



**DG SANCO workshop**

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**Climate and adaptation**  
**Human and animal health in Sweden**

**Elisabet Lindgren,** MD PhD

Stockholm Resilience Centre

# The Swedish government's Commission on Climate and adaptation



1 Oct 2007

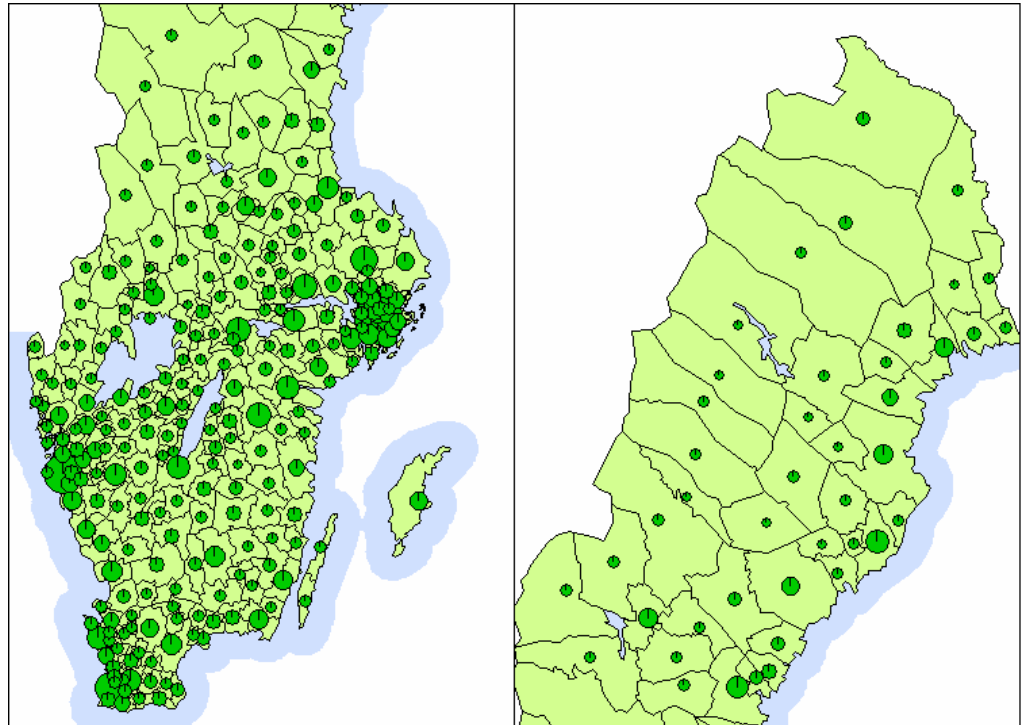
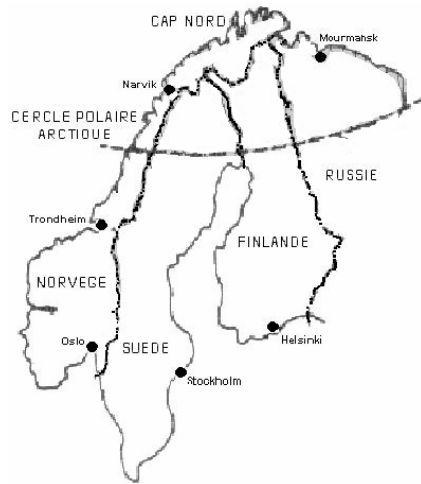
- Infrastructure
- Housing and construction
- Physical planning
- Agriculture, forestry, fisheries
- Tourism
- Nature conservation
- Water and sanitation
- Health sector – human and veterinary medicine

# Population in Sweden



**2005: 9 047 752 inhabitants**

**2050: 10.5 million inhabitants**



Source: SCB



# Commission on Climate and adaptation

## Health Section

Human and veterinary medicine

Head: Elisabet Lindgren

## Content

- Health effects of extreme temperatures
- Air quality: Outdoor incl pollen; Indoor
- Health effects of floods, land slides and storms
- Water quantity and quality
- Animal feed and food quality
- Health effects of ecosystem changes
- Risk evaluations of climate-related infections

### Main concerns

- Heat waves
- Infectious diseases
  - Water-borne: Drinking water and baths
  - Food-borne
  - Vector-borne

# Heat waves

- Buildings are currently designed for cold climate

Stockholm in 2071-2100:

35% decrease in heating needs

10 fold increase in number of days with cooling needs (based only on out-door temp.)

- Animal keeping sector very vulnerable

# Heat waves Recommendations

- Cooling systems needed in intensive- and coronary care units
- Evaluate the need for sun shields /cooling systems in health care units, homes of the elderly, work places etc.
- Community level: Identify and keep record of persons at risk
- Information to general public and animal keepers

# Increased risk of epidemics

## Drinking water

- Increased year-round risk of floods and leakages (incl. spread from animal keeping)
- Human pathogens of most concern for society:  
*Cryptosporidium*, *Giardia*, *Campylobacter*, calicivirus, *E. coli* VTEC (EHEC)
- Animal sector: Contaminated water troughs (pastures) plus risk of toxic algae



## Water-borne diseases Costs

### Costs of outbreaks

- Milwaukee, USA 1993 (Cryptosporidiosis) 96.2 million USD (65.17 million EURO)
  - Walkerton, Canada 2000 (*E. coli* VTEC/EHEC + *Campylobacter*) 12 million USD (8.13 million EURO)
- (Annual costs food-borne outbreaks in Sweden 731 million SEK (78.4 million EURO ))

### Costs of adaptation

- Increased need of pathogen control in drinking water systems in 2011- 2040: 1300 million SEK (140 million EURO)

# Water-borne diseases Recommendations

- Adapt drinking water system to more floods, leakages and increased temperatures
- Locate and register old deposits of chemicals, toxic compounds and antrax-contaminated cadavers in landslide and flood-prone areas
- Targeted information

# Vector-borne diseases

- Area of major concern for both human and veterinary medicine
- Major changes in geographical distribution, in local risk of infection and in risk periods
- High risk of introduction of new species/diseases

# Borreliosis / Lyme disease

- > 10.000 cases / year in Sweden
- Borreliosis is spreading to higher latitudes (Sweden) and altitudes (Central Europe)
- 3 months longer risk season in Stockholm in 2071-2100



# Sweden has to change focus

- Climate change will have both positive (decrease in cold-related effects) and negative consequences for human and animal health
- Many negative health effects can be partly prevented by adaptation, except for the spread of some vector-borne diseases (but information important!)
- All sectors of society need to build in adaptation NOW

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