

Prediction of Regional scenarios and Uncertainties for Defining European Climate change risks and Effects (PRUDENCE)

Contract EVK2-CT-2001-00132

Participants

Abbreviation	Institutes / Country
DMI	Danish Meteorological Institute, Denmark (Coordinator)
CINECA	CINECA High Performance Systems Division, Italy
DMN.CNRM	Météo-France, Toulouse, France
DLR.IPA	Deutsches Zentrum für Luft- und Raumfahrt, Germany
UKMO	Hadley Centre for Climate Prediction and Research, UK
ETH.AS	Swiss Federal Institute of Technology, ETH, Switzerland
GKSS.IC	GKSS Forschungszentrum Geesthacht GmbH, Germany
MPG.IMET	Max-Planck-Institut für Meteorologie, Germany
SMHI	Swedish Meteorological and Hydrological Institute, Sweden
UCMAD.FC.TAA	Universidad Complutense de Madrid, Toledo, Spain
UPMAD.EIAG.PFV	Universidad Politécnica de Madrid, Spain
UNESCO.ICTP.PWC	The Abdus Salam Intl. Centre for Theoretical Physics, Trieste, Italy
SPFDK.DSS	Danish Institute of Agricultural Sciences, Denmark
RISO.SAD	Risø National Laboratory, Denmark
UFRI.FS.DGS	University of Fribourg, Switzerland
FEA.IRD	Finnish Environmental Institute, Finland
UREAD.MET	University of Reading, United Kingdom
ULUND.DPE.PE.CIG	Lund Universitet, Sweden
SMASH.CIRED	Centre International de Recherche sur l'Environnement et le Développement, France
UEANG.CRU	University of East Anglia, United Kingdom
FMI.MR	Finnish Meteorological Institute, Finland
KNMI	The Royal Netherland Meteorological Institute, The Netherlands
DNMI	The Norwegian Meteorological Institute, Norway

Project period

1 November 2001 – 31 October 2004

Objectives

PRUDENCE is a European-scale investigation with the following objectives:

1. to address and reduce deficiencies in climate change projections;
2. to quantify our confidence and the uncertainties in predictions of future climate and its impacts, using an array of climate models and impact models and expert judgement on their performance;
3. to interpret these results in relation to European policies for adapting to or mitigating climate change.

Climate change is expected to affect the frequency and magnitude of extreme weather events, due to higher temperatures, an intensified hydrological cycle or more vigorous atmospheric motions. A major limitation in previous studies of extremes has been the lack of: appropriate computational resolution - obscures or precludes analysis of the events; long-term climate model integrations - drastically reduces their statistical significance; co-ordination between modelling groups - limits the ability to compare different studies. These three issues are all thoroughly addressed in PRUDENCE, by using state-of-the-art high resolution climate models, by co-ordinating the project goals to address critical aspects of uncertainty, and by applying impact models and impact assessment methodologies to provide the link between the provision of climate information and its likely application to serve the needs of European society and economy.

Role and Responsibility of DMI

DMI is coordinating this project, which means that we have the responsibility for ascertaining that everything is carried out as specified in the contract, and for reporting the project progress to the EC.

We are maintaining a web site as the primary information gateway within the project. As part of this site, a data distribution centre will be built up for distribution of model output to the participating impact model groups. After the conclusion of the project this data centre will become public.

With the regional climate model HIRHAM we are taking an active part in the intensive modelling effort in the project, which aims at collecting model output from a number of models and driving conditions. At the DMI we will be carrying out experiments with a total of about 300 model years over Europe in 50km resolution and 60 years in 25km resolution.