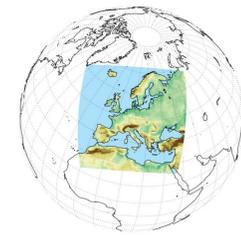


WCRP CORDEX A new generation of regional climate scenarios for Europe

The EURO-CORDEX initiative

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EURO-CORDEX within the CORDEX framework

The WCRP Coordinated Regional Downscaling Experiment (CORDEX, www.cordex.org, Giorgi et al., 2006) provides an internationally coordinated framework to improve regional climate scenarios. This includes harmonization of model evaluation activities and the generation of multi-model ensembles of regional climate projections for the land-regions worldwide.

As part of the global CORDEX framework the EURO-CORDEX initiative (www.euro-cordex.net) provides regional climate projections for Europe at 50 km (EUR-44) and 12.5 km (EUR-11) resolution, thereby complementing coarser-resolution data sets of former activities like PRUDENCE (Christensen et al., 2007) and ENSEMBLES (Hewitt and Griggs, 2004, van der Linden and Mitchell, 2006).

The EURO-CORDEX community

EURO-CORDEX is actively supported by 33 modelling groups. It is a voluntary effort of many of the leading and most active institutions in the field of regional climate research in Europe and is coordinated by D. Jacob together with E. Katragkou and S. Sobolowski. EURO-CORDEX (similar to the entire CORDEX initiative) is not providing funding to any participant, but is fully relying on the enthusiasm of the participating researchers and institutions (see www.euro-cordex.net for details). This enthusiasm is based on the aim to improve climate projections, in order to enable the European society to better adapt to unavoidable climate change and to design more efficient mitigation strategies.

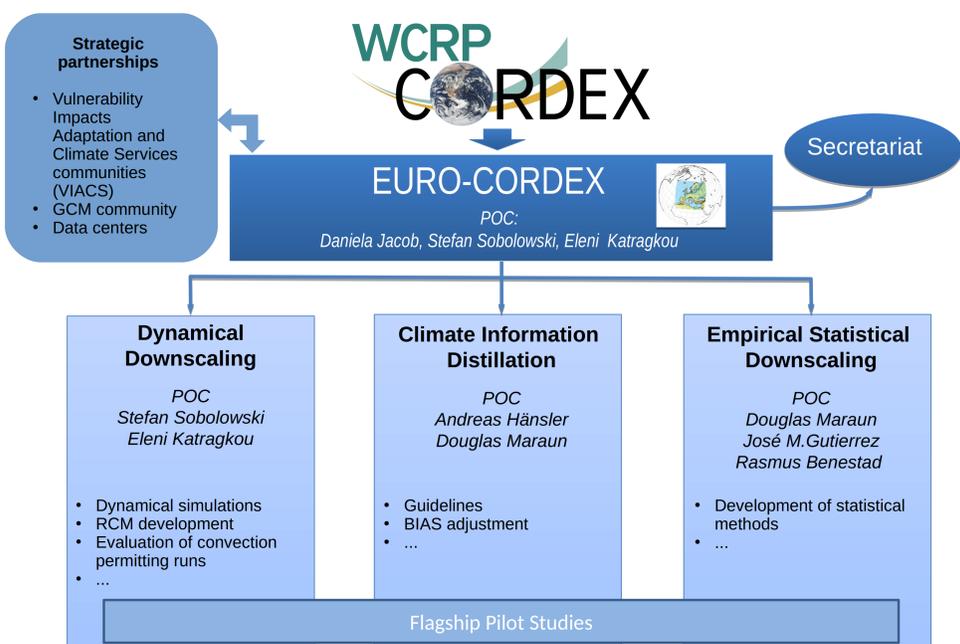


Figure 1: EURO-CORDEX structure

Flagship Pilot Studies

Convective phenomena at high resolution over Europe and the Mediterranean

Investigate convective-scale events, their processes and their changes in a few key regions of Europe and the Mediterranean using convection-permitting RCMs, statistical models and available observations

„LUCAS – Land Use & Climate Across Scales“

Impact of land use changes on climate in Europe across spatial and temporal scales:

- Quantification of the relative contribution of LUC to the past climate evolution
- Identification of robust biophysical impacts of LUC on the regional climate under different level of global warming

EURO-CORDEX research

In the beginning of the EURO-CORDEX effort, the focus lies on the evaluation of various aspects of the regional simulations in present-day climate. In Vautard et al. (2013), the ability of the EURO-CORDEX ensemble (EUR-11 and EUR-44) to accurately simulate heat waves at the regional scale of Europe was evaluated.

Kotlarski et al. (2014) documents the performance of the EURO-CORDEX models in representing the basic spatio-temporal patterns of the European climate, with respect to near-surface air temperature and precipitation for the period 1989–2008.

In many research activities within EURO-CORDEX, future climate change is investigated. In Jacob et al. (2014) the first set of high-resolution simulation (EUR-11) is presented (see Figure 2 as an example).

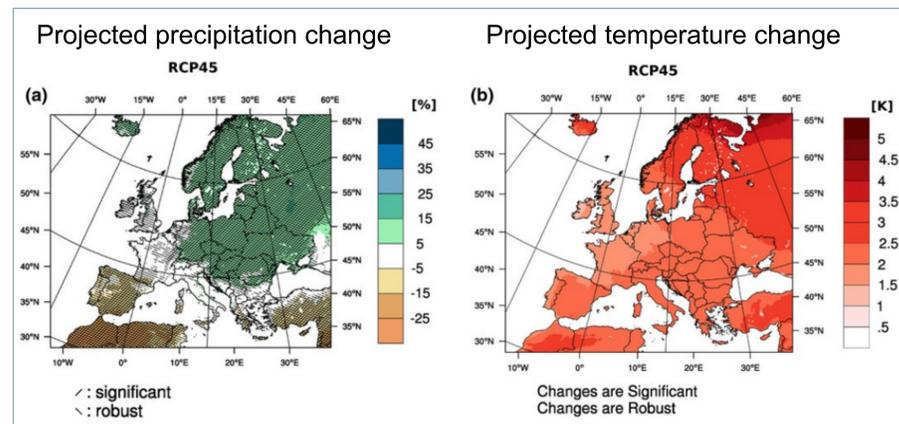


Figure 2. Projected changes of total annual precipitation (%) (left) and annual mean temperature [K] (right) for 2071–2100 compared to 1971–2000, for the RCP4.5 scenario. Hatched areas indicate regions with robust and/or statistical significant change (a). Changes are robust and significant across the entire European continent (b).

EURO-CORDEX Simulations

The regional simulations are based on CMIP5 global climate projections and representative concentration pathways (RCPs).

- 37 simulations available for users on EUR-44, 50 km
- 31 simulations available for users on EUR-11, 12.5 km

EURO-CORDEX data is available via the ESGF. Information of how to access the data can be found on <http://data.euro-cordex.net>

