plan Baltic

Research group „Climate Change and Spatial Development:
Adaptation strategies of urban and regional planning
in urban regions of the Baltic Sea Coast“

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Resilience as the guiding metaphor for urban regions adapting to climate change?

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Overview

A. Framing the context: research group “plan B:altic”

B. Climate change and urban regions – challenges for regional development

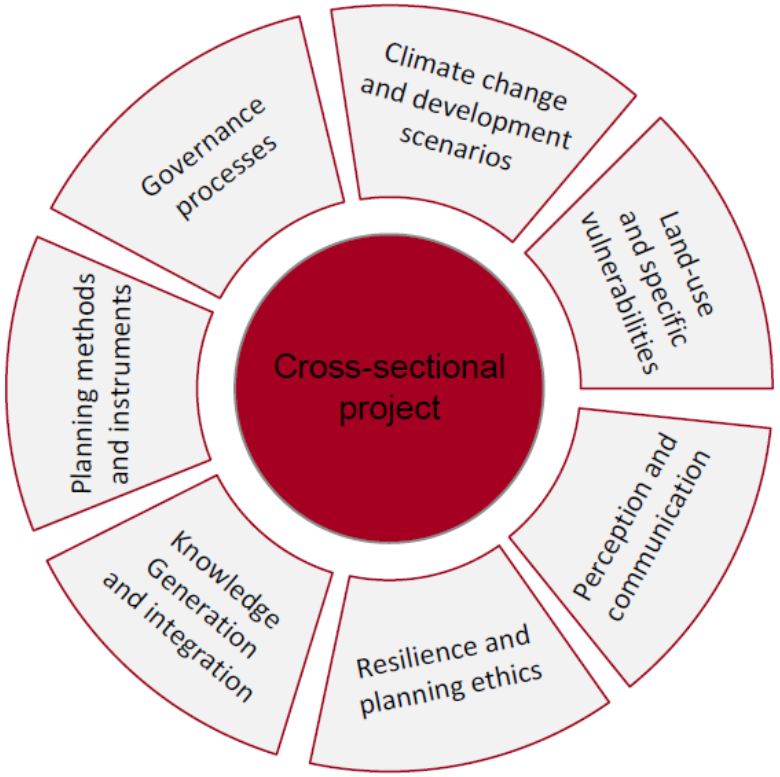
C. Resilience thinking as guiding metaphor?

D. Preliminary experiences

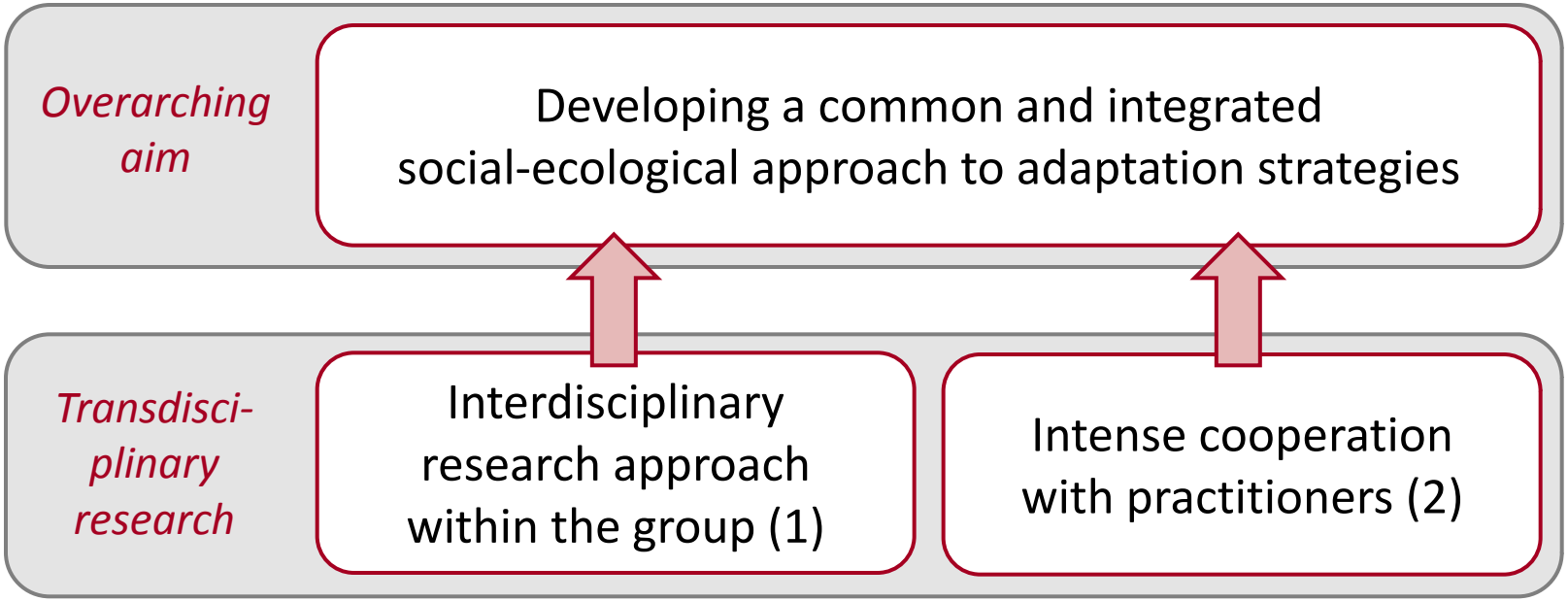
E. Conclusions

A. Context: Research Group “plan B:altic”

- Develop adaptation strategies of urban and regional planning in urban regions of the Baltic Sea Coast
- Identify and discuss solutions towards urban and regional resilience and initiate concrete processes at the local and regional level
- Interdisciplinary research group (seven researchers)



A. Research Group “plan B:altic”: transdisciplinary approach



1: Resilience as bridging concept and theoretical frame

2: Resilience also as guiding metaphor for regional development in practice?

B. Climate change and urban regions of the Baltic Sea Coast – challenges for regional development

Potential climate change (impacts)	meet urban regions	risks
Extreme weather events: storm surges, torrential rain	Compacted soils; concentration of human lives, materials assets and complex infrastructure networks	Floodings, damages to built infrastructure and whole networks
Sea-level rise (saline water)	Coastal zones as living spaces, habitats, touristic assets; freshwater reserves	Coastal ersosion; saline water entries drinking water reserves
Temperature rise, acceleration of chemical reactions	Urban heat island effect, urban air quality	Health problems

But the main challenge:

Knowledge on future climate change: scientific or historical evidence is uncertain or incomplete as well as the experience with climate change impacts, its underlying primary causes, complex cause-effect-relations and the long-term effects, also: potential nescience, local impacts especially difficult to predict, might even contradict the global trend

C. Resilience thinking as the guiding metaphor?

- Urban regions as dynamic coupled and manifold interlinked social-ecological systems, but dominated by human influences
- Resilience: The capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, identity and feedbacks”.[2]
  “Social resilience has been defined as the ability of human communities to withstand external shocks to their social infrastructure, such as environmental variability or social, economic and political upheaval.”[3] (Adger 2000)

⇒ lead a continued existence by incorporating change, stress the importance of assuming change and explaining stability instead of assuming stability and explaining change.[4]

⇒ Ability to self-organize, learn and adapt

[1)] Alberti 2009 [2)] Walker et al. 2004 [3)] Adger 2000 [4)] Holling 1986

C. Resilience thinking as guiding metaphor?

Potential opportunities and advantages of using the metaphor of “building resilience” as guiding principle for regional development

- questioning the dominant assumptions of separate systems of nature and society, linear and stable ecosystems under human control; questioning norms and habits that might put urban regions on certain paths;
- emphasis on dynamic processes of change, non-linear relationships, different spatial and temporal scales, uncertainty and surprise instead of following a command-control approach;
- nurturing diversity for resilience;
- combining different types of knowledge for learning: different disciplines, implicit (tacit) and explicit knowledge;
- multidisciplinary perspective on integrated social-ecological systems
- creating opportunity for self-organization. learning to live with change, uncertainty and surprise

C. Resilience thinking as guiding metaphor?

Shortcomings and pitfalls

Meaning of “social“- social institutions not equal to ecosystems, difficult to grasp human concepts such as trust, inclusivity, norms, and equality

Lacking broad studies on social-ecological resilience in complex settings as urban regions - variables?

How to operationalize in practice?

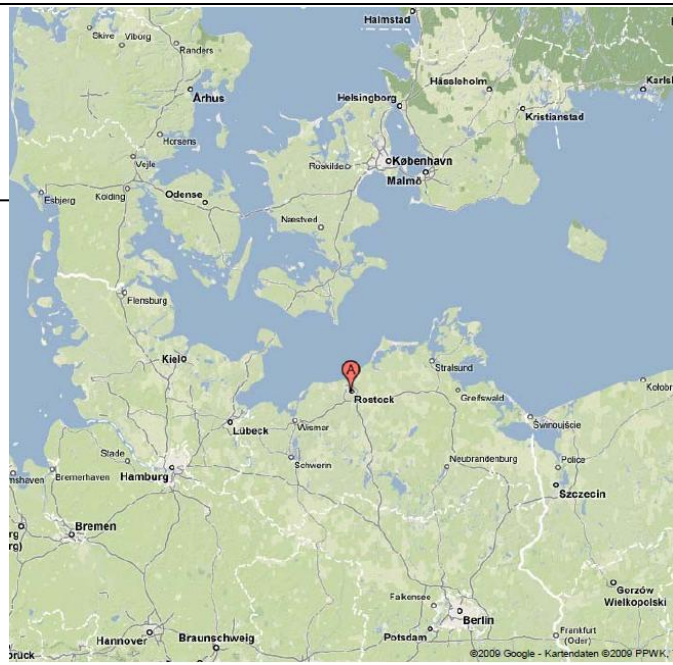
potential tensions between the different requirements of normative idea of sustainability and the adaptive flexibility to unexpected changes and nescience

D. Preliminary experiences

Intense transdisciplinary co-operation process started

urban region of Rostock - as project partners: city (urban planning and environmental department) and region (regional planning)

Rostock: > 200 000 inhabitants, Region: > 500 000; weak economical situation, population losses, land use problems



Potential climate change impacts for the Rostock region:
Temperature: increasing (summer)
Precipitation: increase in frequency and intensity of heavy rain => severe floodings; drought (summer); increase of precipitation up to 70 % at the coastline (winter)
Wind and sea-level rise: increase in heavy storms; further and severe sea-level rise, increase in storm surges => erosion and considerable increase in losses of coastline, increased flooding in estuaries

D. Preliminary experiences

Mitigation as general issue

Adaption to climate change not a topic neither for urban and regional development, just for sectoral policies following a Bundesland-approach (coastal protection)

Spatial planning regional and urban planning involved in mitigation strategies, adaptation: lacking data, scepticism on actual climate change impacts, planning of new building areas close to the river

Control and command – thinking dominating? E.g. new building area, harbour

Resilience? What could this be? Difficult to grasp, also: institutional setting hinders

E. Conclusions and further challenges

Requirements for the science-practice interface:

- Translate the idea of resilience in practice (resilience of what and whom, to what?); see resilience more as a process than as an outcome
- Discuss and develop a common understanding of „resilience“ as well as challenges, pittfalls and advantages of this approach
- make the normative questions explicit: regional development: growth / development in the forefront, with resilience other core elements and norms (uncertainty, surprise, flexibilty) – develop common aims through scenario planning?

E. Conclusions and further challenges

- Offering concrete methods and strategies for building resilience by providing more explaining research and studies in complex settings and on key variables for urban and regional resilience
- Involve all available forms of knowledge, render tacit knowledge explicit, translate existing knowledge, integrate the different knowledge forms by new institutional approaches?

Thank you!

Sources maps:
http://maps.google.de_18.02.2009
http://geoportal.rostock.de/mapbender/frames/index.php?&gui_id=GeoPort.HRO _18.02.2009

Sources photographs:
Sonja Deppisch; www.flickr.com

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B. Interdisciplinary Research Approach (1)

Elements of inter-disciplinary cooperation

Bridging Concept	– Analytical framework – *Details in section C*
Common definitions	– Common definitions of crucial terms – Fundamental for work in the group and with practitioners
Constellation analysis	– Interdisciplinary method to integrate results from different scientific disciplines – Visualization of concepts, single empirical results in a mind-map

C. Resilience Thinking as the Bridging Concept

(1) Analytical framework

- Bridging Concept is jointly developed by all researchers to integrate the different interdisciplinary perspectives, traditions and methods
- Common point of reference to connect the approaches and questions of the seven sub-projects
- Main reference point in analytical terms for the cross-cutting project and the final common results