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Producing, handling and disseminating information on regional climate change at the Swedish Meteorological and Hydrological Institute: Experiences from CORDEX

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The international coordinated regional downscaling experiment (CORDEX) was initiated as detailed regional climate change information was lacking for a number of world regions at the time of the fourth assessment report from the IPCC. The Swedish Meteorological and Hydrological Institute (SMHI) has been a key driver of CORDEX contributing to its initiation and design and by performing a large number of regional climate model simulations. An important part of the work relates to data and resource management establishing a streamlined work flow for import and preparation of boundary data, storing and post-processing result data from model simulations, production of standardized output files and quality control, and finally publication of the data through the Earth System Grid Federation. In addition, capabilities for bias-adjustment have been set up so that bias-adjusted data can be published in parallel to raw model output. All data handling steps have been put in place in order to facilitate further use and dissemination of results. It is clear that the ensemble approach of CORDEX allows for better identification of robust climate change signals and uncertainty analysis compared to what was previously possible. In parallel to the production-oriented scenario work an important effort has been oriented towards knowledge transfer and capacity building. ’

One central idea in CORDEX has been to involve scientists from different regions of the world including those where the scientific knowledge on regional climate was previously less extensive or even non-existent. Currently, in April 2015, more than 1500 users worldwide have accessed and downloaded CORDEX data from the Swedish ESGF node clearly illustrating the strong impact of CORDEX as a source of regional climate information. These data serves as input to impact studies and to work on adaptation to climate change and is therefore a fundamental resource needed in climate services.