

SASSCAL 038 - Forest regeneration, growth, threats and trends in different forest types

Project aims:

- to assess the ability of the Namibian woodlands to regenerate and to recover after degradation or clearing;
- to test several assisted regeneration methods that would support regeneration in natural areas;
- to study the impact of harvesting and climate change on the woodlands through tree growth and regeneration.

Progress to date:

Five students are involved in the project: one Honours (University of Stellenbosch), four Masters (Polytechnic of Namibia) and one PhD (University of Leuven, Belgium; Polytechnic staff). Additionally, a postgraduate student of UNAM assisted with some of the germination work. Their studies focus on:

- An assessment of the natural regeneration of valuable woody species in north eastern Namibia: 2014 – 2015, almost finalised (figure 1). The species with the highest frequency in the natural regeneration was *Burkea africana*.
- The natural regeneration of woody plants on abandoned fields in north eastern Namibia: 2014 – 2016. The amount of seeds of woody species in the soil bank was remarkably low.
- Propagation of indigenous species: germination of *Strychnos cocculoides* (Monkey orange) and *Guibourtia coleosperma* (False Mopane) from the Kavango West Region, Namibia: 2015, almost finalised (figure 2). Very good germination was obtained for both species.
- Direct seeding as assisted regeneration practice for important woody species in Namibia: 2015 – 2017, in proposal phase, experiments still to start at Kanovlei State Forest, Otjozondjupa.
- Seed germination of Namibian woodland tree species: 2015, finalised. An article will be published in Dinteria with the results. Germination results varied a lot between species (figure 3).
- Management and growth of *Pterocarpus angolensis* (Kiaat): 2000 – 2016. The first results were presented at the IUFRO Dryland Forestry conference in Stellenbosch, March 2015: "Occurrence, abundance and growth of the dryland forest species *Pterocarpus angolensis* related to site characteristics in Namibia and southern Africa".

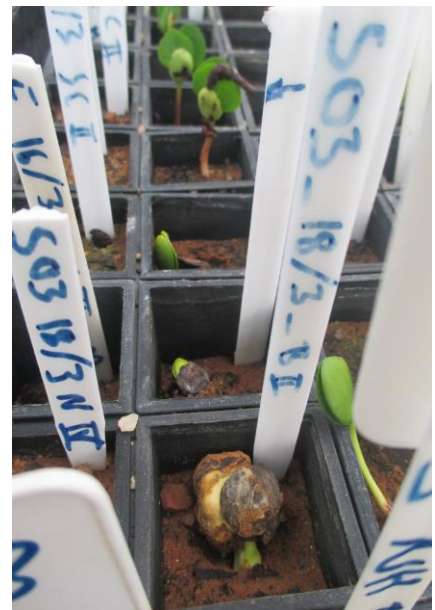


Figure 1 (left) – Forest inventory at a sample plot in Ncaute community forest

Figure 2 (middle) – Student filling germination trays

Figure 3 (right) – Seedlings of *Schinzioophyton rautanenii* (Manketti) and *Guibourtia coleosperma* (False Mopane)

Expected outcomes of project:

- Understanding of natural regeneration in Namibia's woodlands: which species regenerate well and what factors influence natural regeneration.
- Insight in the potential of natural regeneration after clearing of woodland.
- Germination protocol for indigenous woody species of north-eastern Namibia.
- Advice on best assisted regeneration practices for Namibia's woodlands.
- Information on annual diameter growth of Namibia's tree species.
- Understanding into the impact of climate change on Namibia's woodland species through models.
- Growth model for *Pterocarpus angolensis*.