



Impact of 2c warming over the vulnerable areas of Africa region in the AFRICA-CORDEX simulations

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We analyse the foreseen climatic changes over the vulnerable areas of African Continent for the most relevant variable, taking advantage of the new regional simulations produced in the AFRICA-CORDEX framework available in the framework of IMPACT2C EU project activities.

The focus of the analysis is on the comparison of present climate condition with the period corresponding to +2°C (and +1.5°C) in the future scenario, providing information on the challenges and opportunities that the foreseen changes in hydrological cycle implied by global warming could create in vulnerable areas of African continent as Nile and Niger basins. We use simulations of the RCP4.5 and RCP8.5 scenarios that typically reach the + 2°C threshold during the next century.

We explore two sources of uncertainty. First, we consider the full consistency between global and regional models which is a critical source of uncertainty especially in this area where small scale processes have a direct impact on large scale circulation patterns. We find that, by looking at long term scenarios, significant differences exist between the scenarios produce with global and regional climate models.

The second dimension of uncertainty, of enormous practical consequences in the field of climate change studies, is the role of climate variability compared to long term tendencies. In this case, we highlight that, although statistically significant, the tendency in climate variable that are most commonly used in impact studies (temperature, rainfall) is comparable with the range of variability observed in the present climate.