



Project no. GOCE-CT-2003-505539

Project acronym: ENSEMBLES

Project title: ENSEMBLE-based Predictions of Climate Changes and their Impacts

Instrument: Integrated Project

Thematic Priority: Global Change and Ecosystems

D2B.4 A first prototype of web service for downscaling at seasonal-to-decadal timescales (Task 2B.2.2)

Due date of deliverable: Month 18 (28-Feb-2006)

Actual submission date: 28-Feb-2006

Start date of project: 1 September 2004

Duration: 60 Months

Organisation name of lead contractor for this deliverable:

Partner 44 THE NATIONAL INSTITUTE OF METEOROLOGY OF SPAIN (INM)

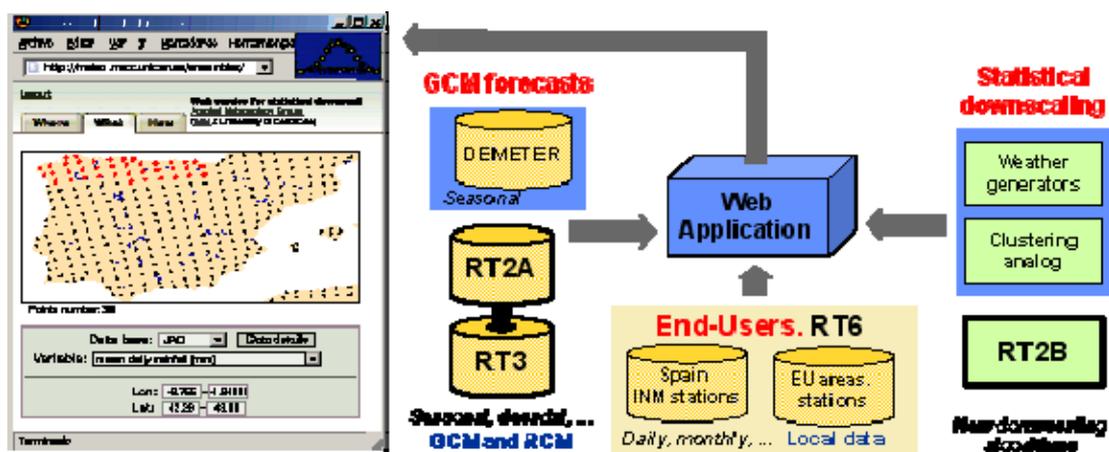
Revision [28-Feb-2006]

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	PU
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the Consortium (including the Commission Services)	

One of the Ensemble's project aims is maximizing the exploitation of the results by linking the outputs of the ensemble prediction system to a range of applications, including agriculture, health, food security, energy, water resources, insurance and weather risk management. In order to accomplish this task, both dynamical and statistical downscaling techniques will be developed by several partners of the project.

In this document we present the work done by The National Institute of Meteorology of Spain (INM, partner 44) in collaboration with University of Cantabria (UC, partner 62) to provide user-friendly access through the Web to some of these statistical downscaling techniques developed in RT2B.

Statistical downscaling techniques link model outputs to observations providing a projection operator. This operator is trained with reanalysis data (from ERA40) and is later applied to outputs of seasonal-to-decadal and climate change simulations. The following schema illustrates the components of the application. GCM forecasts (seasonal to decadal and climatic change, from RT2A and RT3) will be downscaled to local stations (or uniform observation grids) from end-users (RT6) using any of the available downscaling algorithms (RT2B). All this process will be performed from a web browser following three steps: where (region where downscaling will be performed), what (variable to be downscaled), and how (GCM output and downscaling method to be used).



The first prototype of the statistical downscaling web application is available here: <http://www.meteo.unican.es/ensembles>

The current features are:

- Observations in a 0.5 by 0.5 grid over Europe provided by JRC (*predictands*).
- ERA40 reanalysis fields over Europe (*predictors*).
- DEMETER seasonal to decadal outputs from UKMO, MPI, ECMWF models for 1997-1998 (*ouputs from models for downscaling*).
- The current downscaling method implemented in the application is an analog method described in: A.S. Cofiño, J.M. Gutiérrez, and R. Cano “Analysis and downscaling multi-model seasonal forecasts in Perú using self-organizing maps”, *Tellus A*, 57, 435-447 (2005).