Regional Earth System Modelling Network for the Arctic (RESMoNA)

Report from
RESMoNA Meeting in Oslo, 14th – 15th May 2003

The meeting was hosted by the Norwegian Meteorological Institute and chaired by Professor Sigbjørn Grønås, University of Bergen.

15 scientists from five countries attended the meeting; see the attached list of participants: 2 from Denmark, 1 from Finland, 2 from Sweden, 2 from Germany and 8 from Norway. Iceland apologized for not being able to participate this time.

The program included seven presentations and a concluding discussion. A meeting dinner was arranged the first day. Program and abstracts of the presentations are attached.

Summary of discussion

The meeting was concluded with a short discussion based upon the material presented by seven speakers during the meeting.

An important method in regional climate research is downscaling of global simulations of different emission scenarios. The downscaling is done with empirical and dynamical methods both in project RegClim (Norway) and dynamically in PRUDENCE (EU). By using different models and different emission scenarios there will be an ensemble of results which give information about the uncertainty of the future climate development. Scientists dealing with impact studies need input data from the climate projects also with some knowledge of the statistical properties of the data. An exchange of data between the Nordic climate groups and projects will be beneficial to all. There are ongoing efforts in all Scandinavian countries to make data more easily available to other scientists within the area of climate research and impact studies. The PRUDENCE project will make daily regional model output available online.

Data from the climate projects are presently used for impact studies within the area of:

- -hydrology
- -forestry
- -agriculture
- -transport
- -sea state and surge modeling

Daily data are important in order to study extreme events. Such data are only available from dynamical downscaling of global scenarios.

Different models and emission scenarios give different results for regional climate change. Some of the resulting scenarios are less realistic than others, but we do not have a reliable method to select the most probable scenarios. One strategy could be to display a list of variables and try to attach a quality mark to each variable. Such a list could be valuable for impact studies where the variables are of different importance to the topic in focus. A lot of effort worldwide is put into the question of how to assess the quality of climate models.

What strategy do we use to improve climate models? It would be nice if there could be an exchange of modules developed by different Nordic groups. Examples of areas that need further development are the parameterization of clouds and arctic boundary layer. There should be a synergy between research in climate, weather forecasts and seasonal forecasts, since the basic part of the models are the same.

A validation of models also requires observational data of a high quality. The need for retrieval of such data was recognized, in particular the ongoing collection of Arctic data like snow data collected in the former Soviet Union as performed in the INTAS project.