

## IS-ENES: Infrastructure for the European Network for Earth System Modelling

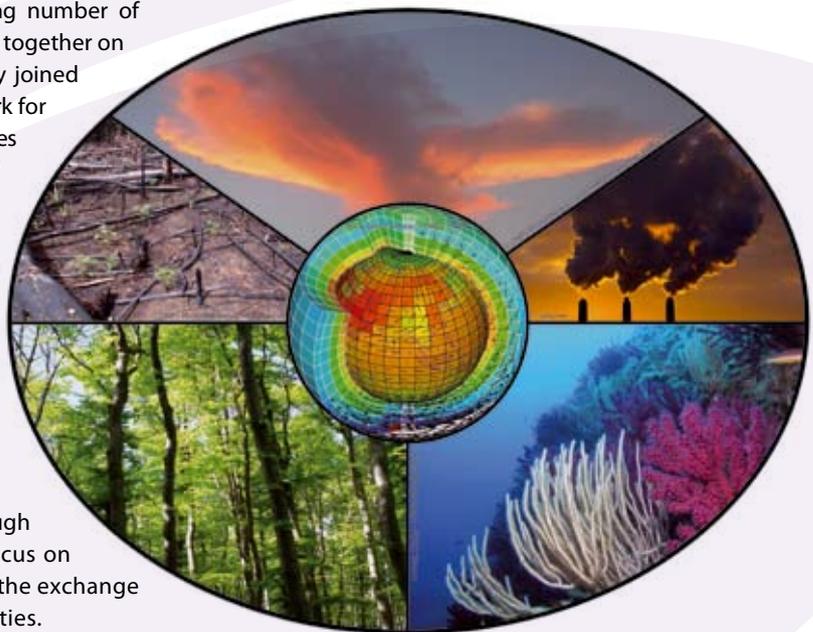
The challenges posed by climate change affect the entire international community. Climate Earth system models are key tools to understanding climate change and its effects on society and are at the basis of the International Panel on Climate Change (IPCC) projections and EU policy on climate change. In Europe there are several groups with extensive experience in developing climate Earth system models and many of these groups already work together. The EU funded project IS-ENES aims to promote the development of a common distributed modeling research infrastructure in Europe in order to facilitate the development and exploitation of climate models and better fulfill the societal needs with regards to climate change issues.

### ● GIVING A BOOST TO EUROPEAN MODELS

Since the first framework programs, a growing number of European modelling groups have been working together on various climate change research projects. They joined together in 2001 to create the European Network for Earth System Modelling (ENES) with the objectives of helping the development and evaluation of climate Earth system models, encouraging the exchange of software and model results and promoting the development of high-performance computing facilities. It is hoped that IS-ENES will advance integration of the Earth system modelling community, leading to better models and research, and to more accurate predictions of the impact of climate change.

Improved integration will be achieved through a series of networking activities which will focus on the development of the future ENES strategy, the exchange of expertise and the creation of training activities.

The project will create a virtual Earth System Modelling Resource Centre using state-of-the-art technologies. This centre will bring together different distributed facilities and allow research groups from across Europe to have access to their data and resources. Resources will include enhanced model documentation for six European climate Earth system models and a service for common tools and model components to facilitate model development and usage of models. Moreover, project partners will also develop a common evaluation infrastructure to enhance model reliability.



Central to climate change predictions is the need to access to high-performance computing (HPC) facilities. IS-ENES will organize the interface between the Earth system modelling community and the European large infrastructure projects, PRACE "Partnership for Advanced Computing in Europe" and DEISA2 "Distributed European Infrastructure for Supercomputing Applications", integrate them in an HPC-ecosystem and help prepare for the future generation of computing architectures and facilities.

## BETTER USE OF CLIMATE MODELS

IS-ENES will also promote use of Earth system model simulations to improve prediction and understanding of the future impact of climate change. This activity includes increased efforts to disseminate model results to relevant institutions, especially for the preparation of the next IPCC assessment report, and provision of better access to data through tools such as the virtual Earth System Modelling Resource Centre.

IS-ENES will also provide a prototype for a web service interface to bridge the gap between the climate modelling community, the climate impact community and decision makers for developing adaptation and mitigation policies. A set of Use cases will be documented as well as tools and methodologies gathered.

The project will work to bring together decision-makers and user communities. This will allow the former to choose the best course of action for dealing with climate change. Bridging the divide between research and policy is necessary to properly face the challenges climate change poses to society.

It is hoped that more countries and more research centres will become part of the growing integration between European research institutions as a result of the IS-ENES project. Expanding the scale and scope of climate modelling research will enable more researchers to have input and so improve current model research. Moreover, this will allow the results to be disseminated amongst a wider group of people and have a wider impact on policy across Europe.



**Project acronym:** IS-ENES

**Funding scheme:** Integrating activities (IA)

**EU financial contribution:** €7.6 million

**EU project officer:** Anna-Maria Johansson

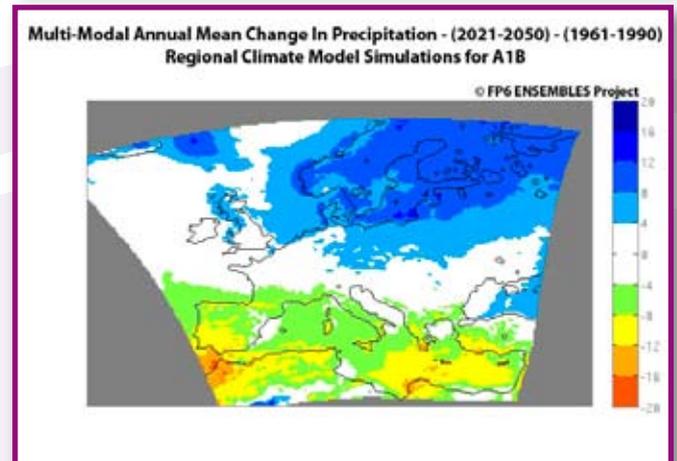
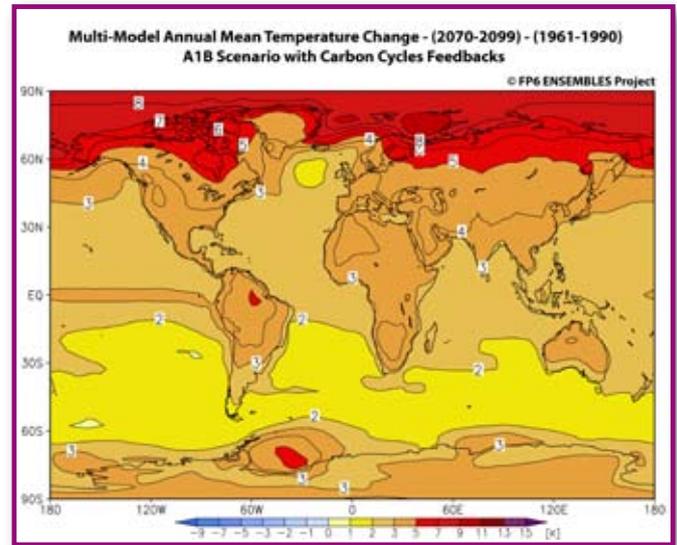
**Duration:** 48 months

**Start date:** 1 March 2009

**Completion date:** 28 February 2013

### Partners:

Centre National de la Recherche Scientifique (FR)  
Max-Planck-Gesellschaft zur Förderung der Wissenschaften (DE)  
Centre Européen de Recherche et de Formation Avancée en Calcul Scientifique (FR)  
Deutsches Klimarechenzentrum GmbH (DE)  
Finnish Meteorological Institute (FI)  
University of Manchester (UK)



Academy of Athens (EL)  
Science and Technology Facilities Council (UK)  
Centro Euro-Mediterraneo per i Cambiamenti Climatici (IT)  
The Met Office, For and on behalf of the Secretary of State for the Defence of the United Kingdom of Great Britain and Northern Ireland (UK)  
Koninklijk Nederlands Meteorologisch Instituut (NL)  
Météo France - Centre National de Recherches Météorologiques (FR)  
Sveriges Meteorologiska och Hydrologiska Institutet (SE)  
Linköpings Universitet (SE)  
Barcelona Supercomputing Centre (ES)  
Wageningen Universiteit (NL)  
Institutul National de Hidrologie si Gospodarie a Apelor (RO)  
Deutsches Zentrum für Luft – und Raumfahrt in der Helmholtz Gemeinschaft (DE)

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