

CLIMATE SCENARIOS FOR ANGOLA FROM CORDEX AFR22 SIMULATIONS

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INTRODUCTION

This work uses Regional Climate Models (RCMs) simulations from the CORDEX-AFR22 programme to generate climate scenarios for Angola, with a specific interest in potential changes in extreme events such as droughts and floods.

Climate scenarios are based on CORDEX-AFR22 simulations, including REMO2015, CCLM5-0-15 and RegCM4-7 for the historical period (1981-2010) and RCP8.5 (2040-2100), driven by CMIP5 Global Climate Models (GCMs) NorESM1-M, MPI-ESM-LR and HadGEM2-ES. The historical simulations were evaluated using the CHIRPSv2 dataset for precipitation and the CRUv4 dataset for temperature, where we found that **in all these cases the bias patterns are more dependent on the RCMs.**

RCMs climate responses have been compared with each driving GCM response. **What have we found?** ⁽³⁾

RESULTS

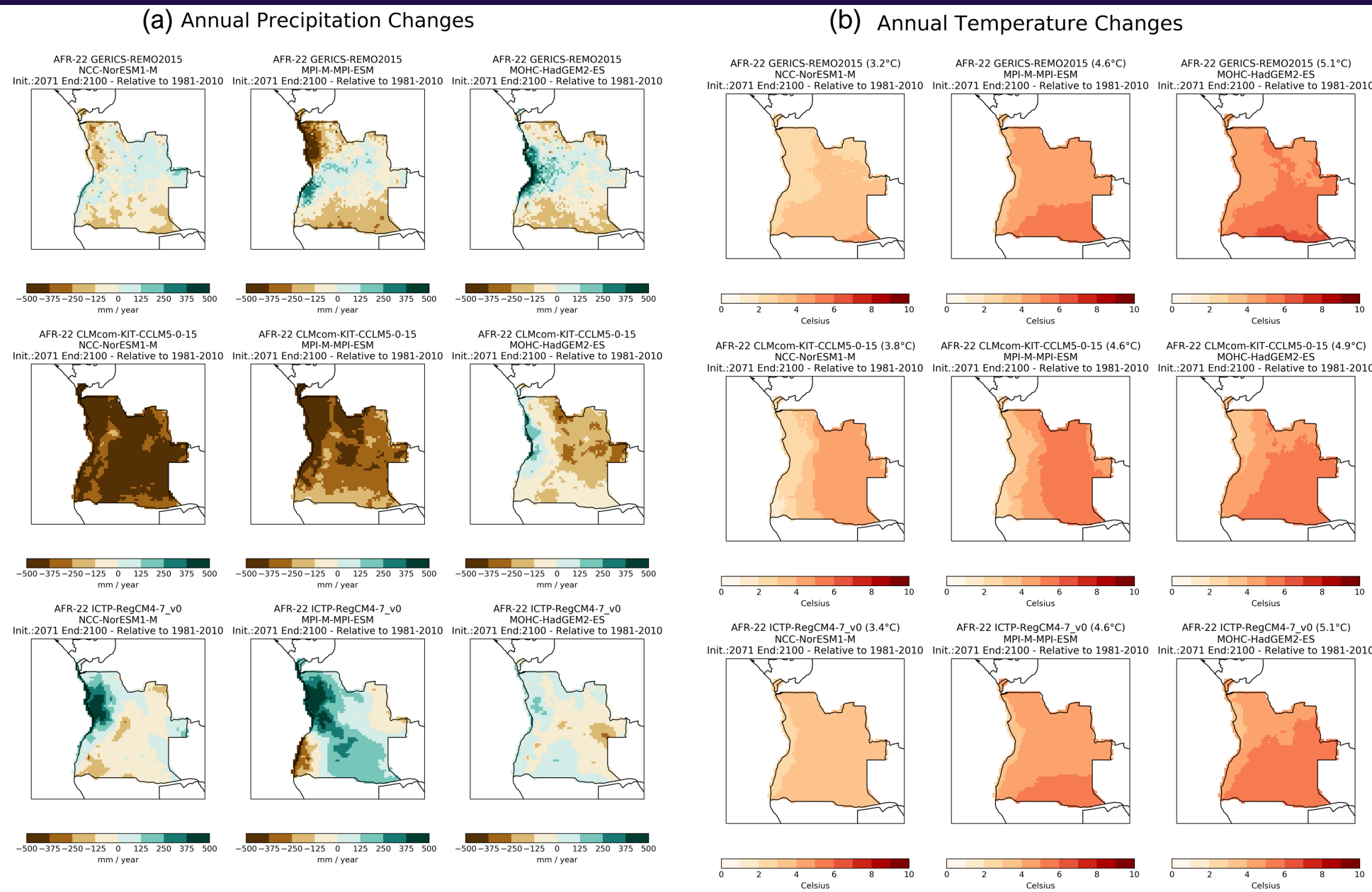


Figure 1. Future changes of (a) Annual precipitation and (b) Annual temperature: Spatial distribution 2071-2100

In order to extract more information, we have divided Angola into four regions according to the distributions of annual precipitation as the **figure 2** belows shows.

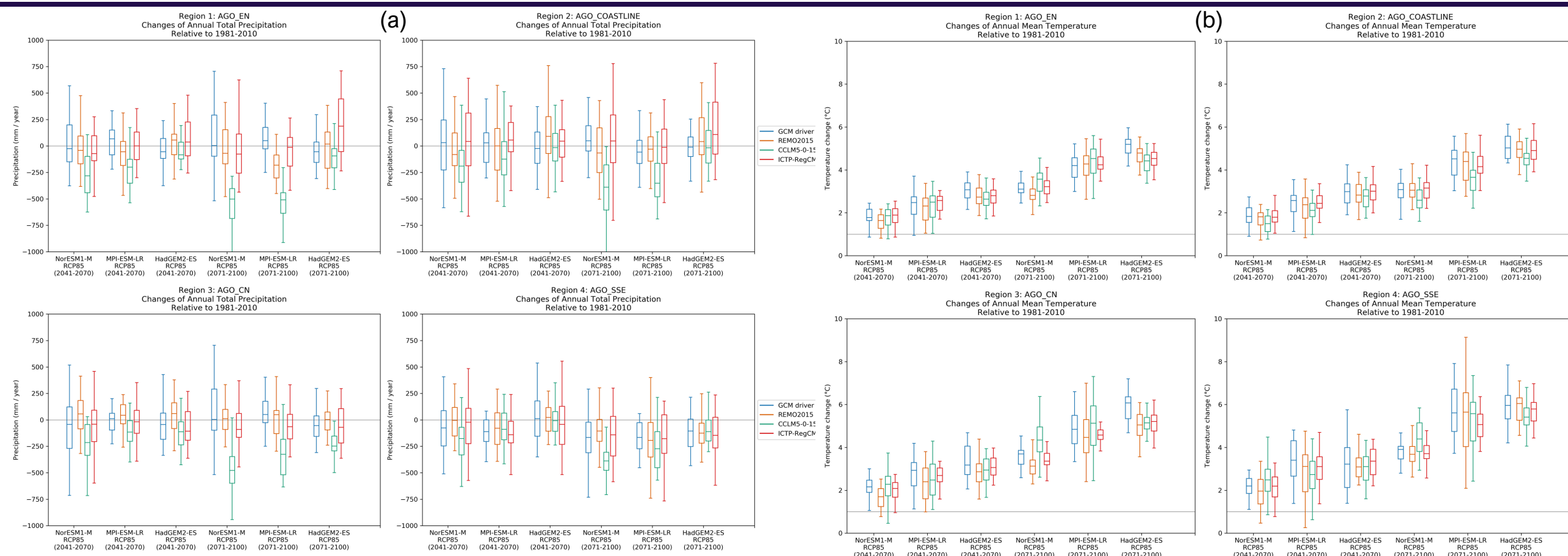
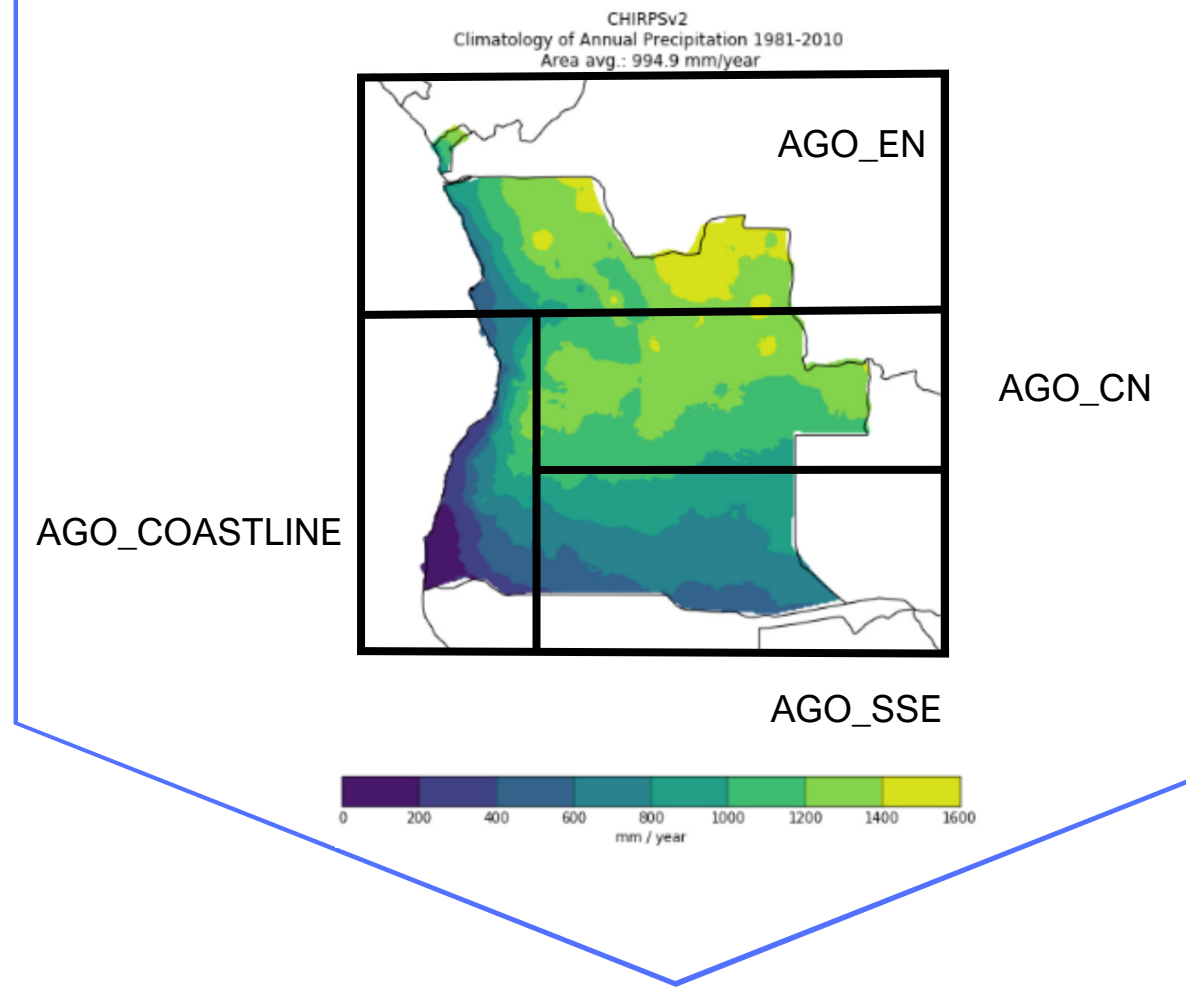


Figure 3. Future change of (a) Annual precipitation and (b) Annual temperature: Boxplot by regions for two periods 2041-2070 and 2071-2100.

⁽³⁾ **The RCMs match quite well GCM patterns of temperature change, with a good matching of interannual variability. Patterns of climate change for precipitation are more dependent on RCMs but with a good anomaly correlation on interannual variability with their driving GCM aggregated over the whole country.**

These results support the use of CORDEX-AFR22 for the generation of high-resolution climate scenarios for Angola. Therefore, the result shows strong signal for air temperature increasing and no significant on annual precipitation.