



The assessment of the UK PRECIS model simulations over Uganda

S. D Ddumba

Meteorology Unit, Geography Department, Makerere University P. O Box 7062 ,Kampala Uganda, Email: dddumba@arts.mak.ac.ug, Tel: +256 71 890261

Abstract:

Uganda is a developing country and over 80% of the population depends on rain fed agriculture. Therefore, timely access to detailed climate data is particularly important since economic stress is likely to increase vulnerability to potentially damaging impacts of climate in case of extreme weather events. One of the best options to adding this detail to our climate applications is to use the regional climate models and re-analysis data like PRECIS (Providing REgional Climates for Impact Studies) data in situations of limited observations.

The main objective of this study is to assess the PRECIS Regional Climate Model (RCM) simulation of the climatology of Uganda particularly the rainfall data for its possible utilization in case of data problems in particular locations of the country. Due to the coarse resolution of the model, two stations with reasonable historical rainfall data were chosen for this study. Entebbe station was selected to represent Lake Victoria basin and Central Uganda and Gulu station to represent Northern Uganda.

The annual cycle plot of averaged rainfall for PRECIS model and station observations was done for Entebbe and Gulu and simulated the years of rainfall anomalies.

The PRECIS model data was found to have a good simulation to station observations. The annual cycle plot indicated that both the model and the observation data simulated the seasonal pattern with a bimodal pattern shown for Entebbe while for Gulu, the model did not show a good skill in simulating the unimodal pattern. The interannual variability indicated that the model simulated the second season of September - October - November December (SOND) better than the first season of March - April

- May (MAM) for Entebbe Station.