

## PhD projects at the Research Group Regional Climate Research and Tropical Meteorology

**LARISA, SEREGINA**

# Statistical-dynamical downscaling of East African Rainfall

**Keywords:** East Africa, precipitation, Climate Change, interannual variability, climate model

The PhD research project presented investigates the impact of climate variability on the region of East Africa in order to develop possible climate change scenarios for the wetlands. It is part of the GlobE-Project “Wetlands in East Africa - reconciling future food production with environmental protection” Work Package C2.

Due to the location at the equator East Africa experiences mostly two rainfall seasons. Still, the seasonal rainfall amount is highly variable and knowledge about the evolution of future seasonal rainfall is lacking. The high variability is attributed to the influence of remote areas, like the state of the Indian Ocean. Knowledge of rainfall climate is essential to ensure sufficient food production and make provisions for possible flood or drought events.

In terms of PhD research project the focus lies on quantifying trends and interannual variability of rainfall and temperature in recent decades based on station and gridded datasets. The investigation of causes involves large-scale circulation patterns and teleconnections to remote areas like Indian Ocean Dipole and El Niño Southern Oscillation. The gained knowledge should be used to run a regional climate model with different scenarios. The output will be downscaled statistically in order to derive rainfall distributions for the wetlands areas.

Photo

Contact:  
Larisa Seregina  
Institute for  
Geophysics and Meteorology  
Pohligstr. 3  
50969 Cologne

[www.geomet.uni-koeln.de](http://www.geomet.uni-koeln.de)  
[www.wetlands-africa.de](http://www.wetlands-africa.de)



Work Package	C2
Countries of work	Germany
1 <sup>st</sup> Supervisor	PD Dr. Joaquim Pinto
2 <sup>nd</sup> Supervisor	Prof. Dr. Andreas Fink
Subject	Meteorology
Faculty	Faculty of mathematics and natural science
University	Cologne
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