



# SWEDEN

## CLIMATE CHANGE

Sweden has three different climatic zones. The south has a temperate humid climate; the centre and north of the country have a humid snow climate, with an average monthly temperature of less than 10 °C for eight months or more; and the mountainous regions can be classified as having an ice climate, with average monthly temperatures under 10 °C throughout the year. The average annual temperature during 1991–2005 was 1–2 °C higher than in 1961–1990, with the greatest temperature increase being observed in winter.

In the future, Sweden is expected to face warmer and wetter winters and warmer and drier summers. By the 2080s an increase in average annual temperature of 6 °C is expected, while precipitation in January is predicted to increase by more than 50 mm, to almost double the figure for the period 1961 to 1990.

## HEALTH EFFECTS

The main health concerns in relation to a changing climate in Sweden are an increase in excess mortality related to heat-waves and a change in the range of infectious diseases. Calculations for the Greater Stockholm area estimate that a rise in the mean summer temperature of 4 °C (compared with the mean for 1998–2003) would increase total mortality during the summer (June to August) by 5%, assuming that other causal factors remain

stable. On the other hand, there may be fewer cold-related health problems. Climate change is expected to modify the distribution, seasonality and incidence of infectious diseases.

A risk assessment, taking into account the strength of the link between climate change and disease risk and the importance of the disease and its consequences in Sweden, found that borreliosis (transmitted by ticks), visceral leishmaniasis (transmitted by sandflies) and vibriosis (transmitted through water) are of highest public health concern. Health risks related to flooding, such as water contamination, waterborne diseases, mould in houses and impact on infrastructure, including health facilities, are also of concern.

## HEALTH MEASURES TAKEN TO ADAPT TO CLIMATE CHANGE

A Commission on Climate and Vulnerability was appointed by the Swedish Government in June 2005 to assess regional and local effects of global climate change. Proposed measures for the reduction of health effects include: review and adaptation of building regulations; adaption of water plants to increases in water flows and pathogen concentrations; review of guidelines for food handling; and dissemination of information on water- and vectorborne diseases to the general public.

The National Board of Health and Welfare is responsible for adapting to a changed climate. The Government has also instructed several



Cycling in Ekero,  
Stockholm, Sweden

Photo: @stsbphoto.com

of its agencies, as well as county councils and community boards, to perform localized risk and adaptation assessments and to implement the recommendations of the National Climate Change Assessment. Municipalities and county councils are advised to develop “heat health action plans”, and to ensure that adequate air conditioning is installed in hospitals, nursing homes and other premises where ill or elderly people stay. Monitoring and surveillance of infectious diseases need to be strengthened to detect changes and to implement protective measures, as is already done for tickborne encephalitis.

### CO-BENEFITS FOR HEALTH OF CLIMATE CHANGE MITIGATION MEASURES

A wide range of mitigation measures are being taken in Sweden and, where possible, “win-win” options for health are discussed. The country is focusing both on energy efficiency and on renewable energy, such as wind power and biogas. Co-benefits for health are expected through improved air quality, as well as increased physical activity as a result of promotion and facilitation of cycling. Investments and changes in infrastructure, such as cycle lanes and cycle maps, have been made in a number of cities, for example Örebro.

### REFERENCES

Swedish Commission on Climate and Vulnerability. Sweden facing climate change – threats and opportunities. Stockholm, 2007; <http://www.sweden.gov.se/sb/d/574/a/96002>



A boy jumps into the water, Oregrund by the Baltic sea, Sweden.