

15.10.2010

Reduction in Greenhouse Gas Emissions and Adaptation to the Climate Change

The Finnish Transport Agency, Centre for Economic
Development, Transport and the Environment
ROAD EX Climate Change Workshop No1
Inverness 19.10.2010

Contents

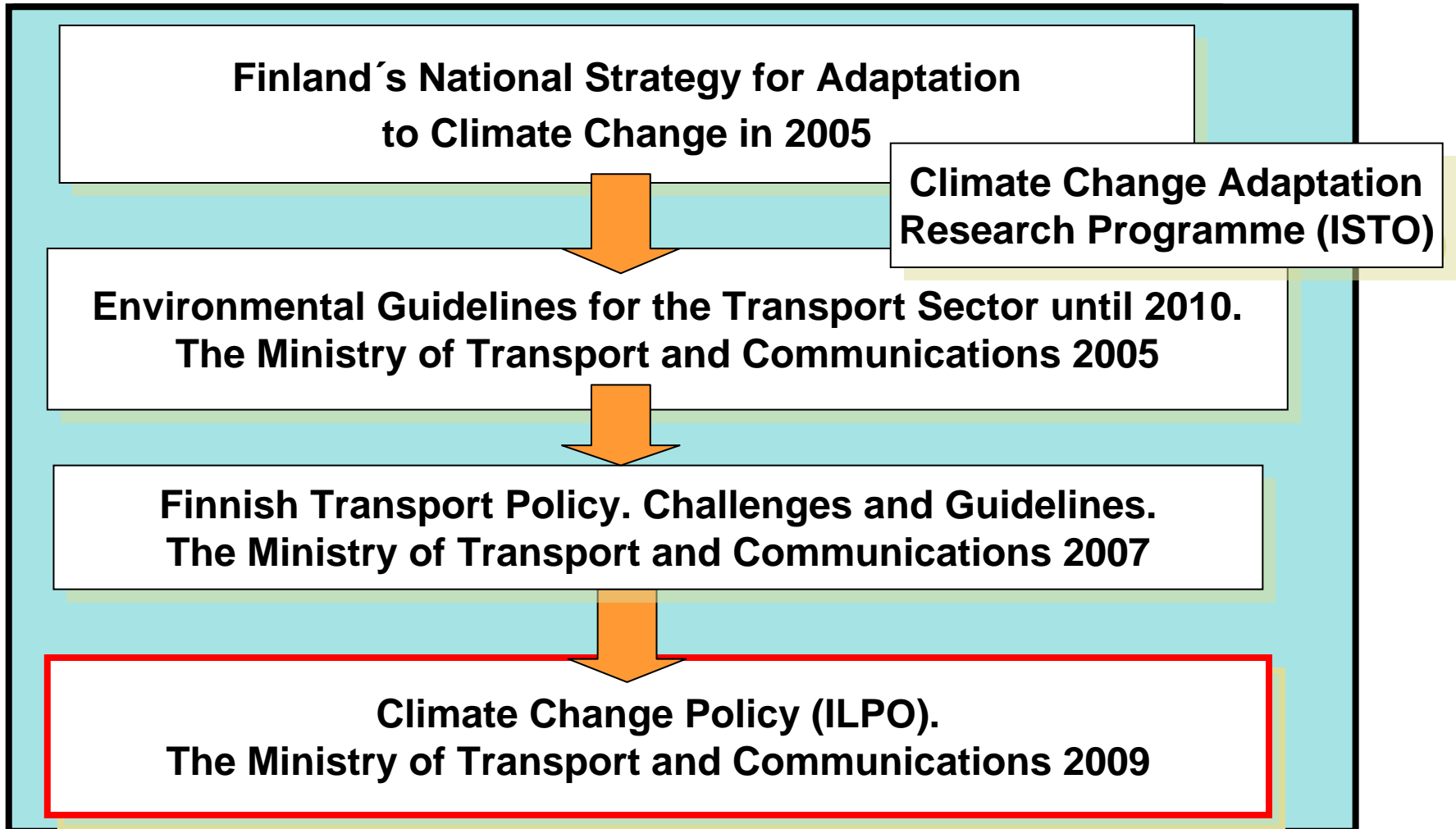
What has been done in policy level ?

What has been done so far in Finnish Transport Agency in adaptation to climate change ?

What is going on ?



What has been done in policy level ?



Other publications

- National Climate and Energy Strategy 2001, 2005, 2008
- Finland's National Strategy for Adaptation to Climate Change in 2005
www.mmm.fi/sopeutumisstrategia
- ISTO www.mmm.fi/ISTO/eng
- An Action Plan to Implements the National Strategy for Adaptation to Climate Change 2008 [YMrep20en /2008 Adaptation to climateChange in the Administrative Sector of the Ministry of the Environment .pdf](#)
- Assessing the Adaptative Capacity of the Finnish Environment and Society under a Changing Climate 2004-2005
www.environment.fi/syke/finadapt
- Evaluation of the Implementation of Finland's National Strategy for Adaptation to Climate Change 2009

Climate Change Policy (ILPO) of The Ministry of Transport and Communications Finland

- **Published on 17.3.2009.**
- **Actions have been listed that are needed in this administrative sector to minimize CO₂ emissions from traffic.**
- **The costs of these activities have been evaluated.**
- **Finnish domestic traffic produced about 13,7 Mt greenhouse gases in 2007.**
- **Target is that renewable fuel energy sources are used 10 %.**
- **Besides that traffic CO₂ emissions should be reduced by 2,3 Mt compared to today and 2,8 Mt compared to the estimate in the year 2020.**

Reduction actions

- 1. Modernization of the fleet of cars on the road.**
 - CO₂ reduction potential 2,1-2,3 Mt.
- 2. Improving the traffic energy efficiency.**
 - CO₂ reduction potential 0,3 Mt.
- 3. Guiding the growth in transportation in urban regions to environmentally friendly means of transport (public transport, pedestrian and bicycle traffic).**
 - CO₂ reduction potential 0,3 Mt.
- 4. Supporting the information society and communication policy.**
 - reduction potential will be calculated between 2009-2011.

Economic targets for traffic are set in year 2012

- higher taxes for fuel and road users.**

Adaptation to climate change:

- update the instructions dealing with construction, maintenance and road surfacing**
- make plans for exceptional weather conditions**
- financing research**
- take advantage of possible positive consequences of climate change.**

Estimated costs of this programme are in years from 2010 to 2013 altogether 115 M€

Climate Policy Programme for the Ministry of Transport and Communications´ administrative sector for 2009-2020 - A progress report 2010.

ACCLIM – Climate extremes in present day climate and state-of-the-art projections of climate change

The project is funded by Climate Change Adaptation Research Programme (ISTO)

The objectives of the ACCLIM project are:

- to calculate the return periods of extreme weather events based on measurements made at about 10 weather stations in Finland**
- to analyze state-of-art global and regional climate model simulations, to produce climate scenarios**
- to produce probabilistic estimates of changes in climate over Finland**
- to produce guidance for users of the results of the project.**

Preliminary study in 2007: Adaptation to Climate Change in the Road Management. VTT Seppo Saarelainen & Lasse Makkonen

Adaptation and proactive measures against climate change are as follows:

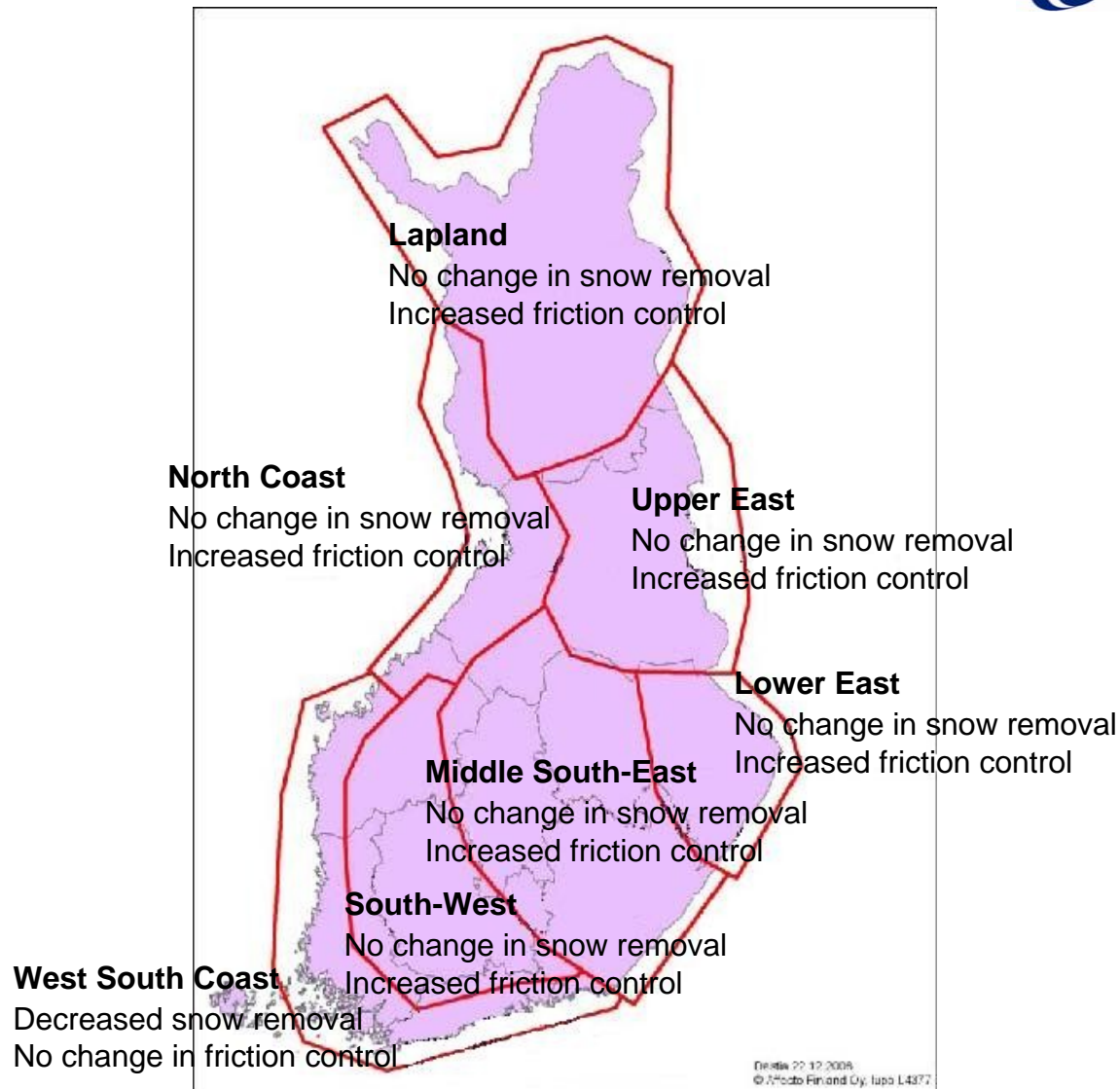
- Contingency planning (rescue operations)**
- Adaptation of road maintenance (friction control, snow removal, protection against flooding, erosion control)**
- Control of design criteria (wind, precipitation, flood levels)**
- Improvements in the strength of roads (drainage, erosion control, rising the road surface levels)**
- Warning and information.**

This report was based on scenarios A2 and B1.

Climate Change impact on Road Winter Maintenance and costs. Destia Oy, Antti Ruotoistenmäki et al. 2009

The aim was to examine the exceptionally warm winters 2006-2007 and 2007-2008 as an example of climate in the future. The maintenance actions from those period were calculated. The costs of future actions were estimated.

One result is that the maintenance costs by climate change effects have been estimated to rise.



Change in the winter maintenance areas in Finland by Destia Oy.



Frost damage on a gravel road in Raattama. Photo J. Leskinen

What is going on ?

- The European ERA-NET ROAD research programme "Road Owners Getting to Grips with Climate Change" is finished by the end of year 2010.

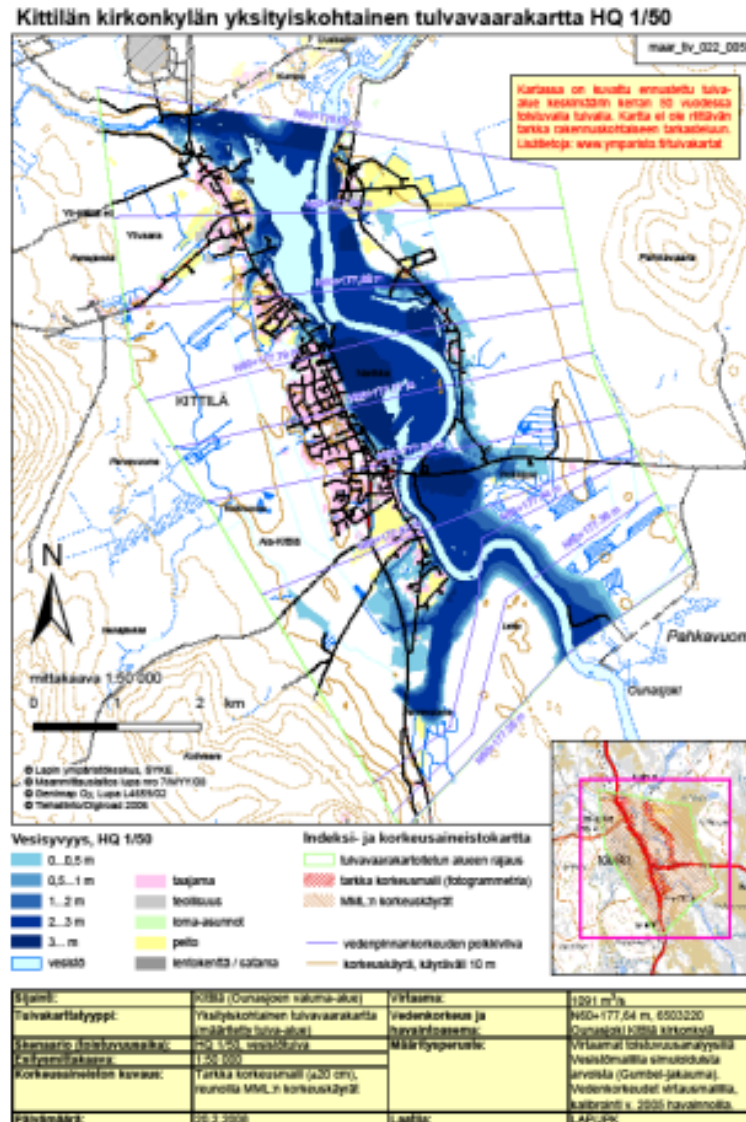
Finished researches etc:

- Strengthening of climate policy in road maintenance. Sito Oy 2009.
- Adaptation of railway management to climate change, preliminary study. Finnish Rail Administration 2008.
- Climate change impacts and adaptation measures in Maritime Administration 2009.
- Participation of FTA in projects dealing with climate change and goods traffic. Sito Oy and The Finnish Meteorological Institute.
- Klimaatti - climate change newsletter



- **Centres for Economic Development, Transport and the Environment, Transport and Infrastructure regions have made risk analysis of changing weather conditions (Uusimaa, Turku, Keski-Suomi). Häme Region has made risk analysis in 2009.**
- **In charge of following climate change issues in Finnish Transport Agency (firstname.lastname@fta.fi) are:**
 - **Matti Piispanen: floods, action plans in exceptionally weather conditions**
 - **Päivi Nuutinen: planning instructions**
 - **Olli Penttinen: gravel roads**
 - **Mikko Räsänen: mitigation**
- **Centre for Economic Development, Transport and the Environment, Transport and Infrastructure Lapland Region has made contingency plan 2007.**
- **Climate change strategy for many cities and areas has been made. In Lapland it has started this year.**





Flood risk map in the Kittilä area. HQ 1/50. Centre for Economic Development, Transport and the Environment, Lapland Region.