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Social Dimensions of Climate Change

Richard Langlais, Theme Leader

Nordregio

- Nordic Centre for Spatial Development
- Nordic Council of Ministers
- regional development and planning
- research, applied research, commissioned studies, competence development, dissemination, Nordregio Academy, 2 Journals
- the Nordic countries and Europe
- about 25 researchers holding 11 different passports
- www.nordregio.se

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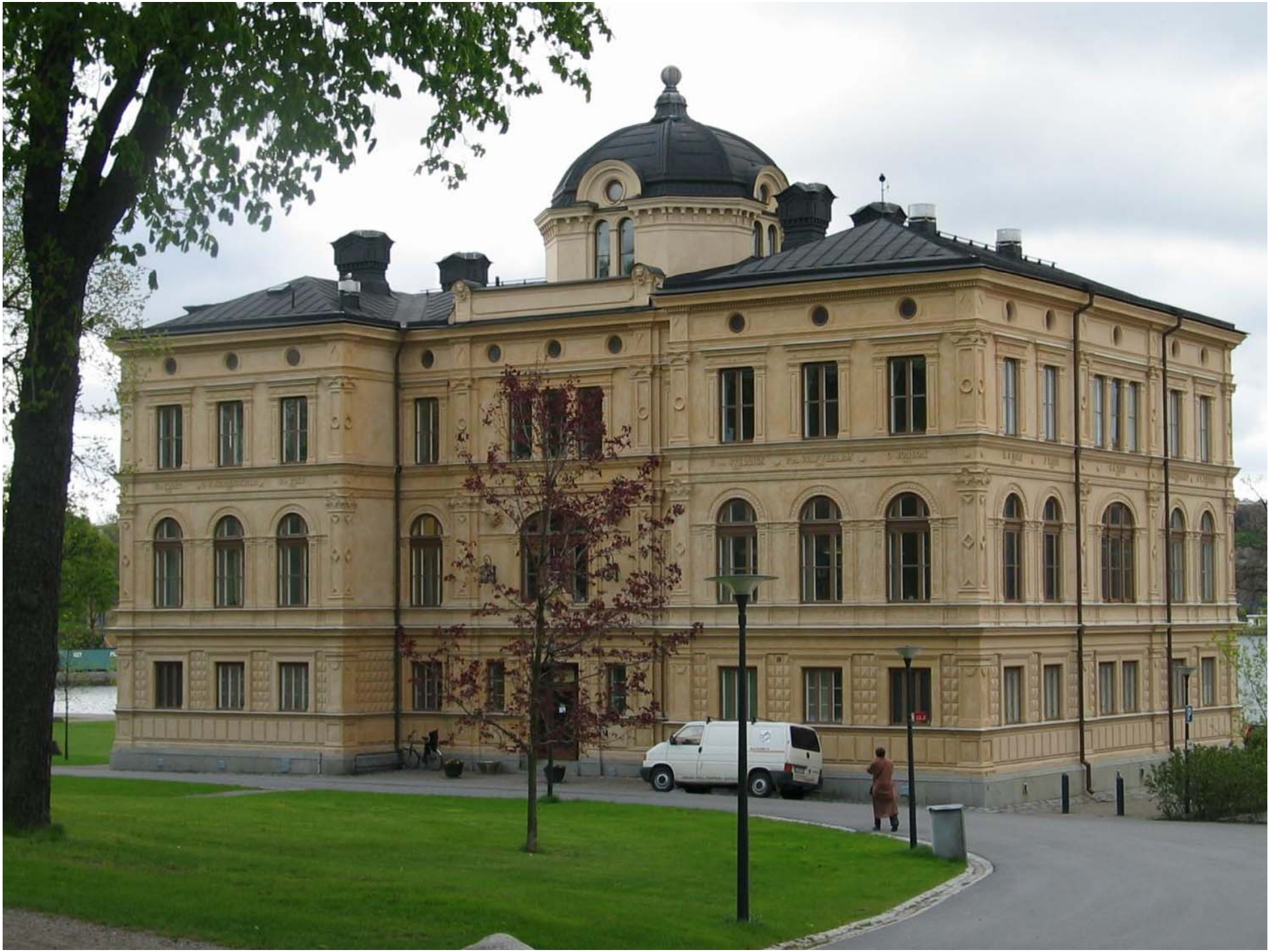


JVAB

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Social Dimensions of Climate Change

Framework for Qualitative Research: A Work-In-Progress

OUR OBJECTIVE

is to study and understand how concrete action is taking place at community level in response to climate change

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“Mariestads kommun anser att den övre dämningsgränsen enligt gällande vattendomar skall gälla och att staten får ansvara för åtgärder som innebär att den i vattendom fastställda dämningsgränsen kan hållas. Sådana åtgärder är av stor betydelse för kommunens befintliga strandnära bebyggelseområden inte bara i tätorten utan inom hela kommunen och för tillkommande områden som t ex Sjöstaden. Kommunen har därför inte för avsikt att ändra översiktsplanens rekommendation för lägsta grundläggningsnivå.”

Från miljöbedömningen

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OUR CLIMATE IS CHANGING

Reflections for Qualitative Research: Municipal Perspective (1)

- direct local impacts of climate change have diffuse global sources
- difficulty of seeing that small-scale local responses (mitigation) have impacts on the global scale
- the local is seen in isolation: “Latvia will profit from it”
- the old “long term” is the new “short term”
- perception of cost now, benefit later
- sustainability context, climate change content
- the next 30 years or so are already “locked in”

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Reflections for Qualitative Research: Municipal Perspective (2)

- knowledge about global, macro-regional and national scales is beginning to stabilize
- knowledge at local scales is called for
- as the results of new studies emerge, at finer levels of resolution, the scale of impacts appears to be even larger than earlier anticipated
- climate change and energy issues appear to be coupled
- the gendered character of response is emerging
- the opportunity for innovation payoffs is enticing

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Current projects

- Turning Point on Climate Change? (Nordregio, 2007→)
- K-Base: Knowledge-Based Tools for Sustainable Governance of Energy and Climate Adaptation in the Nordic Periphery (Nordic Council of Ministers, Nordic Research Program 2007-08)
- Municipal Responses to Climate Change Emergencies (EC-DG Envir, 2008)
- Another climate: gendered structures of climate change response in selected Swedish municipalities (Vetenskapsrådet, Formas, Rymdstyrelsen, 2008-2011)

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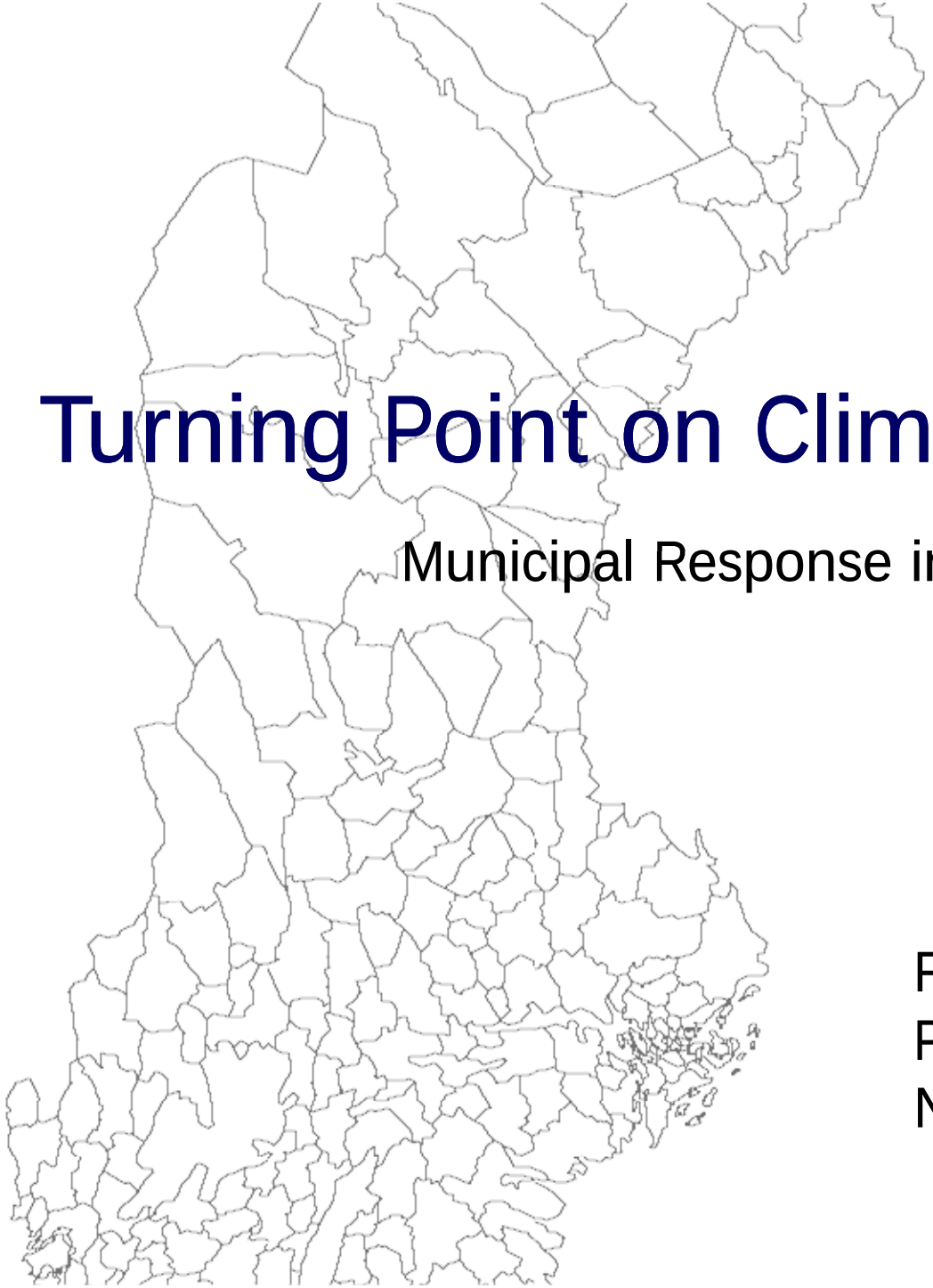

Turning Point on Climate Change?

Municipal Response in Sweden

Richard Langlais
Project Leader
Nordregio, 2007→

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Categorisation

- Category 1: No special activities; no particular response
- Category 2: Ambition to develop some concrete response
- Category 3: Some concrete activities according to governmental guidelines
- Category 4: Fewer activities compared to previous level of engagement
- Category 5: Wide variety of activities at a stable and even rising level
- Category 6: wide variety of activities with exceptional engagement

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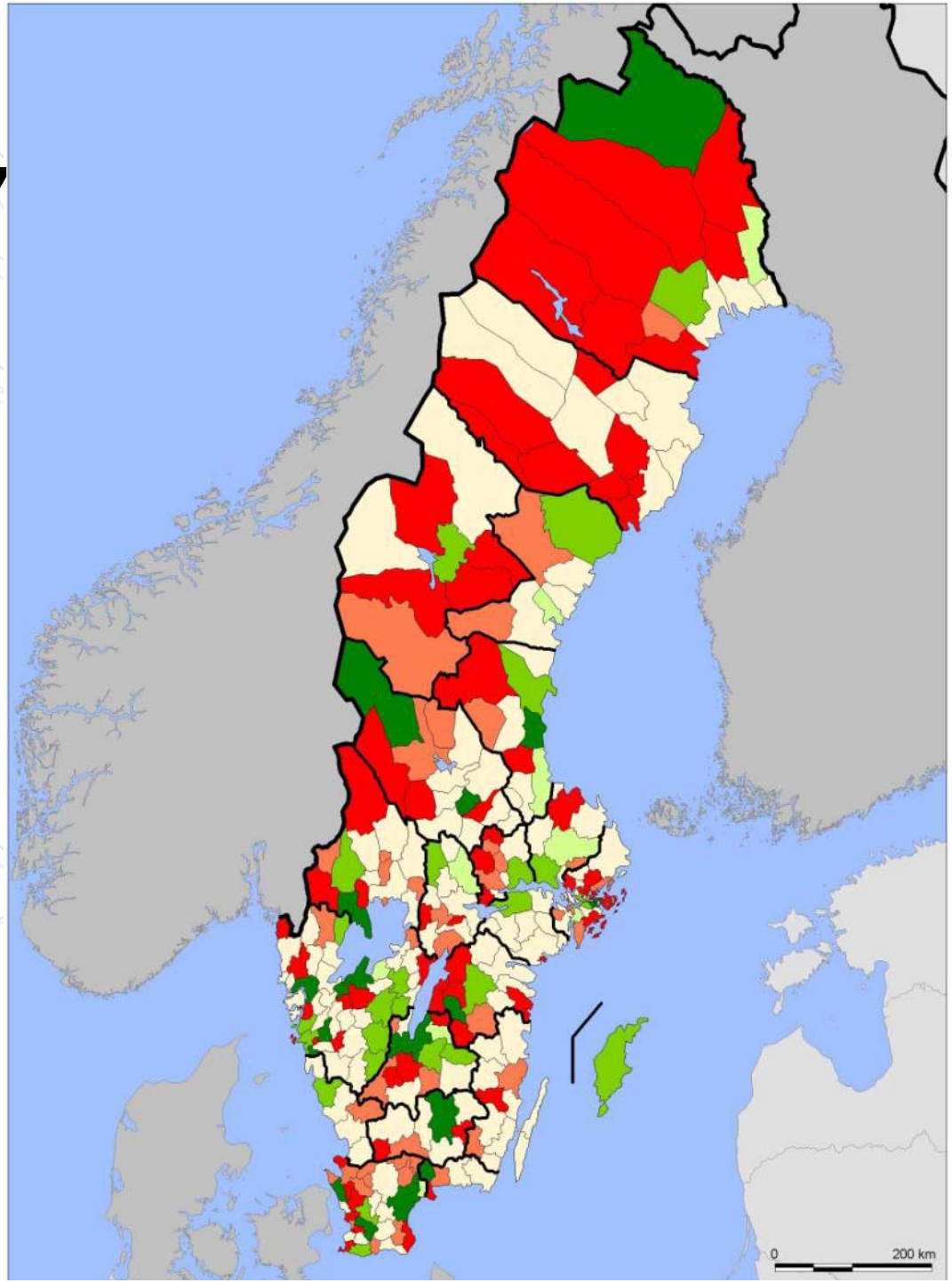
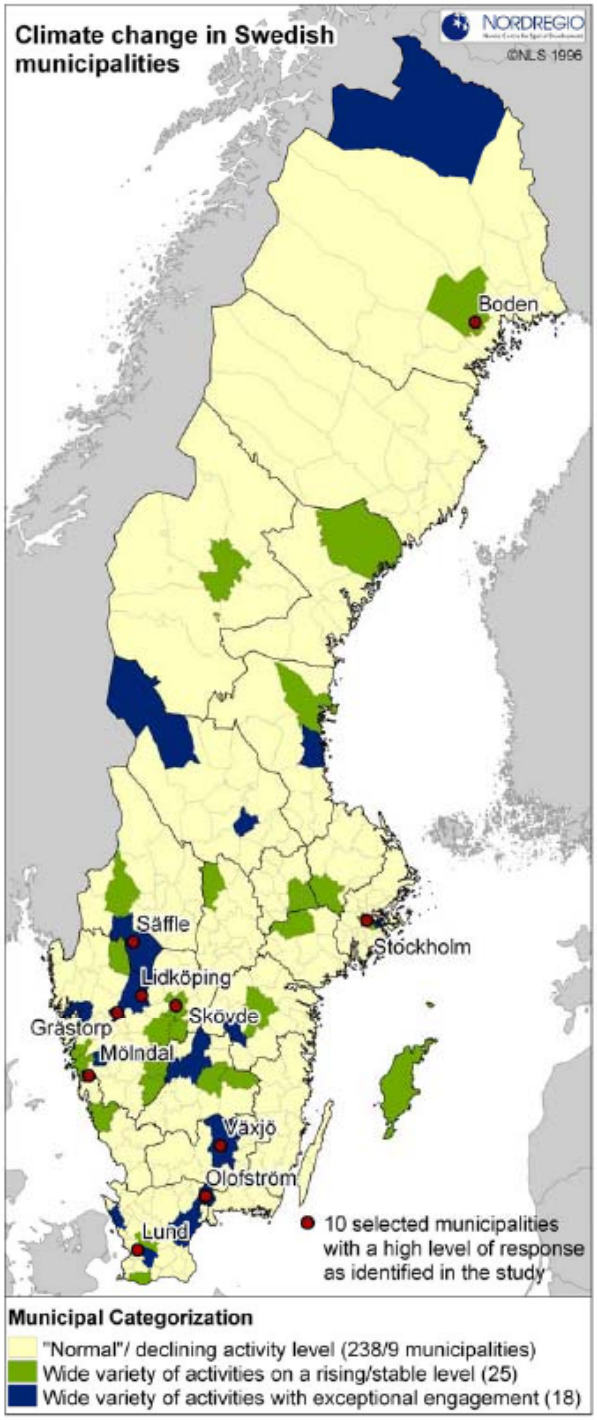
Categorisation 2007

Cat. 6	(18)
Cat. 5	(25)
Cat. 4	(9)
Cat. 3	(120)
Cat. 2	(43)
Cat. 1	(75)





Category 5

Arvika
Boden
Eksjö
Enköping
Eskilstuna
Eslöv
Falköping
Gotland
Göteborg
Hudiksvall
Hällefors
Kungälv
Linköping
Nässjö
Skövde
Stockholm
Tidaholm
Tranemo
Trelleborg
Ulricehamn
Varberg
Västerås
Åmål
Örnsköldsvik
Östersund

Category 6

Borlänge
Boxholm
Grästorp
Helsingborg
Jönköping
Kiruna
Kristianstad
Lerum
Lidköping
Lund
Mölndal
Nacka
Olofström
Säffle
Söderhamn
Uddevalla
Växjö
Älvdalen

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Climate change response measures

most often mentioned

by respondents

(in no specific

order)

Green cars
Eco-driving
Energy plans
District heating
Climate coaching
Energy counseling
Phasing out fossil fuels
Information campaigns
KLIMP and LIP projects
Biogas and ethanol production
Showing Al Gore's film, *An Inconvenient Truth*
Inventories of and refinements to existing systems

Figure 2: "The climate change response smokestack." The climate change response measures most often mentioned by respondents (in no specific order)

Changes so far (half municipalities interviewed)

	2007	2008
Category 1	26 %	15,5 %
Category 2	15 %	11 %
Category 3	41 %	37,5 %
Category 4	3 %	1 %
Category 5	9 %	20 %
Category 6	6 %	15 %

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Issues addressed by municipalities

Work related to mitigation

Energy
transport
urban structure
food production
Information campaigns
School projects

Consequences of Climate change

Flooding, sea level, water management - negative
Oil prices - negative
Tourism - positive
Agriculture - positive

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Organisation and strategies

- LIP and KLIMP important
- ”uthålliga kommuner” (Energimyndigheten)
- ”Ekokommuner”
- ”Klimatkommuner” - Coaching municipalities
- Energy and climate strategies
- Comprehensive plans (Översiktsplaner)
- National, regional and local environmental goals

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Some challenges and problems

- mass media has boosted work related to climate change
- small municipalities ask for assistance from regional and national authorities
- Who should be the responsible actor for work related to climate change in the municipal organisation?
- small municipalities cooperate in their organisations
- small municipalities feel disregarded in KLIMP
- in earlier years economic profit legitimised work related to energy- now climate change is on the agenda as well!
- transport infrastructure is a main issue

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K-Base: Knowledge-Based Tools for Sustainable Governance of Energy and Climate Adaptation in the Nordic Periphery

TKK, Janne Hukkinen, Project Leader
(Nordic Council of Ministers, Nordic Research Program 2007-08)

- aluminum smelting is an answer to the question of how to export electricity from remote peripheral areas of vast extended regions (climate/energy)
- Is climate change "just" a setting, or a substance; a context, or a content?
- comparison with oil exploration process
- internal/external dichotomies (oil is not there yet, although internal; oil exploration process is underway, but external; hydropower is potentially ready, and internal; bauxite is ready, but external
- decision process diagrams, anthropological actor-networks

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Municipal Responses to Climate Change Emergencies

Richard Langlais, Project Leader
(EC-DG Envir, 2008)

- relation to CPEW—Civil Protection Early Warning, and to BSRCIP—Towards a Baltic Sea Region Critical Infrastructure Protection Strategy
- main meetings
- objective
- partners

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SWEDEN

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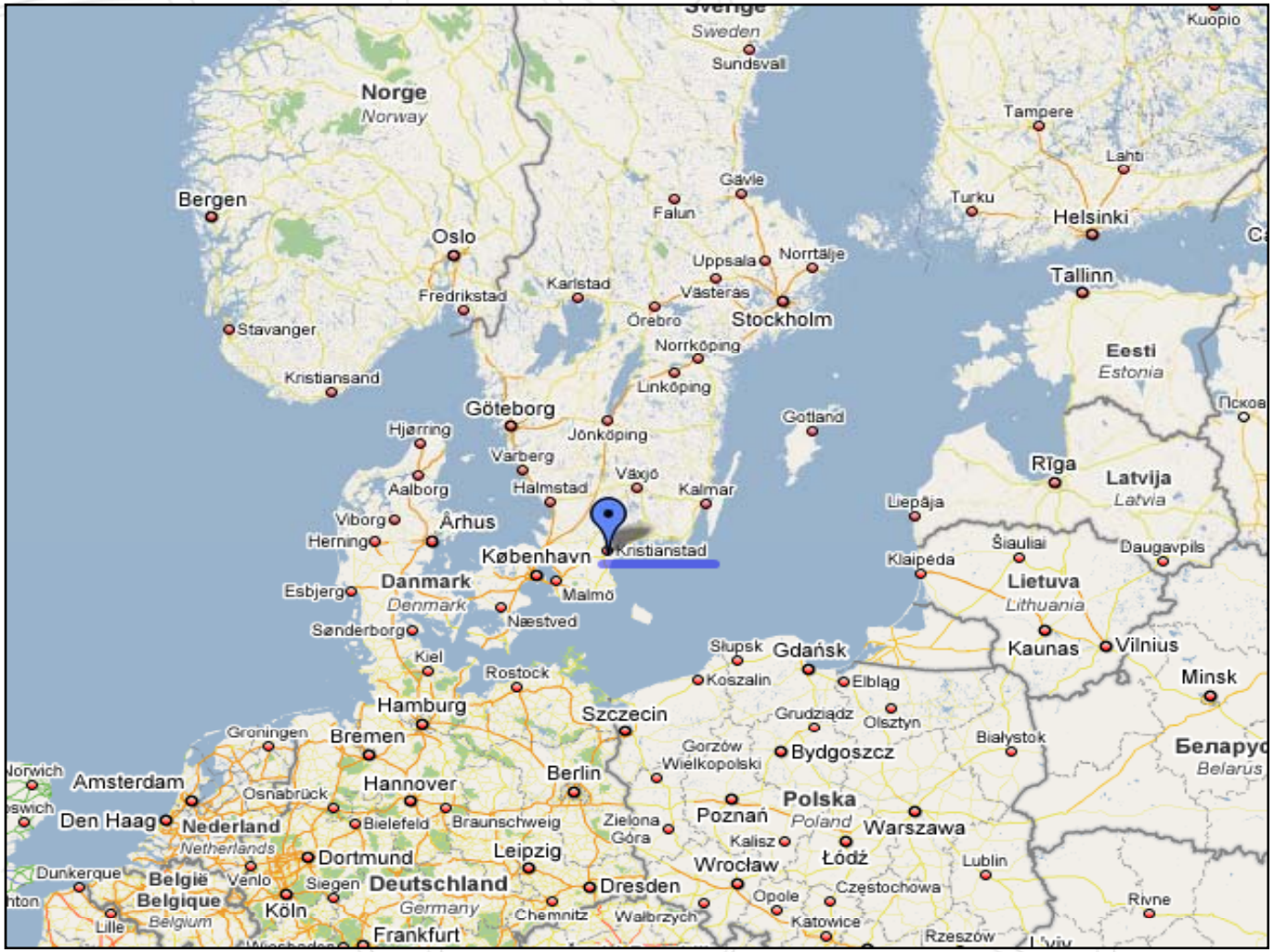
The municipality of Kristianstad



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One of Sweden's most flood-prone municipalities

- on the shores of Lake Hammarsjön and the Helge River
- most of the city is situated below sea level; -2.41 meters at its lowest (the lowest point in Sweden)
- several major flooding events during the last 100 years

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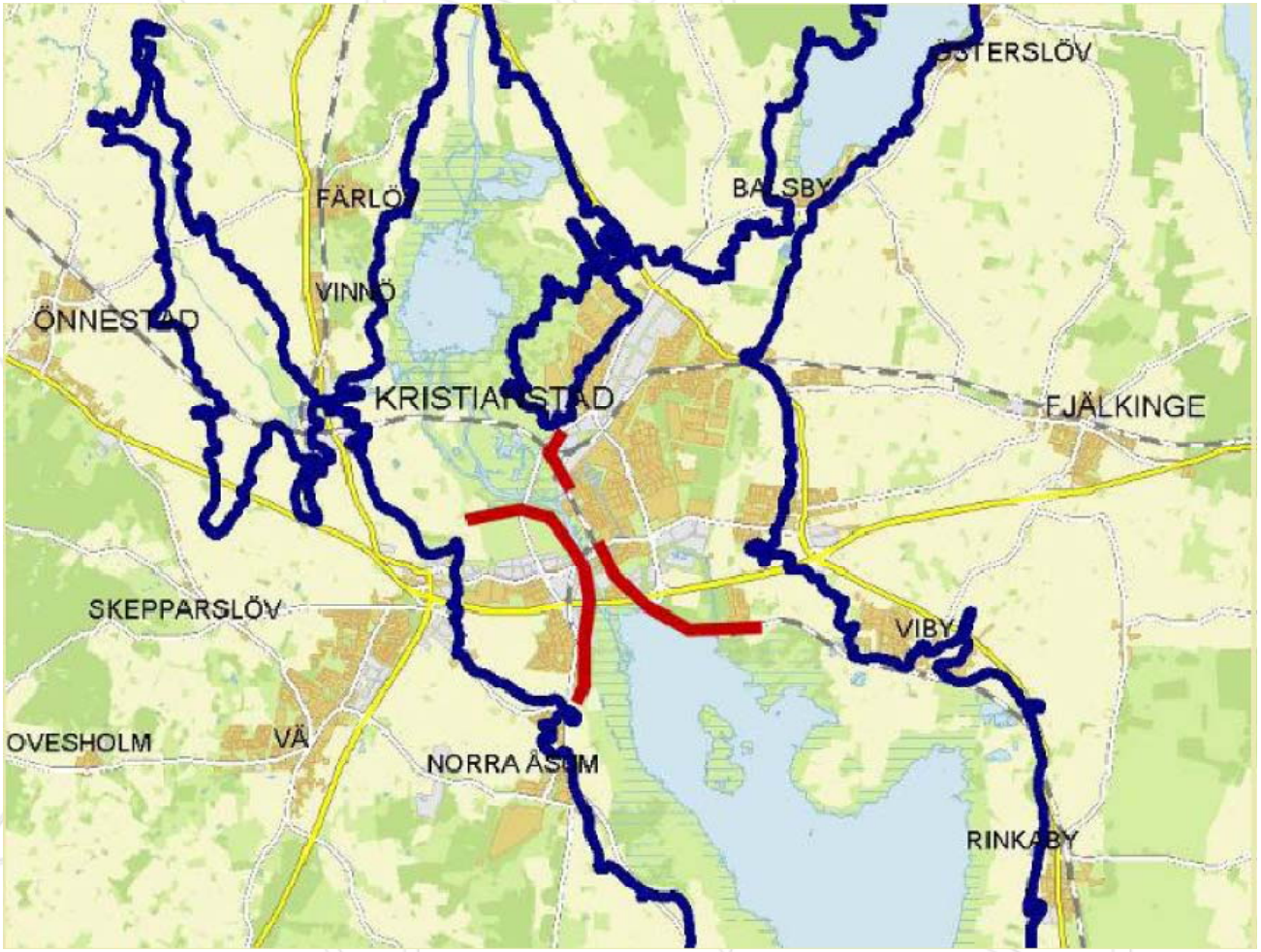
Areas flooded in worst case scenario (+5 m)

Blue line marks potential flooded areas and the red lines the new barriers being built



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On-going work on climate change emergencies

- one of few Swedish municipalities that have actually acted, early adaptors
- clear adaptation strategies, building of barriers started in 1850
- barrier building for SEK 200 million ongoing until 2011
- monitoring and surveying of flooding an integral part of the daily operations
- developing strategies for protection of critical infrastructures
- holistic view of climate change, extending across sectors and borders

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Innovative approaches – focal points for the case study

- municipal cooperation and coordination across municipal borders, with Kristianstad as the responsible partner
- clear political commitment and support, special "societal culture"; high level of awareness
- risk analysis, vulnerability studies are an integral part of daily municipal operations
- strategies for land use planning and protection of critical infrastructures partially in place and under development
- process-oriented rather than project oriented in their work
- bottom-up actions superceding the national directives

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FINLAND

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Selection of the municipalities – Why the City of Helsinki?

- active policy approach to climate change
- flash flooding incidents
- flood-prone critical infrastructures

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Why the town of Kouvola?

- Kouvola is located on the banks of the Kymi River, 134 kilometres north-east of Helsinki
- the city has already participated actively in climate change adaptation work
- flooding incident in the beginning of 2004 caused by heavy rain

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POLISI
AVSPÄRRAT
POLIS

Sub-project: The Use of GIS Applications

Jukka Krisp, Antti Veijalainen, Kirsi Virrantaus

TKK – Helsinki University of Technology
Department of Surveying, Geoinformatics & Cartography
P.O. Box 1200, FIN-02015, Finland

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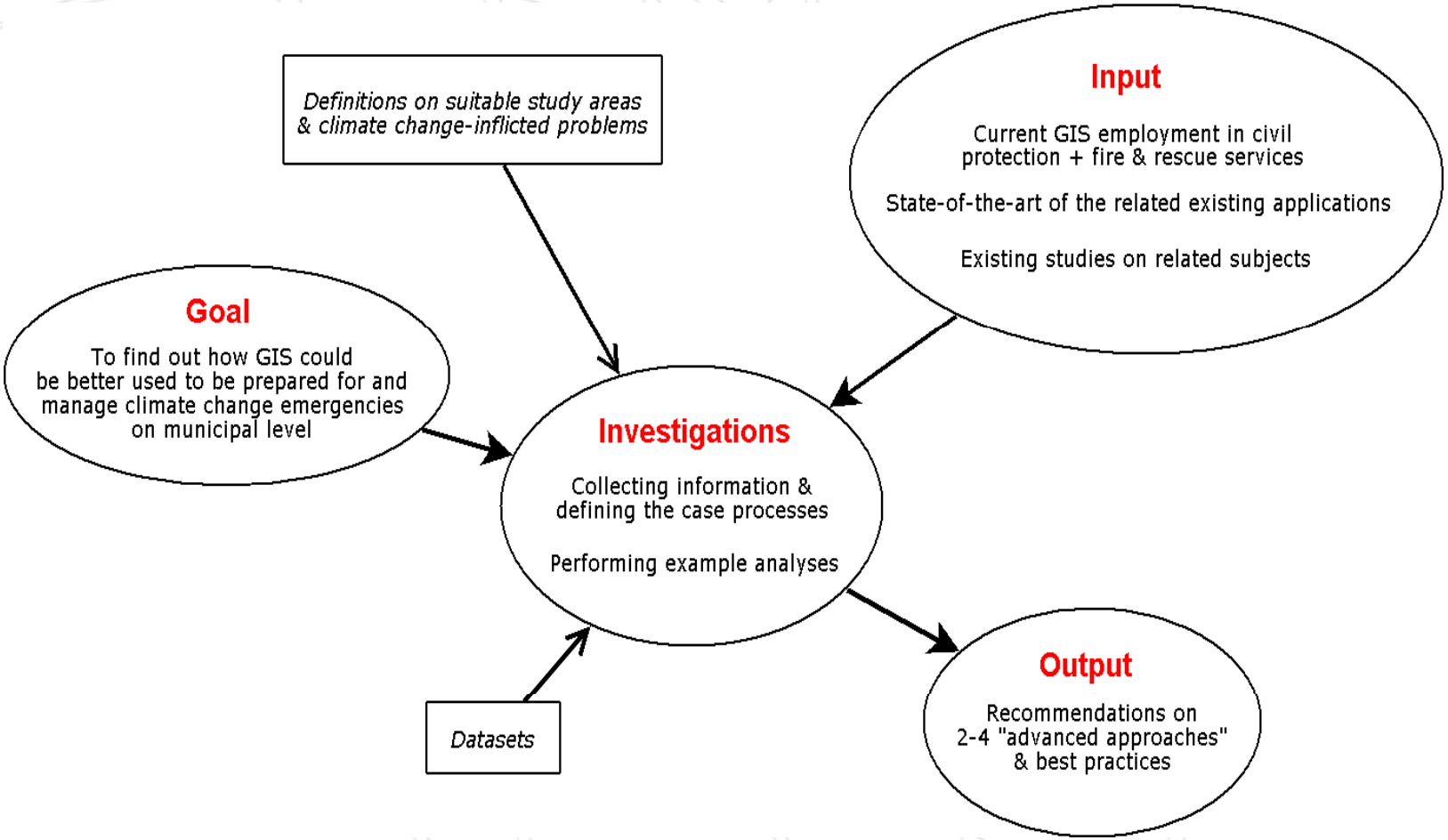
Preliminary Research Plan



Ellipses showing our own part, boxes external tasks

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Sub-project: Rescue Services' Preparedness for Extreme Weather

The Research & Development Unit at the Emergency Services College (ESC) is responsible for coordination of the research activities of the Rescue Services in Finland. The unit performs both independent studies as well as joint research with other institutes.

The role of ESC in the MuniRes project:

- look at the future weather-related risks in Finland
- What are the possible severe emergency scenarios?
- What are the demands for Rescue Services?
- What is the preparedness of the Rescue Services?
- Select one scenario for more detailed case studies

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Case Studies: flood-related risks & preparedness

- the municipalities: Helsinki metropolitan area plus 1 or 2 inland municipalities
- tasks:
  - Analyze past experiences with floods
  - Rescue Services' own risk assessment
  - plans, cooperation, coordination with other stakeholders
  - preparedness challenges
  - analysis and recommendations for both case study municipalities and about the general situation
  - motivation: the role of the Rescue Services is increasing, but there is not enough information about the actual needs and expectations, nor of how well the Rescue Services are prepared for them

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LITHUANIA

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Lithuania


0
40
80 km
LATVIA
Baltic Sea
Panevėžys
Šiluté
Pagėgiai
BELARUS
KALININGRAD (RUSSIA)
POLAND
national boundary
regional boundary
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- **Municipality of Pagėgiai**
  - main climate change risk: river flooding; River Neman, Europe's 14th biggest river; border between Lithuania and Russia's Kaliningrad Oblast
  - 12 200 inhabitants

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- **Municipality of Panevėžys**

– main climate change risks: river flooding, droughts, storms

– 116 000 inhabitants (5th biggest city in Lithuania)

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- **Municipality of Šiluté**

  - main climate change risk: flooding
    coastal municipality

  - municipality of 55 400 inhabitants

  - has decided that it lacks adequate human resources for participating as anything more than an associate in this project

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Contacts in Lithuania

- Advisory partners:
  - Municipality of Pagėgiai
    - Ms. Rasa Žukliju-te
  - City of Panevėžys
    - Ms. Zita Verkutė
    - Mr. Vitas Matuzas, Mayor of Panevėžys
  - Municipality of Šiluté
    - Ms. Diana Benkunskienė
- Other contacts:
  - Ms. Egle Blozneliene, Lithuanian Embassy in Helsinki
  - Mr. Arūnas Gratžulis, Association of Local Authorities in Lithuania
  - Lithuanian Ministry of Environment

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GERMANY

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Flood protection: the city of Cologne

Reinhard Vogt
Hochwasserschutzzentrale Köln

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About the city of Cologne:

- Situated on the River Rhine
- The city is 2000-years old
- Beautiful historic monuments (e.g. the Kölner Dom)
- Almost 1 million inhabitants occupying an area of 405 km²
- Fourth-largest city in Germany

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Two successive “100-year-floods” in the city of Cologne

1993

10,63 m Cologne gauge

1995

10,69 m Cologne gauge

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Exemplifying facts for a 100-year-flood

- Approx. extent of damage: 35 million €
- Need of sandbags for flood control: 400.000
- Evacuation needed for: 100 people and 70 big animals
- The consequence of the 100-year-floods:
  ➔ **Demand for flood protection improvement**

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Flood protection improvement came along with climate change awareness and adaptation by the city Cologne

The StEB (Stadtentwässerungsbetriebe Köln) is responsible for flood protection for the city of Cologne. Within their **strategic objectives** they highlight the importance of **accounting for climate change effects** in relation to flood protection.

Under the initiative of the StEB the "**Centre of excellence in flood management**" was started in September 2007. One of its aims is the study of the relationship among the effects on environment, climate and floods.

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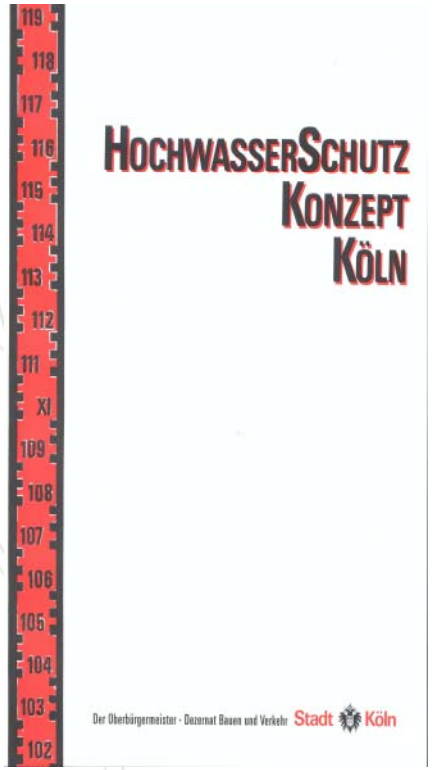
The City of Cologne is now a well-known German example for comprehensive flood protection

- Flood protection concept
- Preventive flood protection
  (commitment to upstream flood protection)
- Flood management
- Structural flood protection
- Risk management



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ITALY

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The Institute of International Sociology of Gorizia

- Isig is a non-profit cultural institution founded in 1968 (www.isig.it)

- the Institute has 5 departments
  - International Sociology
  - Mass Emergencies
  - Space, Environment and Society
  - Economics, Organisations and Social Policies
  - Technologies and Future

- ISIG is an NGO with Special Consultative Status with the Economic and Social Council of the United Nations

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The Mass Emergencies Programme of ISIG

- the MEP has as its main focus the study of human systems under collective stress, originating from either natural or social events.
- recently, risk perception and communication, public participation, early warning and civil protection have become central themes of interest.
- projects participation (6th and 7th Framework programme of the EU, etc.)
- the Programme is endowed with a library of about 6200 titles

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Location of ISIG and case study

Location of ISIG

Location of the case study

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FLOOD OF 29TH AUGUST 2003 IN NORTH-EAST ITALY

- is one of the most recent flooding events in Italy
- it was generated by the heat wave in the summer of 2003, directly linked with climate change
- to some extent it can be considered a "good practice"; the small remote alpine municipalities involved proved to be ready in the face of emergency; the resulting death toll was limited (2 people), if compared to the dozens in other floods in Italy
- it is located rather near ISIG

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AN IMAGE FROM THE CASE STUDY

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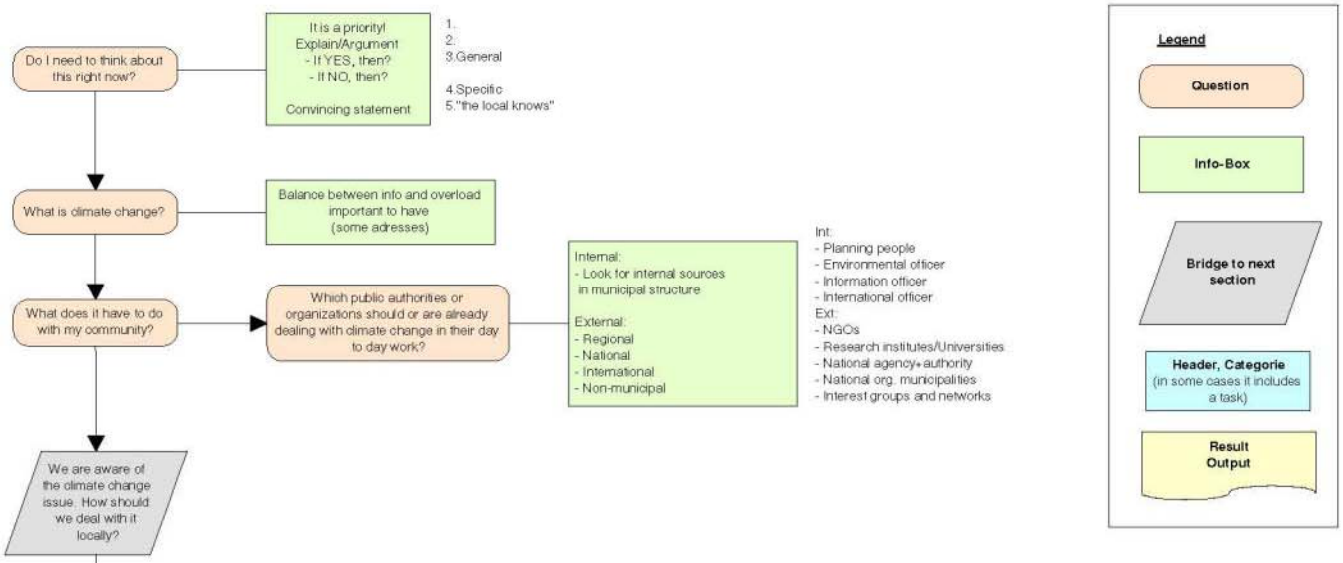
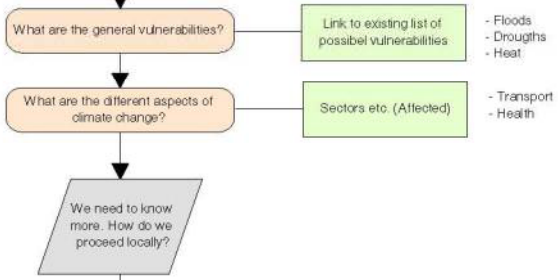
Climate Change



Inventory of General Impacts



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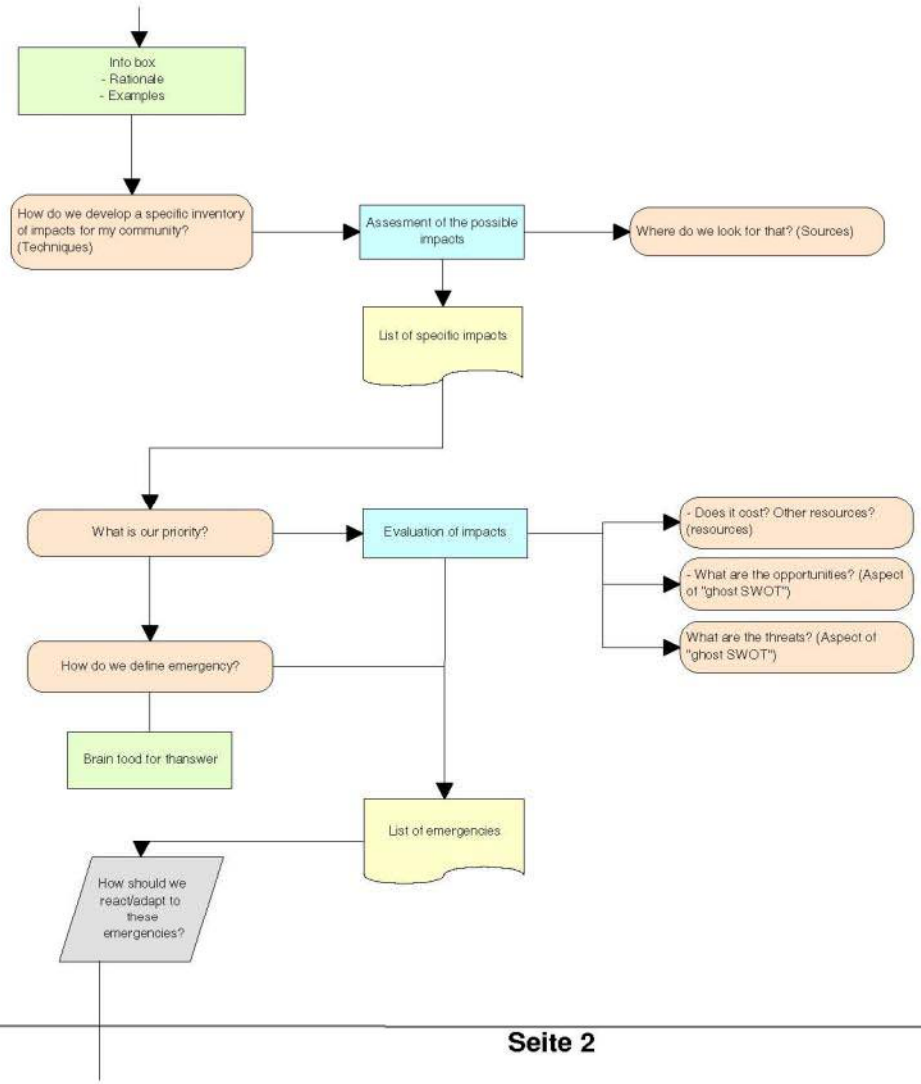
Inventory of Specific Impacts



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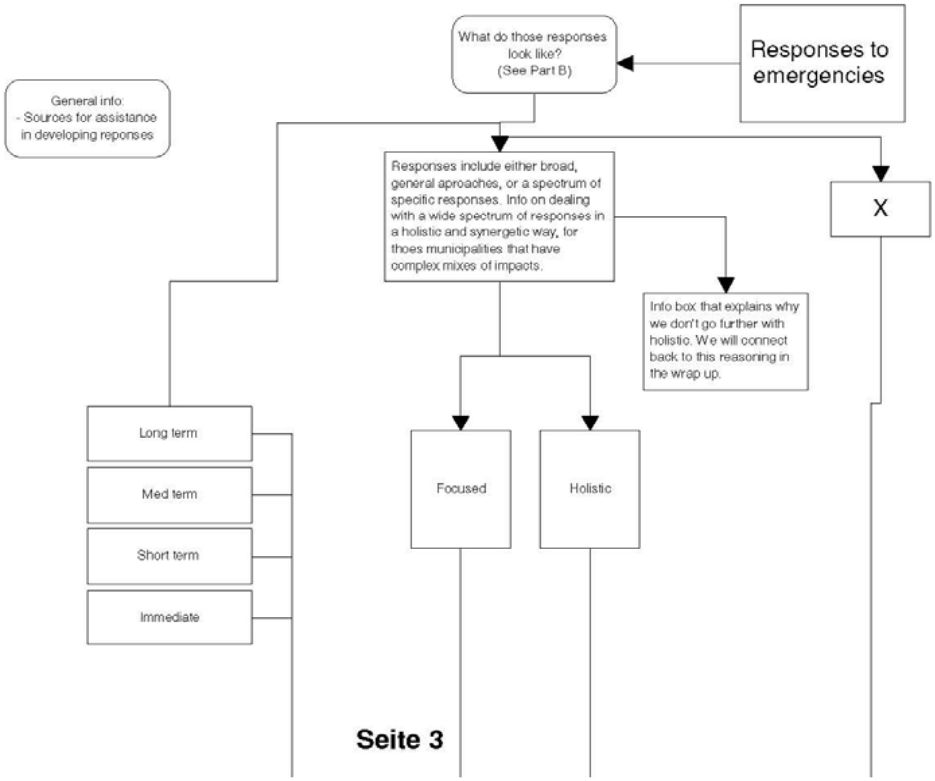
Part B.1
General Emergency Responses

(I don't know what to do with this. It's interessting, but what should it be used for?)



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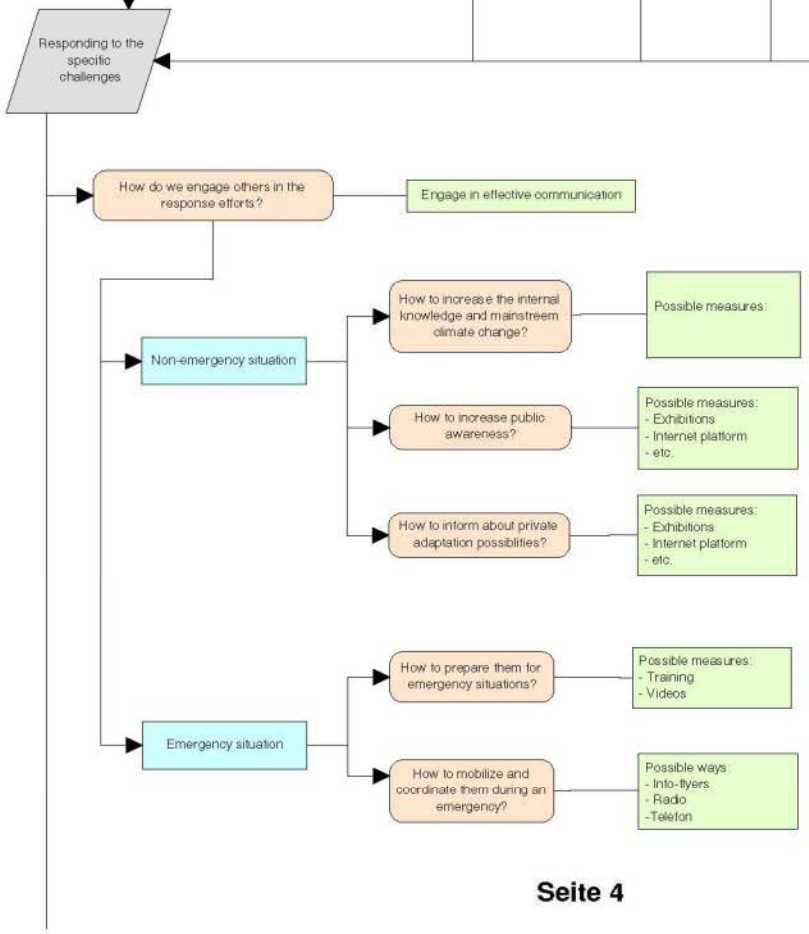
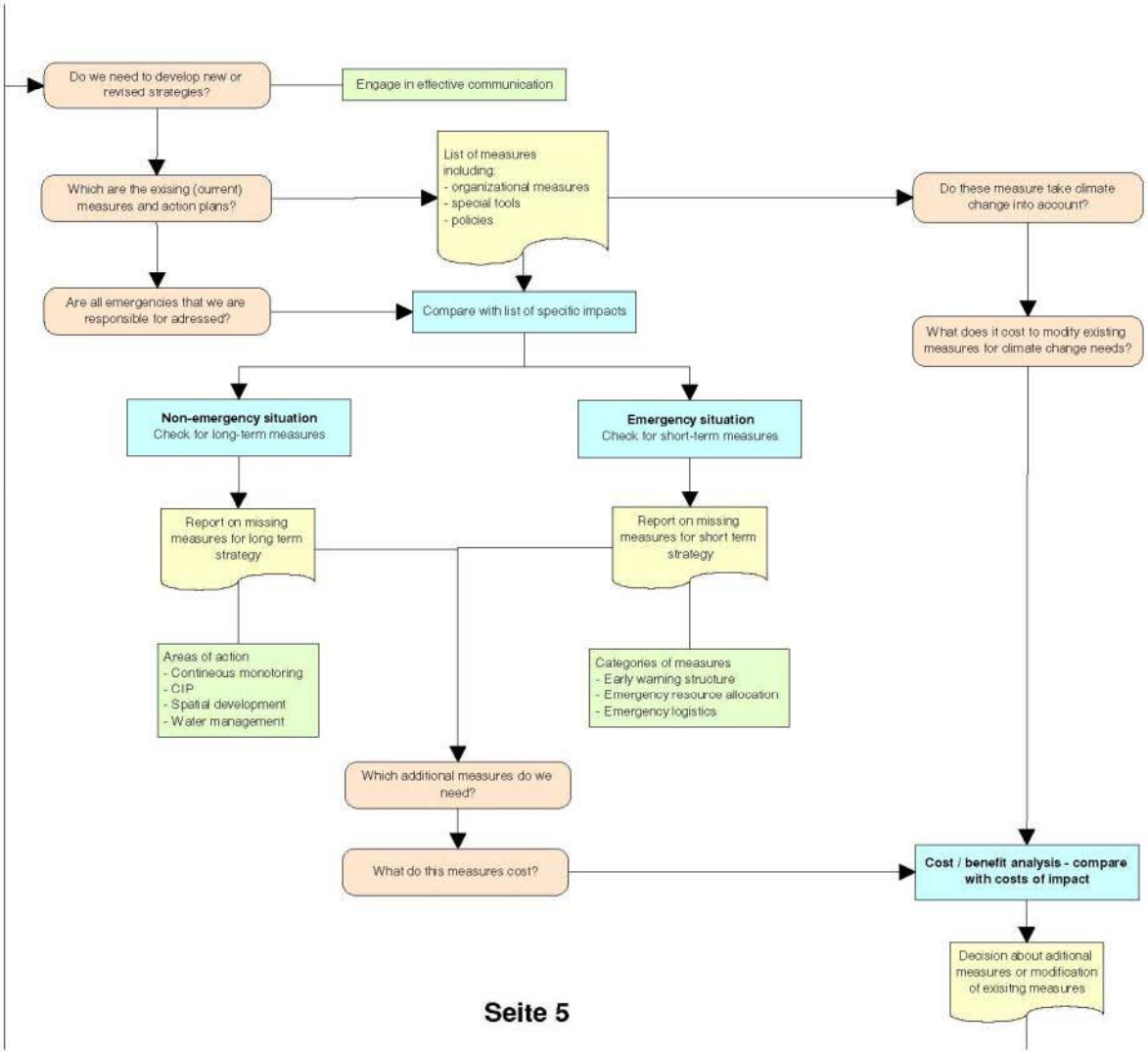
Part B.2
Specific Emergency Responses





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Implementation should be part of Specific Emergency Response

- Rhersals
- Education
- Responsible actors
- Communication strategy
- Evaluation of strategies

- Role of the actors. Who does what?
- Cooperation
- Structure of early warning and communication systems
- Informing the endangered people

Reinteration

Follow up of response actions and constantly evaluate muncipal activities by using the Guidelines!

Appendix
Cross-cutting concepts

Values

- Awareness
- Self-sustaining
- User-friendly/accessible
- Minimalistic
- Tools provision
- Informative
- Generally applicable
- Historical dimension

Messages

- Don't wait!
- Contradictory
- Overlap - synergy
- Simultainieous
- Process
- Mainstreeming
- No regrets
- Flexible
- Communication internal / external
- Details matter, think small!

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Another climate: gendered structures of climate change response in selected Swedish municipalities

Richard Langlais, Project Leader

(Vetenskapsrådet, Formas, Rymdstyrelsen, 2008-2011)

- Are there changes in the gendered structures of sustainable development that affect the concrete climate change responses of Swedish municipalities?
- Why have some Swedish municipalities responded actively to the issue of climate change, when the vast majority of municipalities in Sweden have not?
- What explains the shift of climate change to the centre of sustainable development? Is it a turning point?
- uses the methods of actor-network-theory, and analysis based on gender theory

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