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## Population Structure and Tree Densities of Baobab (*Adansonia digitata* L.) in Kilifi County, Kenya

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### Abstract

The baobab tree (*Adansonia digitata* L.), which is native in semi-arid habitats of sub-Saharan Africa including Kenya, is harvested by local communities mainly for its highly nutritious fruits. Baobab raw and processed products are important for rural livelihoods as they contribute both to nutrition security and cash income generation, particularly of women. Growing demand for the fruit pulp at local and international markets may pose a threat to the natural resource base as baobab is only collected from wild trees occurring on farms and community land. However, little is known on the health of baobab populations in Kenya. Within the larger frame of the BMEL-funded BAOFOOD project, we are assessing baobab populations in randomly selected plots of 0.5 x 3 km each along a transect covering both high and low baobab density areas in Kilifi County at Kenya coast. In each of the plots, all baobab trees were documented, their height estimated and their diameter at breast height (DBH) measured. Densities of young (DBH < 1 m) and mature (DBH > 1 m) baobabs were calculated and size class distribution curves developed to assess the health of the surveyed population. First results of measuring 265 trees in three plots show a relatively high baobab density of up to 0.79 trees per hectare, but this was mainly due to the high number of mature trees, while young trees were rare (200 and 65, respectively). DBH ranged from 0.16 to 4.97 m and tree height from 1.2 to 24.0 m. A lack of young trees was found in the size class distribution curves as only 24 % of the documented trees had a DBH of < 100 cm, 51 % of 100–199 cm and 25 % of  $\geq 200$  cm. The lack of rejuvenation may lead to an instable population of the surveyed region, but more data from the remaining plots need to be included into the analyses and reasons for observed differences in proportions of young trees among plots identified. Our study may help to develop recommendations for sustainable resource management which is a prerequisite for enhanced utilization of baobab in the region.

**Keywords:** Diameter at breast height, fruit, natural resource management, rejuvenation, tree densities