ESTIMATE CARBON STORAGE IN FOREST CONCESSION CFT / Kisangani (D.R. CONGO)

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Research questions

- The forests of the Congo Basin play an important role in the global carbon cycle. (Vieira S. et al, 2004). Therefore, conservation becomes a global priority.
- Despite several projects in forest management, forest ecosystems remain insufficiently known because of inadequate and disparate research efforts (Chave, J., 2000).
- Sustainable forest management is a global issue requiring the estimation of standing trees and its variations in space and time (Gaëtan R., 2012), to plan the management of forest resources.

So, knowing that the carbon stock in the concessions varies with the number of years of rotation in a forestry operation, data on the variation of the stock based on rotation time is important information since they would serve to plan interventions in a forest concession for sustainability of the forest resource for future generations.

Unfortunately, very few studies have measured the variability of carbon stocks in forest ecosystems of the Democratic Republic of Congo following the example of the forest concession CFT Kisangani (DR Congo).

Objectives

- Quantify the carbon stock in the different plots.
- Evaluate the floristic diversity of tree species of the forest concession CFT.
- Provide the amount of carbon stored in different commercial species.

The expected results for this memory could be used to revise the forest management plan of the DRC, using the best rotation time for a forest concession for sustainable forest management.

Methodological approach

Data collection will be done in the forest concession CFT / Kisangani. 30'55''NORD 0 °, 25 ° and 400 11'27''EST m (DATE AND TIME.INFO).

Materials to be used in this study will consist of trees of botanical species in different families. We will proceed with the exploration and field selection, installation of the sampling design, inventory, work in the herbarium and processing of data. We will calculate the density, basal area, biomass and estimate carbon stock using the following formulas:

$$Density\ \left(\frac{Stem}{ha}\right) = \frac{number\ of\ stem\ for\ a\ given\ species}{Area\ (ha)}$$

$$Basal\ area\ \left(\frac{m^2}{ha}\right) = \sum_{i=1}^{n} \frac{\frac{\pi * (DHPi)^2}{4}\ (m^2)}{Area\ (ha)}$$

AGB_{est} = Exp (-2.134+2.53ln(D^2) and the conversion of the carbon stock in biomass will be done using : AGB x 0,5.