



Case Study Screening: Preliminary results

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Overview

- ≡ Design and Concepts
- ≡ First Results
- ≡ Discussion of Next Steps

Design Objectives

- ≡ Preliminary synopsis of case studies
- ≡ Input for selection of common research foci and identification of potential synergies
- ≡ Identification of differences in terminology
- ≡ Exploration of potential climate related impacts and exposure units, responses, chances and options

Methods and Concepts

- ≡ Semi-structured questionnaire
- ≡ Conceptual base for structure
 - Environmental Impact Assessment (EIA): Impacts, Exposure Unit, Adaptation
 - DPSIR Framework: Driver – Pressure – State – Impact – Response (mitigation, adaptation)
 - Force Field Analysis: Chances, risks, supporting factors, constraining factors.
 - Anticipated information needs
 - Provision of case study context
- ≡ Coding of answers, parallel development of code system
- ≡ Synopsis based on data bank which links the codes

Potential Impacts

- ≈ Approx. 250 codes obtained from 15 questionnaires
- ≈ Approx. 30 relate to impacts:

Drought	"Extreme events: droughts"	Plantdisease	"increasing plant diseases"
Eros	"intensification of coastal erosion"	Pollut	"Pollution as consequence of extreme weather"
Extemp	"Extereme temperatures"	Precip	"Directly precipitation related impacts"
Fauna	"Changing fauna conditions"	Rain	"More water in reservoirs from more precipitation"
Fire	"wildfires"	Salin	"Changes in salinity of sea and fresh water"
Flood	"river floods"	Seal	"sea level changes"
Fog	"Changes in number of fogs"	Snow	"decrease in snow cover"
Grow	"Changing growth conditions for vegetation"	Storm	"more frequent and strong storms"
Heat	"Extreme temperature events: heat waves"	Surg	"Storm surges, storm tides"
Humidity	"Changes in humidity/aridity"	Warmsummer	"Increasing summer temperature"
Ice	"decrease in sea ice cover"	Warmwater	"Increasing temperature of sea water"
Infracost	"Increasing costs for buildings and infrastructure"	Warmwinter	"warmer winters"
Landloss	"Loss of land"	Waterlevel	"ground water level change"
Lslide	"landslides"	Waves	"Higher waves"
Nutri	"Shifts in nutrient loads and internal eutrophication"		

- ≈ Extremes / changes in average (e.g. Surg / Grow)
- ≈ Simple / complex impacts (e.g. Precip / Drought)
- ≈ Direct / indirect impacts (e.g. Storm / Pollut)

Focal Impacts

- ≡ **Storms** (10): *more frequent storms, high wind speed, stronger storms, higher waves, hurricanes, thunderstorms, related: higher precipitation, storm-surges.*
- ≡ **Sea-level rise** (9), **related:** floods.
- ≡ **Flooding** (8): *rivers, lakes, dams, flash floods, rise of river water level.*
- ≡ **Storm-Surges** (7): *sea floods, intensification of storm surges, increased flood risk, high wind speed, waves and water level, storm tides, erosion, related: storms.*
- ≡ **Precipitation** (6): *overall increase, more water in reservoirs, changed water supply, heavy rainfalls, increases in winter/decrease in summer, related: snow, floods, etc.*
- ≡ **Warm winters** (5): *less frequency of winter frost, mild weather in winter, less cold winter, shorter winter.*

Focal Exposure Units

- ≡ **Built environment (15):** *Urban area and infrastructure*
 - **Heating (5):** *energy demand, housing conditions.*
 - **Water supply systems (4)**
 - **Further:** *coastal protection, communication, transportation and technical infrastructure, cultural heritage, shore infrastructure, waste dumps.*
- ≡ **Natural environment (13):** *ecosystems*
 - **Coast (4):** *erosion, coastal ecosystems, beaches, shore meadows.*
- ≡ **Economic Sectors (6):** *economic and material losses*
 - **Tourism (12):** *tourism in general, winter tourism.*
 - **Forestry (11):** *forests, municipal parks.*
 - **Transportation (7):** *roads, sea transport, less black-ice, ports, airports.*
 - **Energy (5):** *power lines, hydro power, heating.*
 - **Further:** *agriculture, fishery, building sector, industry.*
- ≡ **Further Actors (10)**
 - **Inhabitants and private households (6)**
 - **Coastal management authorities (4)**
 - **Further:** *local administration, spatial planning authorities.*

Hypotheses and Suggestions



Arrange analysis along exposure units (IPCC method):
Potential of „climate mainstreaming“?

- ≡ Impacts related to building activities: Window of opportunity?
- ≡ Energy sector as strategic partner?
- ≡ Adaptation of water supply systems?
- ≡ Integration into hazard protection policies?
- ≡ Adaptation of transportation infrastructure?
- ≡ Development of tourism?
- ≡ Forestry?

Further Observations

- ≡ Joint overview on impacts relatively complete
- ≡ Foci of partners very diverse
- ≡ Terminology on impacts is diverse
- ≡ Formulated exposure units still very general
- ≡ Still little knowledge on supporting and constraining actors and institutions
- ≡ Existing policies seem to be related to
 - Hazards
 - National greenhouse gas mitigation strategies

Archetypes of Baltic Adaption?



(Update from Hamburg Workshop)

Identification of...

- ≡ most relevant impacts
- ≡ most relevant exposure units
- ≡ types of responses and institutional arrangements
- ≡ data: historical trends or scenarios for impact dynamics?
- ≡ constellations of actors and institutions
- ≡ the structure of the decision problems
- ≡ potential instruments

Discussion: Next Steps

- ≡ Beginning a project glossary on exposure units and impacts
- ≡ Concentrate on a small set of focal exposure units, impacts and hypotheses

- ≡ Candidates for Exposure Units:
 - Urban infrastructure: water and energy supply systems, coastal protection, transportation, cultural heritage (further refinement and concentration needed)
 - Buildings (private, services, industry, etc.)
 - Forests and trees

- ≡ Candidates Basic Impacts (including their combinations):
 - Extremes: winds, precipitation
 - Averages: winter temperatures, sea-level rise (SEAREG), hydrological regime, length of growing seasons

Thank You for Your Attention!



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