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Climate variability, scenario development, malaria modelling

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Wetlands and their potential agricultural production strongly depend on climate parameters like **rainfall**, temperatures and solar radiation. The **long and short rains**, for example, provide most of the East African rainfall. Anomalies in the upper ocean heat contents in the Indian and Pacific oceans are prime **forcing mechanisms for rainfall variability** in East Africa.

For this reason, we analyze the observed climate variability of East Africa and also the future climate will be projected. We gather therefore **meteorological observations** from weather stations of the four wetland countries. Using these unique data sets we are able to study, for example, the seasonal cycle of rainfall and the year-to-year variability. Since about 1980 the long rains of East Africa reveal, for instance, decreasing rainfall trends.

By means of global and regional **climate projections** and understanding processes a potential future climate will be assessed. For example, the rainfall amounts of the long and short rains of East Africa will be projected.

We also lead the development of **wetland scenarios**. Socio-economic scenarios and **storylines** are used to construct potential futures of the studied wetlands. This includes the construction of qualitative storylines and the identification of associated quantitative **drivers**. Input from various research areas such as climate or agriculture is required for the scenario development. Finally, potential future developments of wetlands will be provided to advice policy and decision makers.

We use the scenarios to project the **future of malaria** within wetlands. Increasing temperatures, different rainfall patterns and control measures will likely change the future of the malaria burden within wetlands.

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Cluster	C, D
Work Package	C1, C2, C3, D2, D3, D4, D5
Countries of work	Kenya, Tanzania, Uganda, Rwanda
Institute	Institute of Geophysics and Meteorology
University/Organisation	University of Cologne