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Sedimentary and dendrochronological records of environmental change and rainfall variability, Southwest Madagascar

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Madagascar is commonly regarded as a biodiversity hotspot that is primarily impacted by human activities. However, climate variation, especially the reduction of rainfall has been considered as a potential key driver impacting species composition in the Southwest. Some of the legacy of past climate change, but also modulated by current climatic factors, is the vegetation distribution gradient from dry to spiny forest. Few studies have investigated the impact of rainfall variability on vegetation composition and structure. A long-term study using sedimentary and dendrochronological records may facilitate the understanding of the patterns of environmental change in the last 2000years in response to regional rainfall variability. In the next six months, I will be analysing the sediment and tree-cores to reconstruct vegetation change and the rainfall variability. The presentation will discuss the vegetation, climatic gradients, human impact and landuse change in southwestern Madagascar; and present preliminary results related to the climate and vegetation data. This study has implications in the prediction of future scenarios in rainfall variability and vegetation changes to enable stakeholders and conservationist to develop better adaptive strategies reconciling sociological and conservation aspects within this unique biodiversity hotspot.

