UNDERSTANDING BARRIERS AND DRIVERS OF COASTAL PROTECTION

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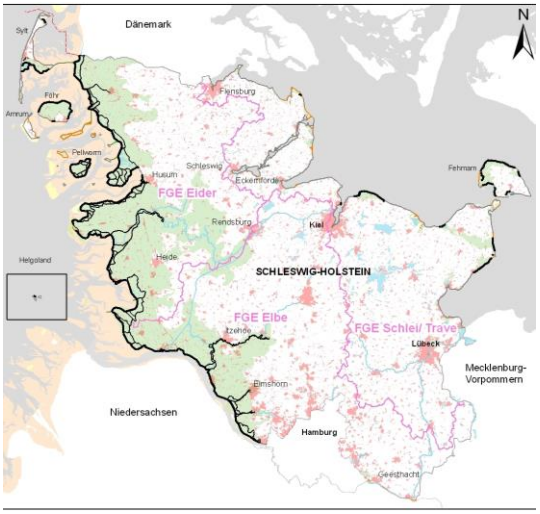
Case Background

Schleswig-Holstein

- ¼ of the territory prone to storm-surge flooding
- Lower flood hazard at the Baltic Sea coast: most destructive storm surge in 1872
- Flood risk governance: „State dykes“, „Regional dykes“ (maintained by Water & Soil Associations), no dykes/other measures (municipalities)
- Policy context: coastal protection constitutional „joint task“ for all, shift from security-based to risk-based approach
- No insurance in high-risk areas



Source: MELUR S-H (2013). *Generalplan Küstenschutz des Landes Schleswig-Holstein – Fortschreibung 2012.*

Research Questions

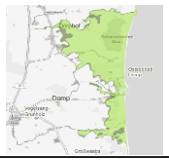
1) What explains the diversity of flood risk governance arrangements at the Baltic Sea coast in Schleswig-Holstein?
2) What enables and constrains local communities in their flood-protection efforts?

Methodology

- Institutional analysis: qualitative comparative case study research
- Key common criterion: designated risk areas (EU Floods Directive) without “state dyke”
- Data collection: semi-structured interviews, literature review
- 15 expert interviews with various stakeholders at state and community levels: incl. ministries, municipal mayors, water & soil associations, advocacy groups

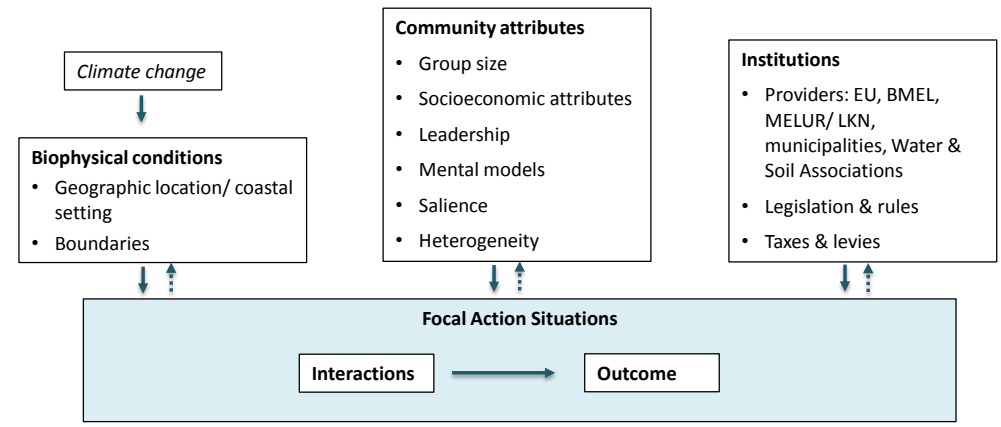
Methodology

Case Studies

Case studies	Damp	Kappeln	Behrensdorf	Strande	Eckernförde
					
Flood risk governance	Water & Soil Association	Water & Soil Association	Water & Soil Association	Municipality	Municipality
Flood defences	„Regional dykes“	„Regional dykes“	„Regional dykes“	None	None
State support	No	No	Yes	Yes	Pending (potentially yes)

Methodology

Analytical Framework



Results

Self-Governance: Water & Soil Associations

- Since medieval times, flood protection was provided by autonomous self-governed dyke associations in Schleswig-Holstein
- History of institutional change and increasing influence of the State – nationalisation of most dykes in 1971
- Baltic Sea coast: responsibility for „regional dykes“ + river maintenance, pumping stations, sewage treatment or drinking water supply
- Legal basis: Federal Water Association Act (*WVG*) - regulates organisation, tasks, organs, finances and membership
- Compulsory membership for all landowners/municipalities within the assigned territory, below individually defined contour line (fees according to area/benefit)
- Challenges: e.g. definition of beneficiaries (lawsuits); area too small and fees too low to generate enough income for dyke reinforcement and damage repair

Results

Self-Governance: Water & Soil Associations

Rural areas:

- Flood protection and drainage essential for livelihoods
- Cooperation necessity: shared costs and benefits, joint provision
- Land, financial resources and machinery to build dykes
- Small, homogeneous groups
- Leadership: large aristocratic land owners

vs.

Urban areas:

- More heterogeneous
- Different coastal setting: shoreline settlements, harbour
- Different, land-use unrelated, livelihoods (e.g. fishery, harbour management, industry) and priorities
- No clear boundaries: allocation of costs and benefits more difficult

Results

Self-Governance: Explanatory Variables

		Group size			*Hetero-geneity*	*Salience*	*Boundaries*	*Coastal setting*
Case study	**Flood risk governance**	**Population**	**People at risk***	**Paying beneficiaries**		**Conflicting interests**		**Engineering challenges**
Damp	Water & soil association	1.412	0/10/10	15	Endow-ments		Yes	No
Kappeln	Water & soil association	8.687	90/400/450	50	Interests	Nature conservation (flood barrier)	Yes	Yes
Behrensdorf	Water & soil association	620	10/40/40	65		Tourism	Yes	No
Strande	Municipality	1.486	60/90/150	0		Tourism	No	No
Eckernförde	Municipality	21.784	250/600/700	0	Interests	Tourism, use of harbour, urban development	No	Yes

* Number of residents potentially at risk with different flood recurrence probabilities: high (every 20 years)/ medium (every 100 years)/ low (every 200 years)

Results

State Support: Provisioning Levels

	Providers		**Beneficiaries**	
	Investment	Maintenance	Investment	Maintenance
Top-down: "State dykes"	100%	100%	-	-
Co-production: "Regional dykes", other defence measures	(approx. 90%)	approx. 30%	(approx. 10%)	approx. 70%

Results

State Support: Explanatory Variables

		Socioeconomic attributes of actors	*Leadership*	*Mental models*	*Salience*		*Coastal setting*
Case study	**State support**	**Financial constraints***		**Public risk perception***	**Conflicting interests**	**Interest in state support**	**Engineering challenges**
Damp	No	Yes (planning)		Unknown		Yes	No
Kappeln	No	Yes (planning, complementary costs)		High in flood-prone district, low in town	Nature conservation (flood barrier)	Yes	Yes
Behrensdorf	Yes (100%)	No		Low	Tourism	No	No
Strande	Yes (90%)	Yes (complementary costs)	Presumably key driver	High	Tourism	Yes	No
Eckernförde	Pending, potentially yes (90%)	Yes (complementary costs)		Low	Tourism, use of harbour, urban development	Unclear	Yes

* As assessed by the mayors or Water & Soil Associations

Results

Other Reported Barriers: Cooperation Between Municipalities

- Interviewees stress importance of inter-municipal cooperation and "system thinking", but joint planning challenging due to heterogeneity of interests and endowments, and transaction costs
- Collective action not always beneficial: e.g. attempts by advocacy group to ask for general reclassification of all regional dykes and more state support failed while individual negotiations of select municipalities succeeded

Conclusions

- Some communities rejected support by the state in the past (path dependence), others don't receive it
- Water & soil associations emerged in rural areas, dependent on agriculture, and not in more heterogeneous urban areas with different priorities & livelihoods, unclear boundaries and challenging coastal settings
- State support is determined by leadership, financial constraints, risk perception, conflicting interests that also impair public acceptance, and engineering challenges due to specific coastal settings
- Inter-municipal cooperation is difficult due to heterogeneous interests & endowments

Policy Implications

- Hybrid-solutions/ co-production important: State support for dyke reinforcement/ investment, maintenance community responsibility
- In light of limited public funding, priorities must be made, support criteria clearly defined, and all adaptation options considered
- Participatory planning process important to increase public acceptance
- Municipal membership in Water & Soil Associations reduces transaction costs
- Municipalities: open dialogue with residents and businesses (voluntary payment schemes, co-finance) + individual protection measures indispensable