



## Distribution of Sahelian woody plants exploited in four plant formations of the Baguirmi department (Chad).

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### ABSTRACT

**Objective:** The objective was to study the distribution and variability of the woody flora in this Sahelian region of Chad.

**Methodology and Results:** The study was conducted in the Baguirmi Department of Chari Baguirmi Province. The floristic inventory was carried out at 240 survey points measuring 30m x 30m (900m<sup>2</sup>), or 120 plots. Four plant formations (shrub savanna, wooded savanna, open forest, and gallery forest) were selected, and in each, 30 plots were installed every 200 meters along 2-km transects oriented north-south and east-west. The taxonomic analysis revealed a total of 31 species belonging to 23 genera and 15 families. Fabaceae and Combretaceae are the best represented families, with 33% and 13%, respectively. They are followed by Bignoniaceae, Caparaceae and Rhamnaceae which are weakly represented (6%). Diversity is noted in the shrub savannah with Shannon and Piélou equitability indices of 2.75 and 0.54 respectively. Individuals of *Senegalia senegal*, *Vachellia nilotica* and *Balanites aegyptiaca* are the most abundant in all the plant formations studied with a relative abundance of 17.69%, 16.66% and 15.69% respectively. The frequency showed that 15 inventoried species are the most frequent in the plant formations thus revealing their distribution ability. *Vachellia gourmaensis*, *Crateva adansonii*, *Kigelia africana* and *Ximenia americana* form the group of characteristic species recorded in a single plant formation.

**Conclusion and application of results:** This work made it possible to identify the most representative families in the plant formations studied. Individuals of *Senegalia senegal*, *Vachellia nilotica*, and *Balanites aegyptiaca* are the most abundant in these. Some species are ubiquitous, while others are characteristic of a specific formation. Thus, these interesting results suggest the possibility of encouraging natural regeneration in plant formations with rare species, particularly in agricultural operations and raising awareness within the local community about the need for management that respects the environment.

**Keywords:** Woody, distribution, plant formation, Baguirmi, Sahel, Chad.