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User needs and user-oriented products for decadal predictions

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The German research program MiKlip aims at developing an operational decadal climate prediction and evaluation system. Within this context the research project SUPPORT at the German weather service (Deutscher Wetterdienst DWD) collects user needs of decadal predictions, esp. German government agencies, and develops user-oriented test products in cooperation with users.
To gather user needs a questionnaire has been distributed to 69 participants from public administration, agriculture, water management and research and evaluated. On the first user workshop in April 2016 30 representatives of governmental agencies, research institutions and companies discussed user needs, the potential and limits of decadal predictions as well as meaningful and possible user products. Decadal prediction products should be structured on multiple layers for different user groups: general information for decision makers, specific predictions for climate consultants and original data for impact modelers. To inform a large audience on decadal prediction products a newsletter has been established. Interested users have been contacted to discuss possible cooperation in developing user-specific products.
The MiKlip website presents decadal predictions as an insight into recent research for the public (http://www.fona-miklip.de/decadal-climate-prediction-system/decadal-forecast-for-2017-2026/). They consist of global 4-year mean temperature predictions of MPI-ESM-LR at a geographical 5° grid. The prediction skills of ensemble mean and probabilistic predictions are determined via the MSESS and RPSS compared to the reference predictions observed climatology and climate projections. A traffic light system shows the category green/ yellow/ red if the decadal prediction skill is better than both/ one/ no reference prediction. To test if this information can be understood and applied by different user groups a questionnaire has been distributed and evaluated. The perspective of this MiKlip website and the experience of users of seasonal predictions are discussed on the second user workshop in May 2017.
The prediction skills of further user-relevant variables have been analyzed, e.g. precipitation and wind. A user-specific drought index of the DWD has been applied to decadal predictions. It combines the standardized precipitation of the SPI-DWD and the standardized climatic water balance (precipitation minus evaporation) of the SPEI to reach a nearly global coverage. The verification is done analogue to the MiKlip website. The investigation of the prediction skills of temperature- and precipitation-based ETCCDI indices is planned.