

## Response of a papyrus wetland system to precipitation variations

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There has been an increase in flood incidents all over the world, and this has been mainly attributed to climate changes particularly increasing precipitation intensity and duration. The severity of floods is influenced by catchment characteristics as well as the spatial distribution of precipitation within a given catchment. It is proposed that papyrus wetlands found in southern, central and eastern Africa can mitigate floods since they have the capacity to store excess water during storm events. However, hardly any research quantifies the amount of water that papyrus wetlands are able to store during different hydrologic regimes, or how the papyrus wetland stage changes in response to changing precipitation and river discharge patterns. The research aims of this project are to improve our understanding of the functioning of the papyrus system, and how it is affected by climatic stresses. This will be done by analysing the response of papyrus wetland (water levels and inundation extent) to changes in precipitation amounts and intensities in the catchment during the dry and wet seasons. Further, we aim to examine whether there is a precipitation threshold at which the functioning of the papyrus wetland system is compromised, and the influence of local precipitation patterns versus patterns of the wider catchment area. We will use wetland stage data, precipitation data from a local weather station, as well as remote sensing data (MODIS time series) to monitor changes in water level and inundation in the different seasons. We will then simulate papyrus wetland responses to projected climate changes within the catchment, and assess their potential for flood control within the catchment.