

Institutions and Adaptive Capacity

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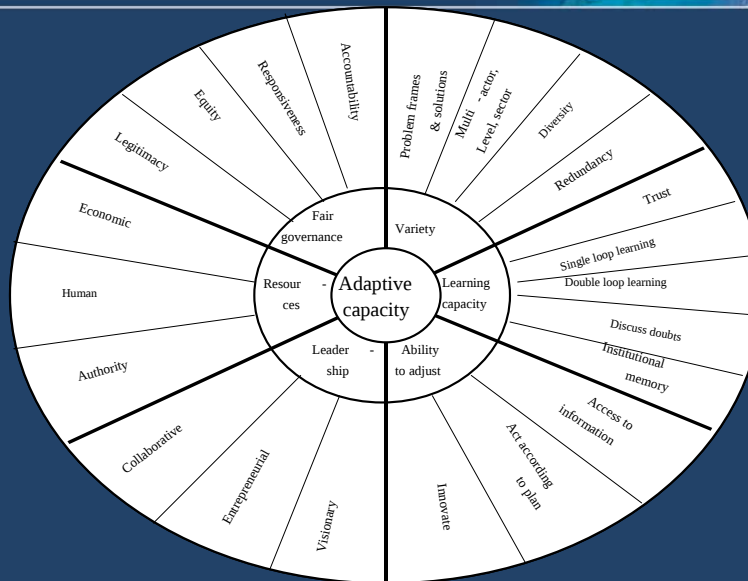


Adaptive capacity: definition

- Adaptive capacity in relation to institutions:
 - The extent to which institutions enable actors to adapt to climate change
 - The extent to which the institutions themselves can be changed by actors in order to adapt to climate change



Adaptive Capacity Wheel



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Adaptive capacity wheel: its role in the literature

- Adaptive capacity of countries (ranking system; quantitative).
- Adaptive capacity of households (ranking system; quantitative).
- So far: nothing in between: Our ACW contributes here.
- Question: can it somehow be used to link national with household level?



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Challenges in the wheel

- Through regular application of the wheel and discussions, duplications have been removed from the discussions.
- Some criteria may be confusing to the outsider, but clear definitions can address these: (a) difference between legitimacy and authority; (b) difference between single and double loop learning; (c) difference between multiple problem frames and diversity.
- Some dimensions may appear to contradict each other: e.g. leadership and variety – this calls for careful qualitative analysis on a case by case basis
- Some dimensions may always lead to specific outcomes. Eg the lack of resources may always imply poor adaptive capacity, but the issue is to assess this in a relative manner and to point to the potential for change. The lack of fair governance may imply poor adaptive capacity; however. Alternative systems of governance may be compatible with enhanced adaptive capacity. .



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ACH: Qualitative or Quantitative

- Qualitative
 - Indicates areas of strength which can be further built upon.
 - Indicates areas of concern; not necessarily weakness.
 - The concern may not be critical to the adaptive capacity of the institution
 - But if it is, it needs attention



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Qualitative

Advantages

- Allows for evaluation of issues that are not necessarily measurable in numbers;
- Allows for a certain amount of subjective expert judgment about, e.g. what constitutes leadership in specific contexts.

Disadvantages

- Not easy to compare different institutions
- Not easy to apply when there are a large number of institutions to be assessed
- Does not appeal to those who lean towards quantitative approaches.
- Cannot deal with internal qualitative tensions.

Qualitative: Use of a colour spectrum

- Interpretation of colours is in line with traffic light colours and is easily interpretable
- However, while green is always ok, red can indicate weakness and this may not necessarily be the case
- Colours have something judgmental in them



Institutions enhance capacity for adaptation	Potency is present, but not fully exploited for adaptation	Neutral	Tension between institutions and adaptation needs	Institutions hinder capacity for adaptation
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Use of a grey spectrum

- Less implied value judgement;
- Less communicative;
- More easily publishable?



Institutions enhance capacity for adaptation	Potency is present, but not fully exploited for adaptation	Neutral	Tension between institutions and adaptation needs	Institutions hinder capacity for adaptation
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Qualitative application 1: Individual responsibility

Case study on individual responsibility in Dutch local water management in different contexts to identify context-specific as well as non-contextual challenges to increase the adaptive capacity of society



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Individual responsibility in adaptive capacity

Case study on local level: individual responsibility in Dutch local water management.

Background: Key element in adaptation policies is a shift in responsibility from the state to the individual

Recent regulations in the Netherlands emphasize responsibilities for local water management; studies show the division in responsibilities is problematic.

Question: How do institutions regarding the changing allocation of responsibilities between public sector and individual affect the adaptive capacity in different contexts (cities; rural areas)?



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Individual responsibility in adaptive capacity

The division in responsibilities for Dutch local water management in short:

Individuals: safeguard own property from water problems

Municipalities: public sewer system and spatial planning

Water boards: management of surface waters

Problem: it is often unclear who is responsible for causing and solving water problems



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Individual responsibility in adaptive capacity

Three case study regions:

Municipality of Zaanstad, city of Zaandam: built environment, city extensions and restructuring of inner city

Municipality of Delft: built environment, historic inner city, rich history in water management

Polder De Wijde Wormer: small rural area, farming, water retention area

Method: 19 in-depth interviews with local stakeholders in which they were asked for their opinion on each of the dimensions of Adaptive Capacity Wheel



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Individual responsibility in adaptive capacity



Zaandam

De Wijde Wormer



Delft



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Individual responsibility in adaptive capacity

Non-contextual challenges to adaptive capacity

- Water problems will become structural in character. Clearly defined responsibilities will increase the ability to act on responsibilities.
- There is an overlap in responsibilities between the municipality and the individual in the case of water nuisance. This should be recognized.
- It is difficult to establish accountability procedures for groundwater problems because they are invisible, causal links are difficult to establish and individuals have no easy access to information. Municipality as 'information bureau' could help.



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Individual responsibility in adaptive capacity

Contextual challenges to adaptive capacity

- In cities, many parties are involved in and influence water management, and water management is not part of residents' daily activities. Therefore, they attribute a great deal of responsibility to their municipality.
- In De Wijde Wormer, water is integral to the farmers' existence and there is only a small number of actors involved in water management. They are more willing to accept their responsibility and a horizontal approach is more suitable.
- In areas with a long history of dealing with water problems (Delft, De Wijde Wormer), residents are more willing to accept the complicated nature of water management and more accepting of governmental decisions.



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Quantitative Application : Content Analysis

	Policy / strategy	Law / regulation	Total 93 documents
Inter-national		10	10
National climate	13	6	19
Agriculture	6	11	17
Nature	2	7	9
Water	12	14	26
Spatial pl.	3	9	12



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Results of the inventory

- Documents before 2001 do not take climate into account, after 2001 they often do
- Institutions within one sector have a similar style of governing
- Selection of 23 typical documents
 - overarching character
 - influential
 - recent



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The coding system

<i>green</i>	<i>lime</i>	<i>light yellow</i>	<i>light orange</i>	<i>red</i>	<i>white</i>
Institutional structure enhances adaptive capacity for adaptation	The structure exists, and could but is not (yet fully) applied to adaptation	Neutral score (positive nor negative effect expected)	Gap that needs to be filled to counteract negative effect on adaptive capacity	Institutional structure obstructs adaptive capacity for adaptation	Unknown (no information available to apply a score)
Score 2	Score 1	Score 0	Score -1	Score -2	No score



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Aggregated scores and colours

Total	Overall
4 or more	18 to 42
1 to 3	6 to 17
0	-5 to 5
-1 to -3	-6 to -17
-4 or less	-18 to -42



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Quantitative Application to Content Analysis

Issue	Instrument	Score
Climate /general	UNFCCC, 1992; Kyoto Protocol 1997	22
	EU Whitepaper on adaptation	23
	National Adaptation Strategy: make space for climate!	19
	Strategy National Safety and National Risk Assessment	13
Nature	Convention on Biological Diversity	20
	Natura 2000 and the Birds and Habitats Directives	-11
	Ecological main structure	1
	Law for the Protection of Nature	-3
Water	Flora and Fauna Law	-10
	EU Framework Directive on Water	19
	EU Directive on Flood Risks	22
	National Agreement on Water	23
Agriculture	National Water Plan 2008	28
	Policy Guideline Large Rivers	18
	Water Law	22
	Water Test	12
Spatial planning	Common Agriculture Policy (CAP)	7
	Agenda for a Living Countryside - Multi-year programme 2007-2013	21
	Law on Land Use in Rural Areas	25
	New agrarian insurances	13
Spatial planning	National Spatial Strategy	16
	Spatial Planning Act	17
	Strategic Environmental Assessment	16



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Quantitative approaches

- Clear coding system is needed to ensure transparency
- Common interpretative rules are needed
- Iterative process to ensure consistency of application.



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Quantitative: Advantages and Disadvantages

Advantages

- Allows for aggregating information about specific institutions
- Allows for comparing different institutions
- May reveal common elements in specific types of institutions

Disadvantages

- Loss of detail
- Aggregation cancels out contradictory values
- The greater the degree of aggregation, the greater the chance of losing both detail but creating non-sensical results!!



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Applicability of scheme: ACH

- Can be applied in understanding how specific rules are interpreted in specific contexts (case study Delft, Zaandam en Wijdewormer)
- Can be applied to assess legal and policy documents – I.e to a content analysis
- But the question is can different assessments be aggregated to a national level? Would that be nonsensical? Or should one undertake a national assessment and compare that with an aggregated assessment and see how they look?



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Assessment of Adaptive Capacity Wheel

- It is a useful communicative tool whether in colour or in shades of grey (and both can be applied)
- It can be used qualitatively and quantitatively; however, caution is advised against too much aggregation.
- Its quality depends on the quality of a robust code for assessing and interpreting data collected. This guarantees transparency if not complete objectivity.
- It can generate robust results as the results tend to match the intuitive expectations of experts in each of the specific fields; but such a testing process is essential to its robustness as well..



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Future of the Adaptive Capacity Wheel

- Can this be linked to the adaptive capacity tools at national and household levels?
- How far can the process of aggregation go? What rules can be generated with regard to aggregation?
- Should we rank the different dimensions and criteria?
- How much adaptive capacity is needed if available infrastructure is different?
- How much adaptive capacity is needed if existing institutions are more or less developed?
- How much adaptive capacity is needed if the climate change impacts are higher or lower?
- How much adaptive capacity is needed ...



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