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# Experiences in Long Range Forecasting of Floods in Finland and Ice Cover in the Baltic Sea

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Long term weather prediction has the potential for improving the early warnings of prolonging weather and climatic situations. It has also the potential for making new kinds of impact forecasts that can for instance be used as a basis for financial planning of weather dependent businesses.

A first tailor-made climate watch and operational tests for long term impact forecasting were made in Finland during winter and spring 2012-2013. The climate watches concerning the risk for spring floods in April-May were issued by the Finnish Environment Institute, SYKE. For Finnish authorities these climate watches were delivered via multi-hazard early warning system LUOVA. Long range flood forecasts are based on hydrological and meteorological observations and predictions and Watershed Simulation and Forecasting System (WSFS) model of SYKE. The information used in the system include the satellite data of snow cover and extent, water equivalent, precipitation from weather radar as well as long term forecasts of temperature and precipitation from ECMWF.

For the safety of marine traffic over the Baltic Sea pilots of operational ice predictions for period of 30-60 days were made during 2012-2013 by the Finnish Meteorological Institute, FMI. This was done by employing the daily operational ice charts of the Baltic Sea, available short and long term weather forecasts, re-analyses and climatological and marine reviews and statistics.

Based on the experiences gained, long range impact forecasting appears to be potentially viable in Finland and the Baltic Sea at least during winter and spring. Therefore also climate watches during the cold season appear to be possible. Results of the climate watches of the spring floods in Finland and experiences in the Baltic Sea ice forecasting will be presented.