCDPAG3 2006
East Devon	**950 mm**	FCDPAG3 2006
West Dorset	**950 mm**	FCDPAG3 2006
Exe	**950 mm**	FCDPAG3 2006
Bristol Avon	**1000 mm**	FCDPAG3 2006

- Same coast line, very different projectsion of sea leel rise until 2100
- New guidline published in 2006 considers new «climate science» (UK CIP)
- Creation and up-dating of CFMPs and MPs and consideration of new «climate science» are not going hand in hand

How are uncertainties transformed into risks?

⇒ Shoreline Management Plans & Catchment Flood Management Plans



Framing in guidance documents, by scientists and strategic policy-makers

- *"evidence base has improved leading to **greater certainty**"* (DEFRA 2006).

Framing on the operational level

- Greater sensitivity to underlying uncertainties (geology, erosion rate, etc.)
- Changing sea-level rise causes problems
- High public pressure ("managed realignment"

⇒ Greater sensitivity to reputational risks

HELMHOLTZ ZENTRUM FÜR UMWELTFORSCHUNG UFZ

Summary and conclusion

- Increased certainty in climate science does not automatically lead to more certain policy outcomes
- Solid science basis not necessarily decisive for robust policy-making
- Flexibility is risky! Needs to be accompanied by a strong regulatory framework (i.e. specific policies on procedures, objectives, etc.)
- Iterativityis risky! Timeframe for up-dating policies (new scientific insights) need to consistent across sectors and scales

  $\Rightarrow$ Still: high stakes, high pressures

$\Rightarrow$ Step-wise-introduction of adaptive management ideas into existing policies might help to reduce reputational risks and hence increase the credibility of adaptive management in the long-run

HELMHOLTZ ZENTRUM FÜR UMWELTFORSCHUNG UFZ

Acknowledgment

Marie-Curie Fellowship (2011/2012)

Prof. David Demeritt

Department of Geography, King‘s College, London

HELMHOLTZ
ZENTRUM FÜR
UMWELTFORSCHUNG
UFZ