

UDAG - Updating the data basis for adaptation to climate change in Germany

The aim of *UDAG* is the provision of up-to-date regional climate projections for the use in the German adaptation strategy. The regional climate projections currently used for taking adaptation measures are based on the global climate projections produced within the Coupled Model Intercomparison Project Phase 5 (CMIP5). These global climate projections have been updated in recent years in the framework of CMIP6. The Shared Socioeconomic Pathways (SSPs) newly introduced in CMIP6 and the further development of the climate models make an update of the regional climate projections for Germany necessary.

Therefore, *UDAG* will provide a quality-checked ensemble of regional climate projections for Europe (at approx. 12 km) and for 'hydrological Germany' (i.e., including the river basins draining into Germany at approx. 3 km). For this purpose, the global climate projections are downscaled to 12 km for 6-8 global climate models using the regional climate model ICON-CLM for the SSP3-7.0 and SSP1-2.6 scenarios supplemented with some simulations for SSP5-8.5. Additionally, the empirical-statistical method EPISODES downscales all CMIP6 ScenarioMIP projections that provide the necessary input data. In a second step, regional climate projections spanning the bandwidth of the 12 km ensemble are selected and further downscaled to 3 km using ICON-CLM. This creates an unprecedented ensemble of convection permitting climate projections for 'hydrological Germany' at high temporal and spatial resolution.