



Strategy for providing climate services for Germany based on SSP EURO-CORDEX simulations

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Deutscher Wetterdienst provides climate services for Germany, especially in the scope of climate adaption. We will present our processing workflow, including quality assessment, bias-adjustment, statistical downscaling, and our resulting products that will support the introduction of a new climate projection ensemble in 2026.

Current products and consultancy are based on EURO-CORDEX CMIP5 simulations. However, in the last years one challenge has been that national and federal agencies in Germany use different ensembles due to various reasons.

In close coordination with these partners we have developed a workflow to create a new consistent national ensemble based on CMIP6 to provide climate services for climate adaption in Germany. Following a technical data check, a three-step quality assessment, progressing from a global to a regional and finally a local scale. The assessment is based on three pillars: the evaluation of global teleconnections, circulation patterns over Germany and the distribution of temperature and precipitation over Germany and its subregions. Each GCM-RCM combination is assigned a quality index to facilitate the selection of a reference ensemble, omitting simulations with insufficient agreement with observational data. The new ensemble will then be further statistically downscaled and bias-adjusted. We will derive a range of products from this data, including climate indicators and a new web service for visualization and data access. Since not all partners are equipped to process large volumes of data, we will also provide a smaller ensemble that preserves the full ensemble range by excluding highly similar members. All data, along with a quality assessment for each ensemble member, will be made available to impact modelers and other users.