



Tropentag, September 19-21, 2012, Göttingen -
Kassel/Witzenhausen

“Resilience of agricultural systems against crises”

Analysis of Natural Regeneration of *Boswellia papyrifera* Stands in Southern Kordofan State, Sudan

MOHAMED KHAMIS¹, EL NOUR EL SIDDIQ², AYOUB KHALIL³

¹Al Fashir University, Department of Forestry & Range Sciences, Sudan

²Khartoum University, Dept. of Forest Management, Sudan

³University of Bahri, Dept. of Forestry, Sudan

Abstract

Sudan is characterised by a diversity of natural woody perennials which produce non-wood forest products. However, gums and gum resins are among the products that contribute significantly in the livelihood of the local inhabitants and in the economy of the country as a whole. The genus *Boswellia* which belongs to the family *Burseraceae*, is native to the dry areas of Africa, Middle East and India. It is considered to be very important as some of the species produce gum resin (Frankincense or olibanum), which has various applications locally and world-wide. It is used in local cultures in terms of wood, fodder, and traditional medicine, in commercial industries and conservation of the environment.

Boswellia papyrifera (Del.) Hochst. is a multipurpose perennial tree that grows on the rocky shallow soils of the dry land slopes. It produces gum resin that has various local applications, pharmaceutical and industrial. In addition to the multiple uses of its wood, the leaves are used as fodder and it appears to play a great ecological role.

One of the serious problems in the *B. papyrifera* stands in South Kordofan State is the lack of natural regeneration.

Therefore a regeneration experiment in the natural *B. papyrifera* stands was carried out to analyse the regeneration in tapped and untapped stands. Eight areas were selected, based on tapping. In each area three random sample plots (20 m by 20 m), were established based on altitudinal range (low, medium and high). In each plot regeneration seedlings were counted and recorded, in both tapped and untapped stands. The results showed that the number of the germinated seedlings was higher in the untapped plots and there was a significant difference in regeneration at ($p > 0.05$) between the tapped and untapped plots of *B. papyrifera* stands, which reveal that tapping has influence on the natural regeneration. It is recommended that the current intensified tapping methods to be improved and reduce its effect on natural regeneration. In addition to the use of alternative methods of regenerating these *Boswellia papyrifera* trees through enrichment planting by branch cuttings.

Keywords: *Boswellia papyrifera*, natural regeneration, South Kordofan, tapped, untapped trees, NTFP