



Assessing disruptive effects of climate change on road networks with Road Weather Information System data

P. Saarikivi

Foreca Consulting Ltd, Helsinki, Finland (pirkko.saarikivi@foreca.com, +358 9 6689 6411)

Climate change scenarios based on ordinary meteorological data have large limitations in respect to resolution. To assess disruptive effects of climate change on road networks, local-scale effects can be revealed by combining the best traditionally made climate scenarios with the much more accurate spatial data observed by field stations in the Road Weather Information systems (RWIS). These are installed in most northern hemisphere countries being susceptible to wintertime weather hazards to road traffic. One successful example of this kind of downscaling method is ERANET-ROAD project IRWIN (2008-2010), which developed a novel database of possible future road condition scenarios. Observations from the Swedish and Finnish RWIS stations were collected from national Road Administrations from as long time span as has been archived with homogeneous contents and quality. The target was reached to get 10 years of observations of air and surface road temperature, moisture, wind speed, rainfall amount and precipitation type. The final phase of the project developed a winter index technique to evaluate such phenomena as the spatial variations of winter maintenance needs as well as the cost/benefit of various winter maintenance strategies.

Method can be utilised also in the study of extreme events caused by climate change. This research is continued in FP7 project EWENT - Extreme weather impacts on European networks of transport (2009-2012).