

Project title: Congo
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The Congo project is funded by the Federal Ministry for Environment (BMU). The project aims at providing national and regional decision makers with relevant climate change scenarios for the River Congo Basin in order to allow these decision makers i) to adapt their management strategies related to natural resources (such as forests, water, agriculture) to climate change and ii) to strengthen the science base for their interest in the post-Kyoto negotiations context.

Therefore a first analysis of the climate change impact on forest- and water management and of the use of water resources in agriculture is planned to be established. Global and regional climate change information will be analysed and be generated using regional dynamic downscaling. This will allow the establishment of a range of uncertainties and variability of expected changes of, for example, air temperature and precipitation, which will be used subsequently as input to impact models. A dedicated multi-model chain will be established, based on existing models already used in climate and climate impact research and applied in order to connect global climate change with regional or local forest- and water management in the River Congo Basin.

The regional climate models REMO and WRF will be used for high-resolution (approx. 20km) climate simulation. Although both models already have been successfully applied over Africa (e.g. the REMO model within the BIOTA and ENSEMBLES project; WRF within CORDEX) they have to be validated when applied for high-resolution simulations over the Congo region. For these validation simulations the lateral boundaries will be taken from ERA40 reanalysis data.

Subsequent to the model validation, long-term high-resolution climate change simulations will be conducted for the Congo domain. The simulations will take into account two different emission scenarios. Therefore a ensemble of high-resolution climate projections will be generated for the Congo basin. In connection with already existing projections on a coarser resolution (e.g. IPCC AR4) the high-resolution climate change simulations will increase the robustness of the uncertainty assessment of the projected climate change signal over the Congo region.