19th National Symposium on Applied Biological Sciences
Gembloux Agro-Bio Tech (Liège University), Faculty of
Bioscience Engineering, 7th of February 2014

SOIL SEED BANK : A POORLY KNOW COMPONENT OF FOREST REGENERATION

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Macaranga monandra

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CONTEXT

- ✓ Resilience of tropical forest ecosystems in a context of global change is a major concern for the scientific community (Betsch, 2001).
- ✓ This resilience depends, among other things, on the regenerative capacity of disturbed ecosystems (Bakker et al., 2000).
- ✓ The regeneration of plants is governed by an infinite number of strategies (Rollet, 1983).
- ✓ The soil seed bank of African forests remains poorly studied (Figure 1).

Milicia excelsa (Iroko)

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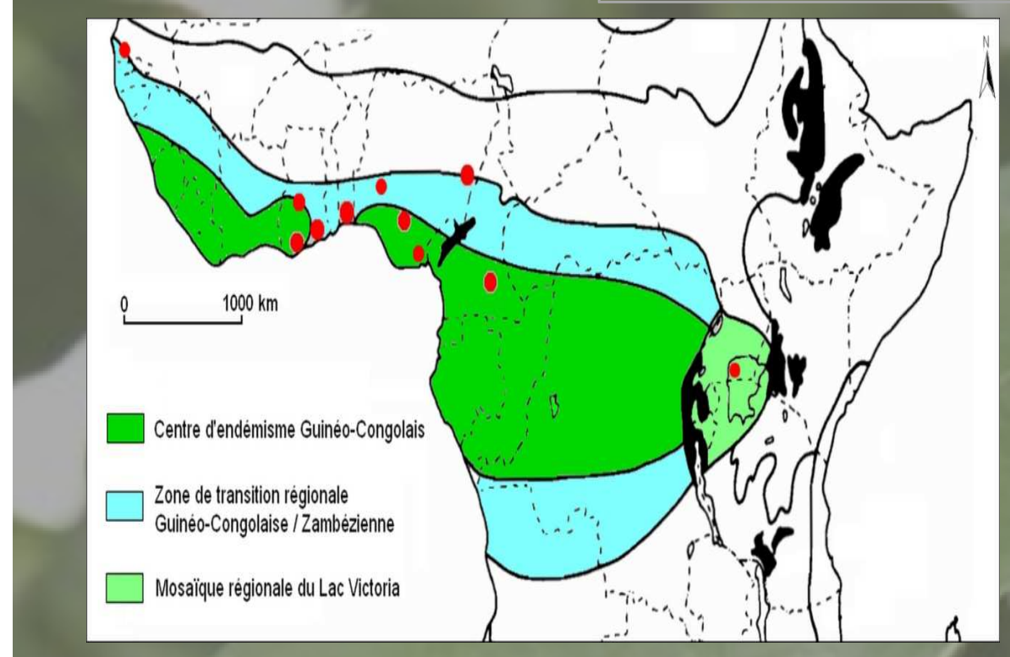

Fig 1. Map of tropical African forests, adapted from White (1986), showing the sites where studies on the seed bank have been undertaken (red circles)

AIM

Improve the knowledge on the role of the soil seed bank in the resilience of Central African forests.

ASSUMPTIONS

- ✓ The soil seed bank reflects only potentially the composition of the surrounding vegetation.
- ✓ Within a given forest habitat, the composition of the future vegetation is influenced by the seed bank, but also by the inclusion of seed rain.
- ✓ Strong inter-habitat variations in the composition of the seed bank are related to the surrounding vegetation, but also to edaphic conditions.

METHODOLOGY

Comparing bank - surrounding vegetation
(Spectroscopic analysis by the method using the calibration model construction)

Comparing bank – seed rain
(Understanding the relative contribution of the bank vs. seed rain in two different geological substrates)

Testing the seed lifespan of woody taxa in forest
(Assessing the viability and seed dormancy by the method of burial in two different geological substrates)

Pods of *Erythrophleum ivorense* (Tali)

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Seed of *Ricinodendron heudelotii* (Essessang)

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Seed of *Canarium schweinfurthii* (Aiélé)

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Leaf of *Musanga cecropioides*

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ORIGINALITY

- ✓ Few studies on forest resilience through the soil seed bank considered different geological substrates.
- ✓ Innovative approach of seed bank – surrounding vegetation comparisons through spectroscopic analysis.
- ✓ Most studies testing seed viability/dormancy by the burial method used a single geological substrates.

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Macaranga spinosa

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