PROCLIAS TG 1.2 Automatic QC/QA tool

Preparing the QA-Tool: stream network assessment for the global water sector

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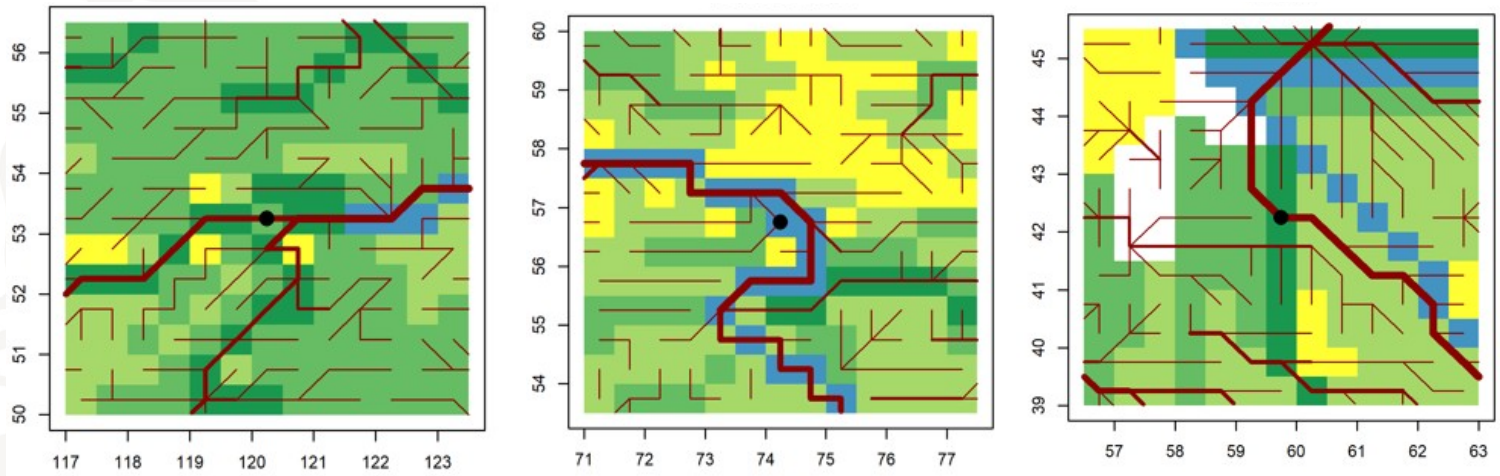
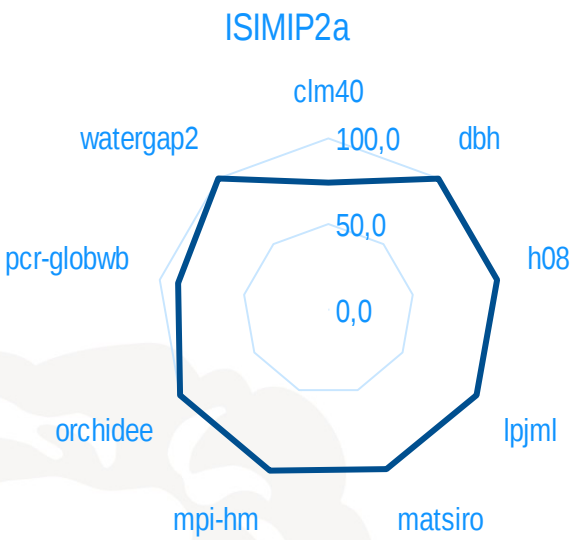
background

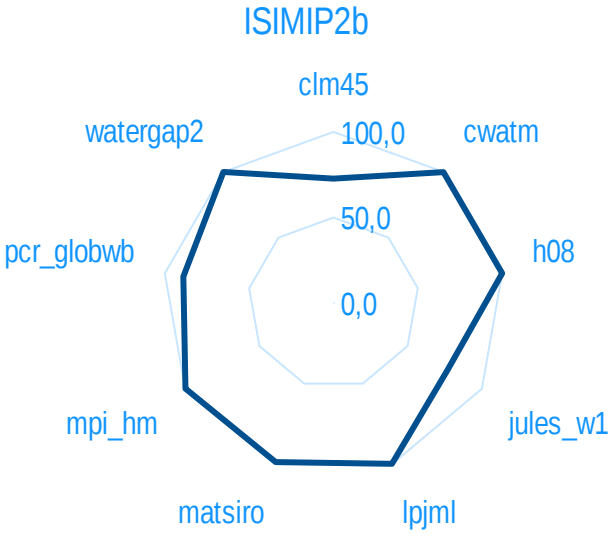
- partly **deviating drainage networks** from global water models hinders consistent evaluation with station data (e.g. in case the grid cell where the station is located is not within the stream network)
- Based on a co-registered gauging dataset (to the ISIMIP DDM30, 1509 stations) (Müller Schmied & Schiebener) and the contributing global water models to ISIMIP2a, ISIMIP2b and ISIMIP3a (those that provided river discharge / streamflow), a plot for each station and model has been created with gridded discharge and location of the station & river network
- Manual assessment if station is within the river network of the model

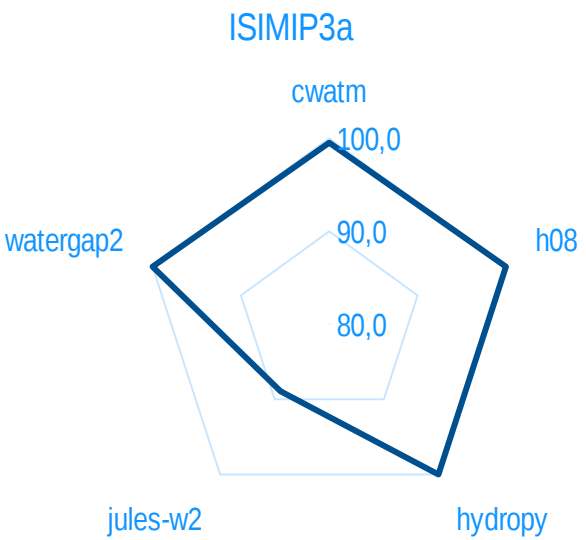


Müller Schmied, Hannes, & Schiebener, Leonie. (2022). The global water resources and use model WaterGAP v2.2e: streamflow calibration and evaluation data basis (1.1) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.7255968

% of stations that are within the ISIMIP DDM30 river network

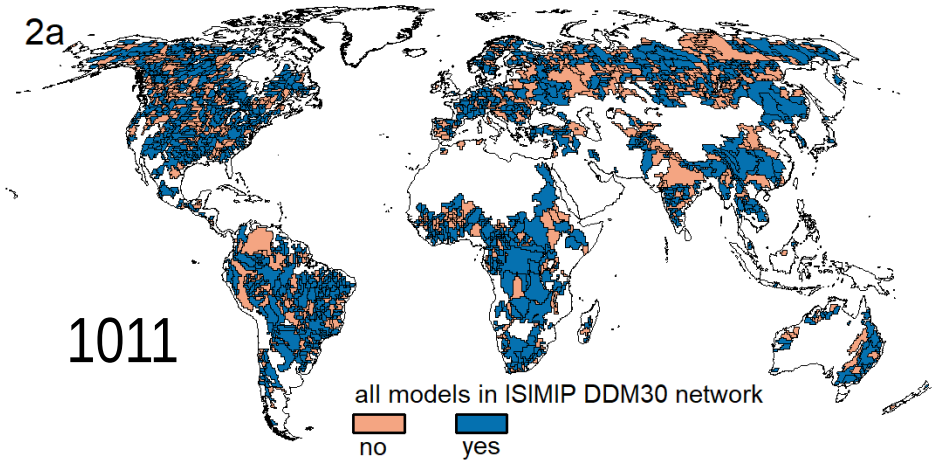


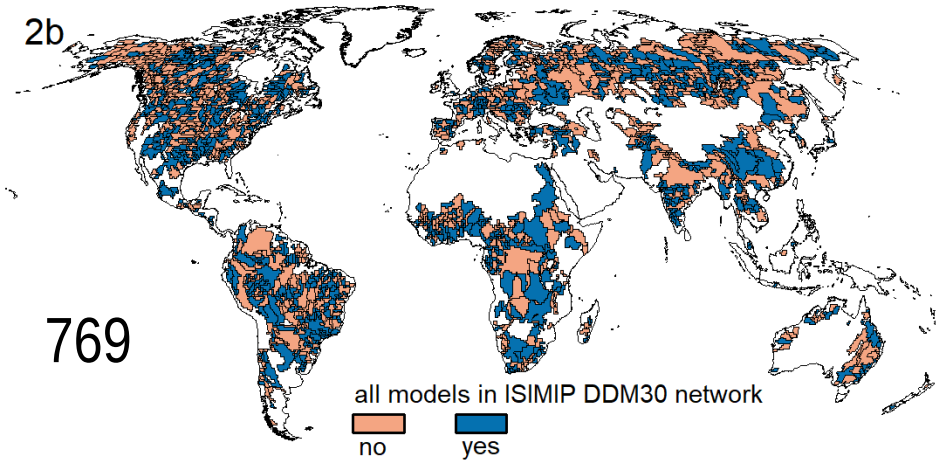


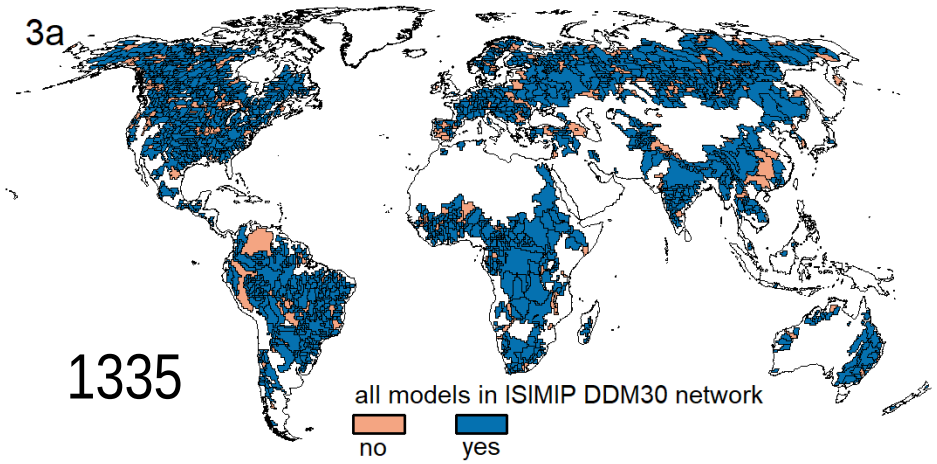


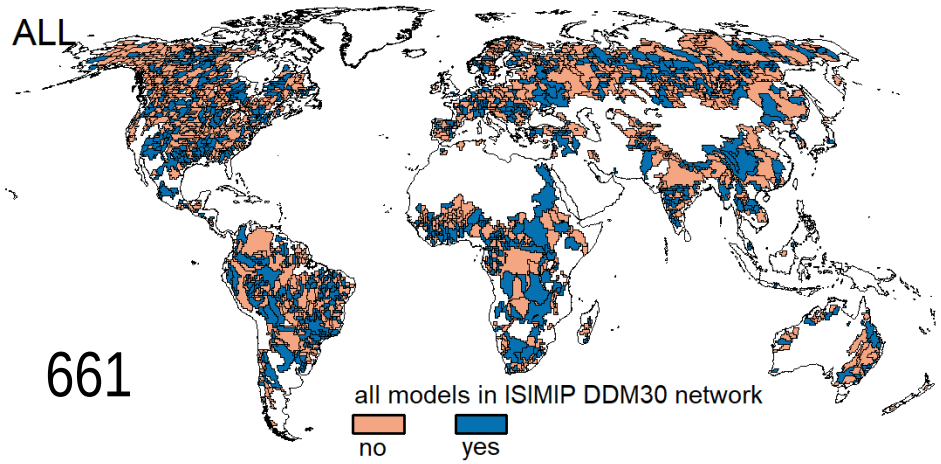
- Several water models fit very well to the river network but not all could lead to consistency problems when comparing gridded model output to station data not „fair“ evaluation
- for QA-Tool meaningful as reference data to use those stations where all models are within the river network.

Resulting spatial pattern and number of stations where all models fit to ISIMIP DDM30

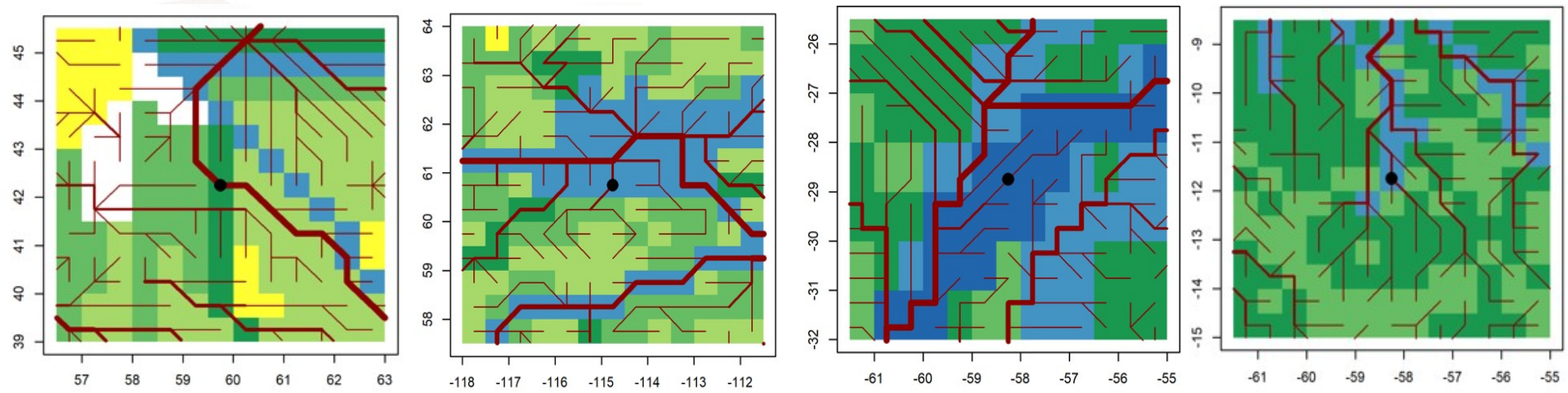








- Interesting patterns for some models and good to learn / document (resolution, handling of large water bodies, different routing approach / routing network, calibration parameters)



- Some stations have to be excluded for a fair model evaluation (and eventually also for impact assessment)

Next steps

- Consolidating of the results (checking a few stations for consistency)
- Writing a report & interaction with the modelling teams
- Publishing the results
- Selecting a subset of basins with a long time series and geographic / hydroclimatic distribution as input for the QA-Tool

- Note that the decision if a station is within the streamflow network was done manually and could thus be subject for misinterpretation.