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“Bridging the gap between increasing knowledge and decreasing resources”

## Regeneration and Biomass Production of *Euphorbia stenoclada* in the Coastal Plains of Southwestern Madagascar

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### Abstract

In the coastal part of southwestern Madagascar, herbaceous forage is scarce during the dry season. Despite this, transhumant herds of cattle and, to a lesser extent, small ruminants, from the even drier and politically insecure Mahafaly plateau populate the coastal plains during this period. Livestock keepers partly compensated the lack of herbaceous forage by harvesting branches of the succulent evergreen shrub *Euphorbia stenoclada* Baill. to feed the herds. In consequence, this endemic and protected (CITES Appendix II) plant is under very strong pressure.

To quantify the potential threat, shrub density and biomass yield of the succulent branches, shrub mortality due to harvesting, and rate of natural regeneration were determined in February 2014 in four villages of the western coastal plains. Along seven 2.5 km west to east transect lines established with a range of 2 km, 10 plots (30 m × 30 m) each were installed at 250 m distance to determine those variables.

The average density of *Euphorbia stenoclada* was 422 individuals per hectare with a dry biomass yield of potentially harvestable branches of 1 ton per hectare. Due to severe harvesting, a shrub mortality rate of 10 % was determined. After harvesting, however, in some stands a strong vegetative reproduction of the normally sexually reproducing species was observed, reaching up to 17 % of the newly growing individuals.

**Keywords:** Coastal bushland, dry season forage, *Euphorbia stenoclada*, regeneration