

**Systematic and transparent
exploration of scenario spaces:
Socio-economic scenarios for local
climate change adaptation**

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Starting points

- 1. The local, regional or sectoral level is the starting point when constructing socio-economic scenarios. (c.f. e.g. downscaling of global change scenarios)**
- 2. A specific set of scenarios is constructed for each specific planning situation, and if necessary the national level is described from the point of view of the actual focal issue.**

How do we construct scenarios?

Requirements on scenarios:

- 1) Each scenario should be relevant
- 2) Each scenario should be plausible
- 3) Each scenario should be challenging

N.B.: These are requirements on *individual* scenarios.

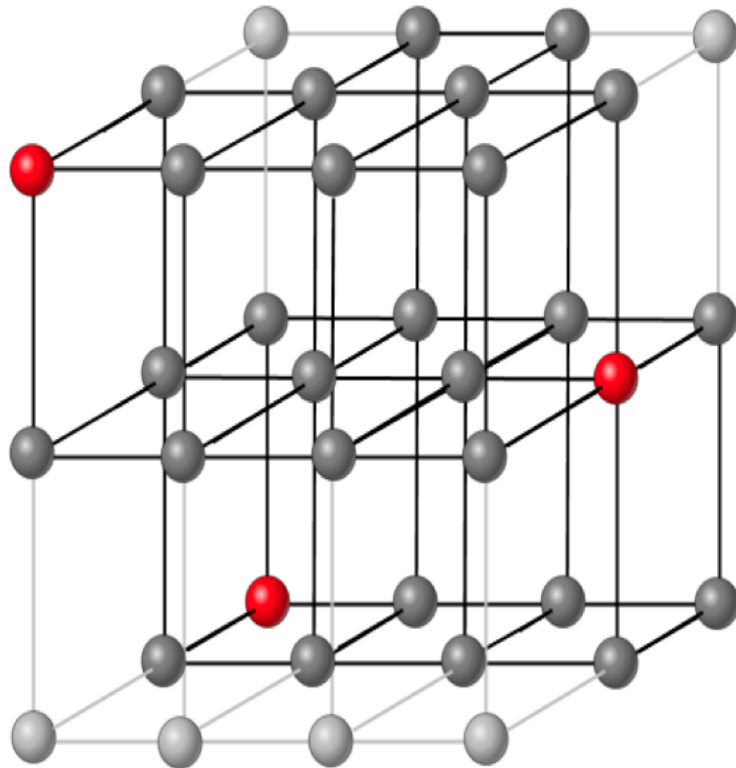
In planning situations with deep structural uncertainty it is of primary interest to explore the outer limits of the relevant socio-economic uncertainties.

Add a fourth requirement: The *set* should span the range of relevant uncertainties.

The idea:

Develop a methodological framework which systematically and transparently combines socio-economic driving forces and maximally span the relevant uncertainties.

A simple 3D example of a 'maximally' spanning set



In higher dimension this is very tricky. We have therefore developed a supporting software tool.

Exemplifying via the well-known SRES

Driving forces

Population growth	Economic development	Energy use	Land-use change	Resources availability	Tech-nological change	Future energy system
Low (0)	Medium (0)	Low (0)	Low (0)	Low (0)	Slow (0)	Coal, oil, gas
Medium (1)	High (1)	Medium (1)	Low-medium (1)	Medium (1)	Medium (1)	Balanced
High (2)	Very high (2)	High (2)	Medium (2)	High (2)	Rapid (2)	Non-fossils
		Very high (3)	Medium/high (3)			Regional
			High (4)			Efficiency
						"Dynamics as usual"

States



... and the distances are:

	A1B	A1FI	A1T	A2	B1	B2
A1B						
A1FI	3					
A1T	3 (11)	4				
A2	2 (11)	4 (9)	11			
B1	12 (9)	12 (9)	11 (9)			
B2	11	11	10	8		
	11 (9)	11 (9)	10 (9)	8 (11)		
	9	9	8	6	7	
	9 (9)	9 (9)	8 (13)	6 (9)	7 (9)	

The average distance between any two SRES scenarios amounts to only 80 percent of what is maximally possible.

Conclusions

The methodology is not suitable for all planning situations.

Scenario-building should not become a mechanised practice, but combining our tool with more qualitative approaches would reduce the problem of too little variation in scenario sets.

The tool will stimulate scenario developers to consider other combinations of states, i.e. other socio-economic scenarios, than those felt most natural to them.

Thank you!