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**Last millennia of the Tropical Moist Forest of Central Africa: forest or savanna?**

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Long-term ecological records are essential to understanding past responses of vegetation to climate change and human activity. As part of a multi-disciplinary project (Coforchange), we undertook research into the past conditions that prevailed during the Holocene in a region that currently holds the world's second largest rainforest.

Tropical Moist Forest (TMF) extension in Central Africa has experienced dramatic changes over the last millennia (ex. ~3000 and 2000 years ago); disturbances which may possibly still influence today's repartition of forest and savannas, and species distributions. Are the light-demanding canopy plants in large TMF a recovery phase from past anthropogenic disturbances or from dry episodes? The project CoForChange helps shed new light in this region still too little studied with regard to climate, environmental and societal issues.

Lake, swamp and peat sediments or soils contain a variety of paleoenvironmental proxies to reconstruct local to continental climate histories. First we focused on modern surface soil and plants of Central Africa in order to assess the ecosystem responses in terms of carbon stable isotopes and Carbon/Nitrogen ranges and water use efficiency (WUE). These indicators are then applied on soil profiles and sedimentary cores to reconstruct spatial and temporal ecosystem perturbations, savanna corridors if any and WUE.

Our results demonstrated that carbon isotopic composition is a good proxy to assess the WUE and suggest that the C/N for tropics can be a potential indicator of the water table level of ecosystems. Using these new data added to those of former major projects (ECOFIT, PaleoFORGA, Regab) and to independent environmental tracers (pollen, charcoals, phytoliths…) this presentation will discuss the ecosystem resilience with respect to the disturbance and the two controversial hypothesis: human land- use intensification versus climatic impact on the Tropical Moist Forest 3000 years ago. Preliminary conclusions indicate that 3000 years ago the forest faced a dry event but there was large local variation with some areas demonstrating far greater resilience than others.