

ENES

- ❖ Network of European groups interested in climate and Earth system modeling
- ❖ **Main focus** : Accelerate progress in climate and Earth system modeling and understanding
- ❖ Approximately 40 groups from academic, public and industrial world.
- ❖ Strong involvement in IPCC & several EU projects
PRISM, ENSEMBLES, METAFOR, COMBINE, IS-ENES, EUCLIPSE

IS-ENES : Infrastructure for ENES FP7 project - 2009-2012

18 partners

Infrastructure :

Models and their environment
Model data

Europe : 6 global climate models

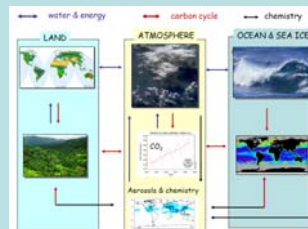
Users :

The ENES community
Regional climate models
Impact studies

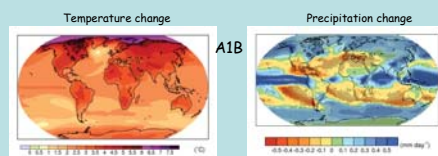
Four main objectives

- 1- Foster the integration of the European ESM community
- 2- Foster the development of ESMs
- 3- Foster high-end simulations
- 4- Foster application of ESM simulations for climate change impacts

Climate/Earth System Models ESM



At the base of IPCC climate projections



IS-ENES : 6 models for IPCC AR5

- ARPEGE-NEMO** from Meteo-France (France)
- C-ESM** from CMCC (Italy)
- COSMOS** from the MPI (Germany) & FMI (Finland)
- EC-Earth** from a consortium in Europe, KNMI (Netherlands), SMHI (Sweden), (Ireland, Denmark, Norway and Switzerland)
- HadGEM3** from the /Hadley Centre (UK)
- IPSLCM** from IPSL (France)

Provision of services

A unified access to European ESM information and software

Provide access to common software:

- ❖ OASIS coupler
- ❖ CDO data processing software
- ❖ NEMO, Nucleus for European Modeling of the Ocean



Provide access to model documentation and a network of experts

Provide evaluation toolkits for models

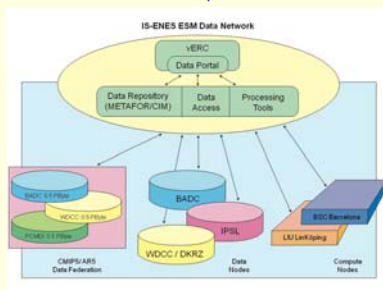
Propose a unified High-Performance Computing environment

Prepare a roadmap for ESM development, including the use of next generation multi-petaflop computers.

A unified access to the ENES distributed data network

Provide access to model simulation results, mainly future climate change scenarios

IPCC AR4, AR5



Provide support and tools to users, help:

- ❖ provision of data
- ❖ access to model results

Web service interface for the climate impact community PROTOTYPE



- Spatial resolution
- Temporal resolution
- Choice of key variables
- Coupling with impact models

Document Use-cases

e.g. Water resource, Land-use

Change in Maize yield (%)
2070/2099-1950/1980
Scenario A1B
ANR Project Autrement



Gather Tools and Methodologies e.g. dynamical and statistical downscaling