Green CORDEX Central Asia

Abstract

With the goal of contributing to the objectives of the CLM-community and CORDEX initiative, in this project we aim to downscale a set of state-of-the-art CMIP6 simulations of 21st century by means of a core of high resolution regional climate models (RCMs) over the CORDEX Central Asia (CORDEX-CA) domain, at a final horizontal resolution of 0.22°. Until now we are the only members of the CLM-community planning to conduct CORDEX-CA simulations using the COSMO-CLM model. CORDEX aims to advance the science of regional climate modelling and to provide high resolution information on future climate change to be used in impact studies. The project outcomes, along with the bias-corrected climate-input data sets on a 0.5°x0.5°C global grid from the ISIMIP project (https://www.isimip.org/), would provide impact scientists with comprehensive information over the CA domain. The CA's water crisis is one of the major drivers of the recent and future social/political conflicts in the region.

A large extension of arid and semi-arid climate zones and complex orographic terrains over the CA domain, makes the use of RCMs a useful tool for increasing the resolution of the climate data.

The COSMO-CLM has not been applied to downscale the CMIP6 simulations for this region. Results of the simulations will be part of the CMIP6 experimental framework, contributing to the compilation of the next IPCC report.