



Narrowing the gap between climate and climate impact research

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The German research project ReKliEs-De produced 28 high resolution (12 km) regional climate projections for Germany and the catchments of large rivers draining into Germany. Besides providing simulation results and their scientific investigation, a central focus of the project was to deliver the results in a way that eased the use of the results in climate impact research, policy consultancy and decision making contexts. Thus, large effort went into analyzing and post-processing the data. More than 6.000 graphics were produced from the raw model output data and provided on our data web-page.

At the final project presentation in December 2017, participants suggested to hold a user workshop roughly one year after the project end, to evaluate the use of the data and identify possible future improvements. This workshop took place in February 2019.

The workshop format was entirely user driven: the former project leader provided only the technical organization; the workshop then consisted of four discussion sessions with initial input-presentations by the users themselves. The workshop yielded some interesting results:

- Several users had used the post-processed graphics to get a first impression of results from particular models and to compare them to each other. So, in retrospect that work was justified.
- Large problems remain for users on windows-platforms and GIS-users. These users need more support to work with climate data.
- There is still a gap in the desired spatial resolution (12 km is too coarse for several applications) and temporal resolution (only daily data were stored in the project, due to the enormous volume of higher resolution data).
- Larger data stores and faster data exchange rates could help with larger data volumes, but still the data become less reliable with increasing resolution (both, temporally and spatially). Thus, there is still an urgent need to develop new analysis methods in climate impact research that are better suited to the available climate model data.
- The use of ensembles of simulations gained much support since the development and application of a method to reduce ensemble size (Dalelane et al., 2018). The method samples the boundaries of the data distribution in several parameters (multi-dimensional). Thus, it avoids the selection of one or a few “best” models, instead aims to cover the whole distribution. The method, however, requires the exclusion of “suspect outliers”, to avoid them distorting the final shape of the ensemble space. This remains a challenge and calls for in depth research.
- Finally, the workshop participants appreciated the interactive format and the user steering of the workshop. They felt more valued and in charge than in similar workshops with a stronger steering and input from the project partners or workshop organizers. Thus, the do-it-yourself-approach seems a well-received and workable solution.