



# **Adaptation to climate change in Sweden: National actions and local case studies**

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# Outline

- Aim of research
- Case study areas and methods
- National level
- Regional and local examples
- Independent case study area:  
Gällivare municipality



# Aim of EUR-ADAPT

- To assess adaptation to climate change in a multi-level governance context
  - Actors and responsibilities
  - Relationships between scales
  - Constraints and enhancements





# Sweden: National level

- Commission on Climate and Vulnerability (2005-2007)
  - Prompted by 2001 flooding
  - Overview of sectoral/regional vulnerability
- Climate Bill (2009)
  - Legislative changes to Planning & Building Law
  - Height data base and landslide mapping
  - Clarifying responsibilities and funding
    - *e.g.* revision of preventative measures grant



# Regional level: Västra Götaland

- County Administrative Boards
  - 2008: Principal authority for erosion and flood risk in municipal planning
  - 2009: Coordinating body for adaptation under Climate Bill
  - Annual risk and vulnerability assessment
- *Västra Götaland*
  - State petition after 2001 flooding
  - Preliminary discussions on coordination



# Local level: Gothenburg

- Sea level rise (SLR) and flooding
- 2001: Changes in building law (+50cm)
- 2006: '*Extreme Weather I*': Increase in min. building height to account for SLR (+1m)
- 2007: '*Extreme Weather II*': assessment of SLR preparedness





# Local level: Gothenburg area

## Mölndal

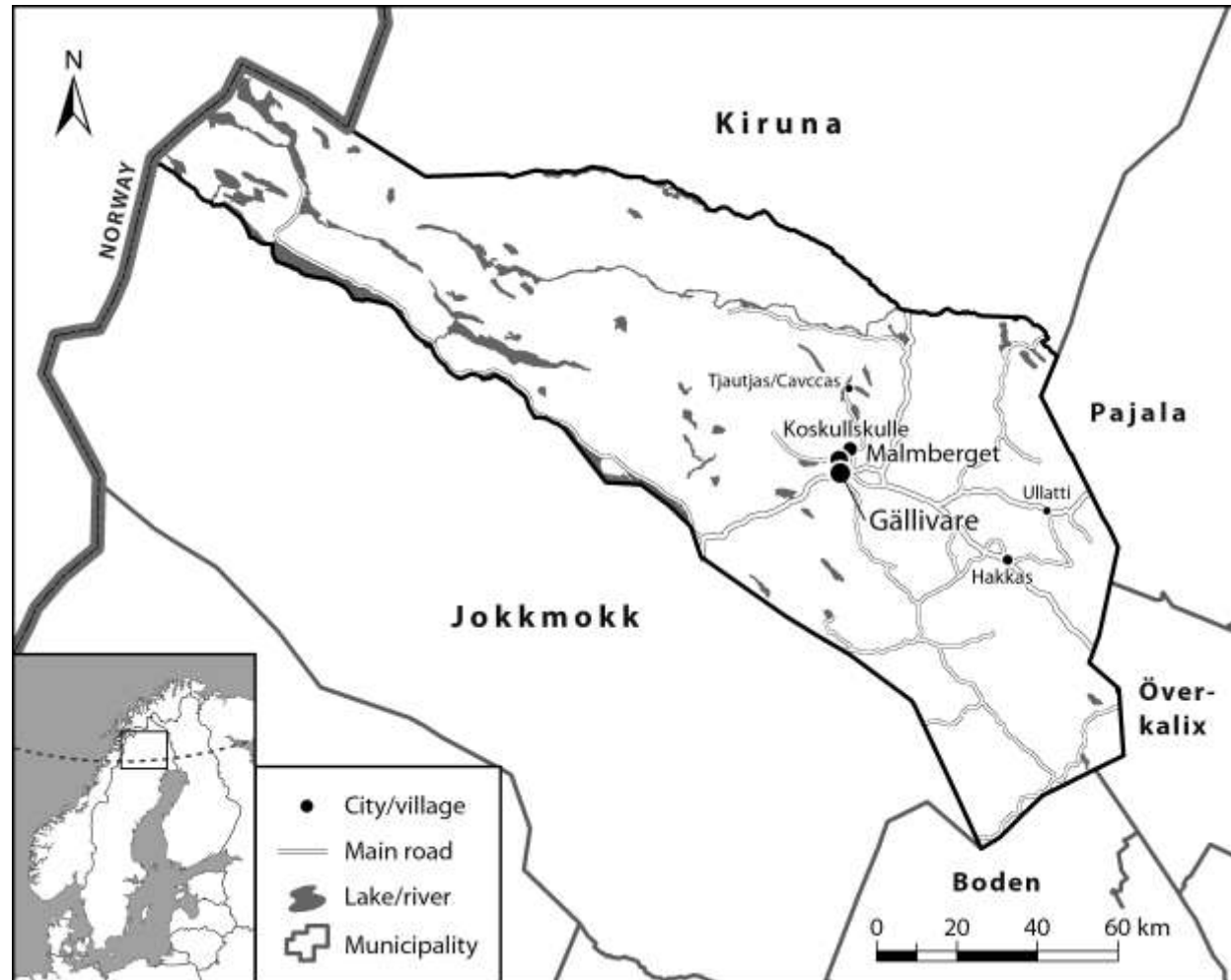
- 2006 flooding: increased dredging, reinforcement of embankments
- Increase in min. building height (+30cm)

## Trollhättan, Munkedal

- No independent work on adaptation  
→ Limited financial and human resources, limited experience of impacts



# Independent case study area: Gällivare municipality





# Observed impacts: Multi-use forests in Gällivare

- Increased climatic vulnerability in forestry, reindeer husbandry, and winter tourism:
  - *Longer autumn and spring*
  - *Shorter winter season*
  - *Rain in winter season*
  - *Reduced predictability*
- Impacts on forest roads and harvesting, reindeer migration and grazing, tourism bookings



# Observed impacts: Multi-use forests in Gällivare

- Some benefits for forestry, *e.g.* increased forest growth
- Limited impacts in tourism, able to diversify
- Potential for increased conflict over area resources
- *Similar results for reindeer husbandry and forestry in southern Norrbotten*



# Conclusions

- Observed weather events in different regions
- Direct support recently limited in national framework
- Area- and stakeholder-specific vulnerability assessment and adaptation measures
- Support for smaller municipalities in vulnerability assessment and identification of adaptation measures



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