

Regional downscaling to improve climate predictions in Sub-Saharan Africa – ClimAfrica

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Seasonal and decadal predictions occupy time scales in which strategic and long-term decisions are made in various sectors of society. These predictions attempt to inform user communities about the state of the climate from seasonal scales to between ten and twenty years into the future so that decisions can be made based on the best available climate and other information. The ClimAfrica project, as part of the EU-FP7, has the aim of improving climate predictions in Sub-Saharan Africa (SSA) at the seasonal and decadal time scales. The project can be divided into two broad sections, the first has the goal of improving the modelling of the physical system and second engages users of climate information to assess their vulnerabilities to the climate system. In addressing the first goal, the project has to date developed a new land surface scheme based on in-situ and remote observations which has been used to produce a 15 member, 20 year hindcast (1989-2010) over the SSA. Furthermore, a three member ensemble decadal projection has been produced for 1990-203. However, these simulation are at the resolution of a GCM so are not able to capture the regional characteristics of climate, which effects impacts modelling such as vegetation or hydrological modelling. The Climate Systems Analysis Group have downscaled the seasonal and decadal predictions over the whole African domain as well as over case study regions using both statistical and dynamical methods. This downscaling is done to both identify any added value the downscaling brings as well as to provide these regional data to downstream activities of the project. In this paper we present the preliminary results of the downscaling, contrast the statistical vs dynamically downscaled results and assess any added value the downscaling brings to the GCM scale climate information.