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# Analysis of projected drought hazards for Central/Eastern Europe

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Projected future changes (i.e. mean values, distributions, inter-annual varibility and empirical probabilities) of several drought indices are analyzed for the period 2071-2100 (compared to 1961-1990, as a reference period). The comparison includes simple precipitation index, standardized precipitation anomaly index (SAI), De Martonne aridity index, Thornthwaite index, Lang's rainfall index, Ped's drought index, and Foley's anomaly index (FAI). The monthly time series have been calculated from different regional climate model simulations of the models PRECIS and RegCM adapted for Central/Eastern Europe at the Department of Meteorology, Eotvos Lorand University.

The model PRECIS is a hydrostatic regional climate model developed at the UK Met Office, Hadley Centre. The model uses 19 vertical levels with sigma coordinates for the atmosphere, and the horizontal grid is transposed to the Equator in order to avoid spurious results due to high latitudes. The horizontal resolution of PRECIS experiments is 25 km, which seems to be appropriate and fine enough to model the fine scale spatial patterns. The driving boundary conditions are provided by the outputs of global climate model HadCM3 taking into account the SRES A2, B2 and A1B emission scenarios.

The model RegCM is a 3-dimensional, sigma-coordinate, primitive equation model, and it was originally developed by Giorgi et al. Currently, it is available from the ICTP (International Centre for Theoretical Physics). The horizontal resolution of RegCM experiments is 10 km, and 18 atmospheric vertical levels have been used. The driving boundary conditions are provided by the outputs of global climate model ECHAM5 taking into account the SRES A1B emission scenarios.

According to the results the main finding emphasizes that significant drying is projected in the region, especially, in summer.