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# Model simulations on climate change over the South Caucasus during 21$^{st}$ century

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The regional climate change has been analyzed for the South Caucasus region using the outcomes of the regional climate model HadRM3P, with horizontal resolution $0.22^0$ x $0.22^0$ (25 x 25 km), which allows having more detailed information on climate in the regional scale. It uses data from the HadAM3P atmosphere-only global model to provide its lateral boundary conditions, which in turn is a downscaling of the Hadley Centre's HadCM3 coupled ocean-atmosphere model. This study is focused on area covering south Caucasus republics - Armenia, Azerbaijan and Georgia.

The basic observed data used for the evaluation of model baseline is global gridded high resolution data set (New et al 2002) from Climate Research Unit (CRU). Observed data at 46 meteorological stations in Armenia have been also used in the study.

The assessment of climate change was based on the HadRM3P model simulation output data for the basic 1961-1990 period (model baseline) and the future projections of climate (2071-2100) for IPCC SRES A2 scenario.

In the present study the variables have been identified for which the changes projected in the simulations are found to be robust and large over the area of our interest. Accordingly, a vulnerability assessment for the South Caucasus region has been carried out and the adaptation measures have been recommended.