

Adaptation to Climate Change

- Adaptation is defined as adjustment in ecological, social or economic systems in response to actual or expected climate stimuli and their effects or impacts.
- Adaptation has the potential to reduce many of the adverse impacts of climate change and to enhance beneficial impacts.
- Examples of possible adaptation measures in Finland include: modifying forest management practices, revising guidelines for lake and river regulation, cultivating different crop species and varieties, revising building codes, improving flood defences and urban drainage, and land use planning to protect biodiversity.
- It is unclear if Finnish society is sufficiently well prepared for the challenges of adapting to climate change. This concern has prompted policy makers to incorporate adaptation into the new National Climate Strategy due to be published in late 2004. It is also the primary motivation for FINADAPT.

The FINADAPT Consortium

FINADAPT is conducting the first in-depth study of the adaptive capacity of the Finnish environment and society to the potential impacts of climate change. The Consortium is funded for the period 2004-2005 as part of the Finnish Environmental Cluster Research Programme, co-ordinated by the Ministry of the Environment.

The main objective of FINADAPT is to produce a scoping report based on literature reviews, interactions with stakeholders, seminars, and targeted research. The report should:

- outline knowledge about current climate variations
- describe future changes projected for the 21st century
- characterise adaptive capacity to cope with present-day climate
- provide estimates of potential impacts under future climate change
- list potential measures for adapting to climate change
- assess the relative vulnerability of different systems, sectors or communities to climate change, identifying priority areas for attention
- identify the major gaps in knowledge and needs for new research
- distil the key findings in a summary for policy makers.

The Consortium, co-ordinated at the Finnish Environment Institute, comprises 14 work packages (WP) involving 11 Partner institutions (see back page). FINADAPT is managed by means of a Steering Committee (comprising representatives from ministries and other agencies) and a Management Committee (composed of WP leaders).

FINADAPT Research Themes and Work Packages

RT I Co-Ordination and Data Support

- WP 1 Management and co-ordination** Finnish Environment Institute (SYKE), Research Programme for Global Change (GTO)
- WP 2 Climate data generation** Finnish Meteorological Institute (IL); Department of Physical Sciences, University of Helsinki (HY)

RT II Adaptation in the Natural Environment

- WP 3 Biological diversity** Finnish Environment Institute (SYKE), Research Programme for Biodiversity (LTO)
- WP 4 Adaptation of forest ecosystems, forests and forestry to climate change** University of Joensuu, Faculty of Forestry
- WP 5 Adaptation in the agricultural sector** Finnish Environment Institute (SYKE), Research Department (TO); Agrifood Research Finland (MTT)
- WP 6 Water resources** Finnish Environment Institute (SYKE), Hydrological Services Division (HYD), Water Resources Management Division (VES) and Research Programme for the Protection of the Baltic Sea (ITO)

RT III Adaptation for Infrastructure and Human Well Being

- WP 7 Climate warming and health adaptation in Finland** Centre for Arctic Medicine, University of Oulu (OY)
- WP 8 Transport** VTT Building and Transport
- WP 9 Risks to the built environment** VTT Building and Transport
- WP 10 Energy infrastructure** VTT Processes; Finnish Meteorological Institute (IL)
- WP 11 Climate change and tourism** University Network for Tourism Studies, University of Joensuu (JoY); Forest Research Institute (METLA); Department of Forest Economics, University of Helsinki (HY)

RT IV Integration

- WP 12 Socio-economic preparatory study** The Government Institute for Economic Research (VATT)
- WP 13 Urban planning** Centre for Urban and Regional Studies, Helsinki University of Technology (TKK)
- WP 14 Stakeholder questionnaire survey** Finnish Environment Institute (SYKE), Research Programmes for Global Change (GTO) and Environmental Policy (PTO)

Contact Details

For general enquiries about FINADAPT, please contact the co-ordination group at the Finnish Environment Institute:

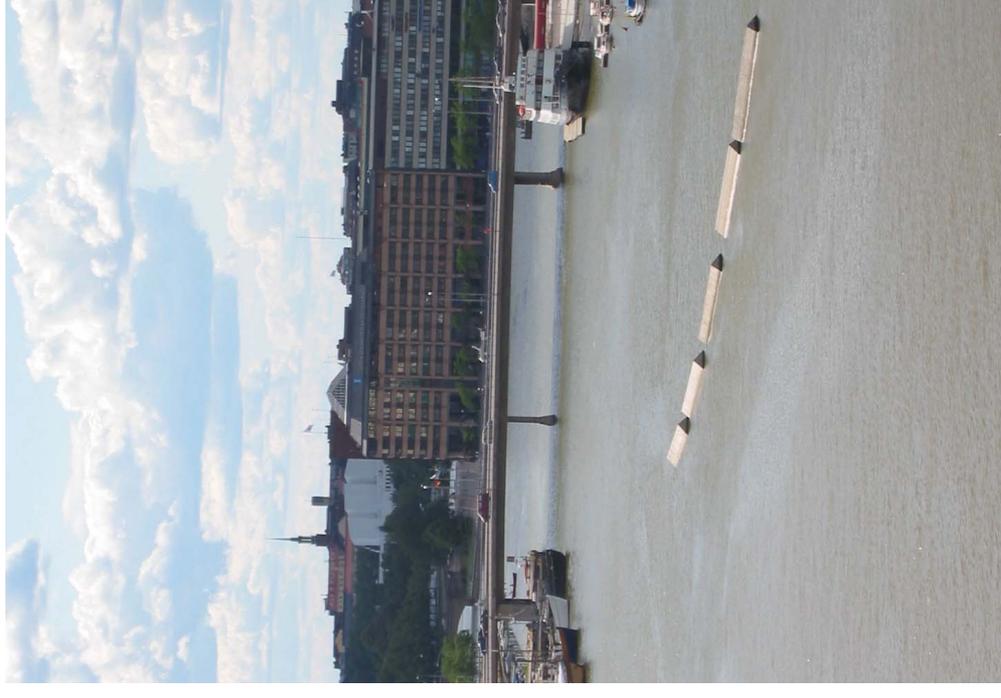
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FINADAPT

ASSESSING THE ADAPTIVE CAPACITY OF THE FINNISH ENVIRONMENT AND SOCIETY UNDER A CHANGING CLIMATE

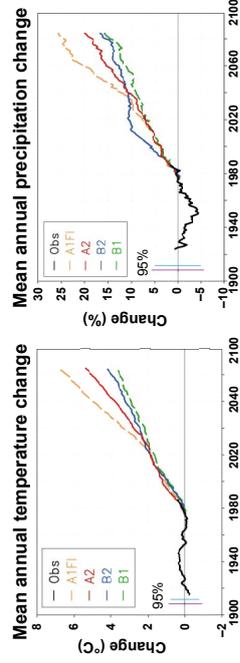


SYKE

Finnish Environmental Cluster
Research Programme

Climate Change in Finland

- The Finnish climate has warmed by about 0.7°C during the 20th century.
- Further mean annual warming of between 2.4 and 7.4°C and increased annual precipitation by 6 to 37% is expected during the next 80 years.
- Changes in the frequency and magnitude of extreme climate events such as heavy rainfall and high temperatures are likely to accompany changes in average climate.
- Climate changes will have significant impacts on different facets of the natural environment and society in Finland, some adverse and some beneficial.



Observed and projected changes in mean annual temperature (left) and precipitation (right) for Finland relative to 1961-1990. Coloured curves show projections for different emissions scenarios. Changes in both temperature and precipitation clearly exceed the range of natural variability (vertical lines) before the middle of this century. Source: Finnish Meteorological Institute.

Climate Change Response Measures

- *Mitigation* is defined as a human intervention to reduce the releases (sources) or enhance the removal (sinks) of atmospheric greenhouse gases (GHGs) such as carbon dioxide, methane, nitrous oxide and ozone.
- Governments are seeking to mitigate climate change by reducing GHG emissions. However, their actions to date still fall well short of what would be required to stabilise the atmospheric concentration of GHGs during this century.
- Even if stabilisation is achieved, the climate will still continue to change for some time due to lags in the response of the climate to the historical build-up of GHG concentrations. Some future climate change is thus inevitable and society must be prepared for its consequences.
- *Adaptation* is therefore required, alongside vigorous mitigation activities, as part of a co-ordinated policy response to address climate change.

Are new conservation measures required to address the potential impacts of climate change on biological diversity in Finland?

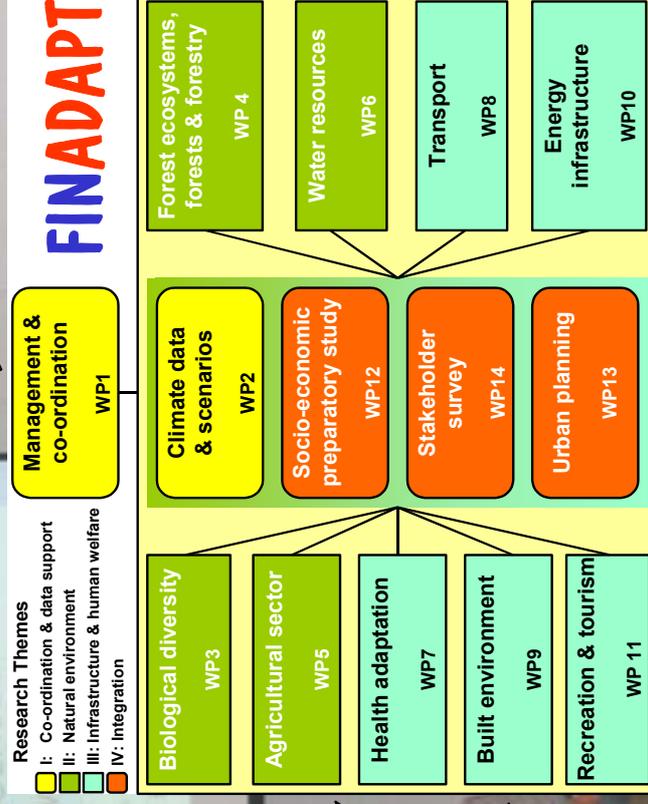
What are the risks posed by climate change for human health, recreation and well being?

What are the likely costs to the Finnish economy of adapting to climate change?

What are the risks and opportunities of climate change and who should be concerned?

How should climate change influence planning and decision-making?

What new research is required to understand the potential risks of climate change and examine possible adaptation responses?



How should Finnish forestry, agriculture and water resources be managed in order to account for a changing climate?

How vulnerable is the built environment and infrastructure in Finland to present-day and future extreme climate events such as floods, drought and strong winds?

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