Abstract

AESCHLIMANN, CHRISTIAN. Regeneration behaviour of Okoumé in canopy gaps of a forest concession in Gabon

Sustainable forest management is the process of managing forests aiming on achieving one or more clearly defined objectives whiteout harming its inherent values or future productivity. Tropical forests are under permanent pressure of anthropogenic influences, thus the focus should lie on a balanced production and protection of this precious ecosystem. In the long run, the sustainability of forest management relies not only on an appropriate duration of cutting cycles but also on adequate silvicultural treatments.

In a first step, the current state was analysed based on intense literature review and conduction of expert knowledge. In addition, an inventory as a chrono sequence was performed on two sites where selective harvesting interventions took place in 2017, 2016, 2015, 2014 and 2010. In total 46 plots were installed in logging gaps in order to assess the regeneration dynamic of Okoumé. One site is embossed by aged Okoumé forest, while the other one is of very young Okoumé forest type. Even though regeneration in the logging gaps with an average size of 470m^2 was not sufficient, regeneration in the very young Okoumé forest type was significantly higher than in the aged Okoumé forest type. A correlation between average distance of seed trees to the logging gap could be observed.

Additionally, a low-budget drone was used to surveying the area of inventory plots whereof orhtomosaics were generated and an automatic model for detecting logging gaps was performed.

As was already well known that regeneration of Okoumé in gaps smaller 0,25ha is almost not possible, this thesis confirms these observations again and concludes, that silvicultural treatments need to be adapted to the species requirements in order to guarantee sustained yield in the long run.

Keywords: Okoumé. *Aucoumea klaineana.* Regeneration. Logging gap. Drone.