**Wood functional traits as a tool to study the resilience of tropical forests in Central African Biosphere Reserves**

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A rainforest consists of many species. The question arises how this biome will respond to substantial changes that will stimulate certain species and threaten others. Each species occupies a particular niche within an ecosystem. This niche determines the specialism of the species and makes it functionally different from other species. Differences in ecological functionality are due to morphological, anatomical, biochemical, physiological and phenological differences. Knowledge of functional traits of species is the basis for understanding ecological flexibility and eventually for predictions of ecosystem dynamics following climatological changes and anthropogenic disturbances. Unfortunately relevant information on Central Africa is particularly lacking. Our research will study the wood functional traits of tree species to highlight the resilience of tropical forests and we maximally profit from the opportunities provided by the Central African Biosphere Reserves of Luki and Yangambi. We selected 19 dominant species growing in Luki and also in Yangambi Biosphere Reserves. We used non-destructive methods to collect wood samples in the forests among other wood core and cambial marking. For each species, 2 or 3 cores were collected per tree and 3 trees were collected by diameter class (4 diameter classes). In total 208 trees (478 cores) and 189 trees (439 cores) were collected respectively in Luki and Yangambi Biosphere Reserves. On each core samples, vessels, fibres and parenchyma measurements give information about the carbon stock within tree and physiological adaptation of species within their habitat. The DBH, height of tree and bark thickness were also measured on each tree