Project No. 037005

CECILIA

Central and Eastern Europe Climate Change Impact and Vulnerability Assessment

Specific targeted research project

1.1.6.3.I.3.2: Climate change impacts in central-eastern Europe

D1.4: Completion of RegCM3 simulation at 25 km grid spacing over Europe for the 21st century under the A1B scenario. Provision of meteorological fields to WP2

Due date of deliverable: 1st December 2007
Actual submission date: 22th May 2008

Start date of project: 1st June 2006 Duration: 36 months

Lead contractor for this deliverable: ICTP

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	X
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)	

RegCM simulation

In the framework of the ENSEMBLES FP6 project a 100-year simulation was produced with the regional climate model RegCM3 at 25 km grid spacing for the entire European region (RegCM3-25 simulation). This simulation uses as lateral boundary conditions fields from one of the CMIP3 model simulations performed with the global model ECHAM5. The simulated period was 1950-2050 with the SRES-A1B radiative forcing from 2000 onwards.
Whitin the CECILIA project this simulation was extended up to the year 2100 in order to provide lateral boundary conditions for the very high resolution simulations planned by other CECILIA partners over different CECILA sub-domains. These latter simulations cover the periods 1961-1990, 2021-2050 and 2071-2100.
As illustrative examples, Figures 1 and 2 show the differences between the seasonal 30-year mean of 2071-2100 and the that of the reference period 1961-1990 (the same as in PRUDENCE) for temperature and precipitation and the 4 seasons of the year. They indicate pronounced warming over the CECILIA region, generally maximum in winter and minimum in spring and fall but with seasonally dependent regional differences. The pecipitation change signal over the CECILIA region shows a widespread increased in winter and fall and a more mixed signal in the other seasons (increas in the central and norther CECILIA regions and decrease in the southern ones).

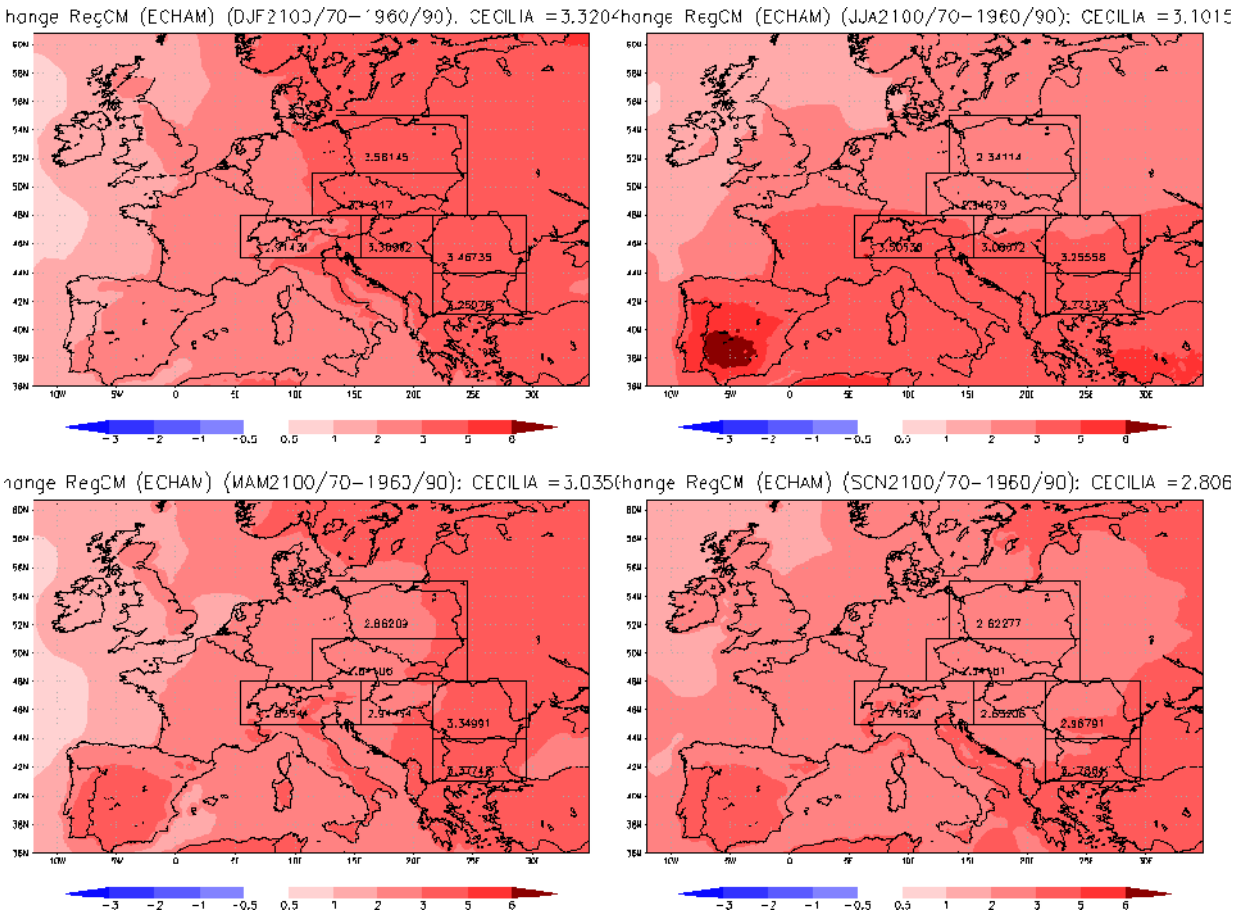

Figure 1: Surface air temperature change signal (degrees C, 2071-2100 minus 1961-1990) over the European domain in the RegCM-25 experiment for the 4 seasons. The boxes indicate values for the six CECILIA regions.

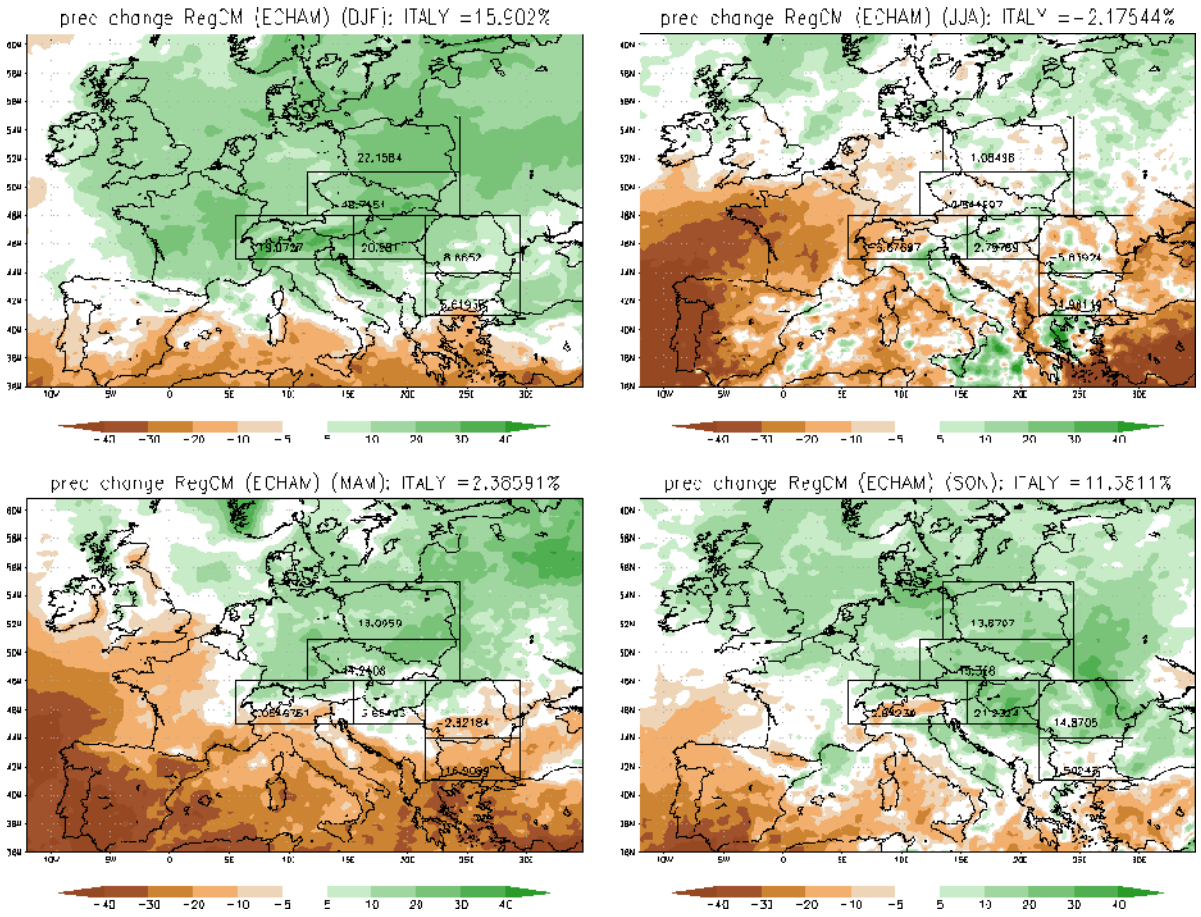

Figure 2: Precipitation change signal (%, 2071-2100 minus 1961-1990) over the European domain in the RegCM-25 experiment for the 4 seasons. The boxes indicate values for the six CECILIA regions.

Provision of meteorological fields to WP2

All the monthly and daily mean surface fields from the RegCM3-25 simulation have been made available for the CECILIA partners in order to carry out first-stream impact studies. They are stored on a ICTP server accessible from outside.
The 6 hourly atmospheric fields have also been made available to the partners to drive the nested 10 km RegCM simulations over different CECILIA sub-domains as described in deliverable D2.3.