FUNCTIONAL TRAITS AND SPECIATION OF TROPICAL AFRICAN SPECIES: THE CASE OF GENUS GUIBOURTIA BENN

Tosso Félicien¹,², Daïnou Kasso¹, Hardy J. Olivier², Lejeune Philipe¹, Doucet Jean-Louis¹

2. Unité Évolution Biologique et Ecologique, Département de Biologie des Organismes, Université Libre de Bruxelles, B-1050, Bruxelles, Belgique.

Email: dfntosso@docl.ulg.ac.be

CONTEXT

✧ Comparative ecology approach is widely used to understand mechanisms of speciation.
✧ However, few studies take into account the importance of physiological traits as criteria for interspecific differentiation.
✧ Ideal candidate: Guibourtia J. J. Benn. Emend. J. Léonard (Fabaceae / Caesalpinioideae): several sisters species, some are morphologically similar and parapatric.

GUIBOURTIA MODEL

13 African tree species (figure 1) including 6 endemic to the Guineo-Congolese zone (White, 1983) and 1 species in America.

Precious wood (FCBA, 2008) exported to Europe and Asia.

Some species present high socio-cultural value for local populations (sacred for pygmies in Central Africa).

Local threats on some of species (illegal logging).

Species of different ecosystems (forest and savanna).

1. What are the phylogenetic differences within the genus Guibourtia?
2. To what extent phylogeny, functional traits and bioclimatic envelope are linked?

METHODOLOGY AND OUTPUT

Taxonomic validation
(Morphological characterization)

Improved management
(chains of custody, conservation etc.)

Functional traits
(Examination of traits: specific leaf area, C/N ratio of leaves etc.)

Genetic
(Using chloroplast and nuclear sequences to establish the phylogeny of the genus)

Niche modelling and development of predictive models for putative impacts of climat change

REFERENCES