# Charcoal potential of Miombo woodlands at Kitulangalo, Tanzania


## Author(s)

R.E. Malimbwi, Eliakimu Zahabu, G.C. Monela, Salome Misana, G.C. Jambiya, B. Mchome



## Abstract

A study was carried out to determine the charcoal potential of the miombo woodlands of Kitulangalo area, near Morogoro, Tanzania. Systematic sampling design used in an inventory in 1996 was repeated in 1999 in order to determine the general current stand parameters and forest change. A total of 46 sample plots were laid out in the forest reserve. In adjacent public lands stratified random sampling was applied where a total of 30 plots were laid out. The layout was meant to study how species richness and wood stocking vary in public lands and forest reserve. Preferred tree species for charcoal making had standing wood volume of 24.5 m3ha-1 and 56.5 m3ha -1 in public lands and reserved forest respectively with corresponding basal area of 3.7 m2ha-1 and 7.2 m 2ha-1. Stem numbers were 909 stems ha-1 in public lands and 354 stems ha-1 in the reserved forest. These values indicated more regeneration in public lands following disturbance than in the forest reserve. The weight of charcoal that can be extracted from the woodland at the roadside was 56 kg, equivalent to only one bag of charcoal per hectare. Similarly 54 bags may be extracted at 5 km distance while 125 bags may be extracted from beyond 10 km from the highway. With the established stand growth rate of 2.3 m3 ha-1 year-1 for the regrowth of miombo woodland at Kitulangalo, it will take about 8 to 15 years for the degraded woodlands to recover for charcoal production. Therefore, for sustainable charcoal production in this area, felling cycles of 8 to 15 years are recommended, provided the minimum tree size of > 10 cm dbh (diameter at breast height) for charcoal making is observed.