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Socio-economic importance of *Borassus* palm parklands to the household of the Dallol Maouri of Gaya region, Niger

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Abstract

The Dallol Maouri *Borassus* parkland – an agroforestry system consisting mainly of *Borassus aethiopum* Mart. (Arecaceae) – is the largest in Niger, located in its south-eastern department of Gaya. It covers an area of approximately 30,000 ha and is dominated by intercropped millet, rice, sorghum and cowpea fields. Over the millennia, forest has been converted into this parkland which serves multiple uses for humans, livestock and wild game. In the last couple of decades, the use has partly exceeded its natural carrying capacity, thus it is important to study the status and potential threat of these palm stands. For this study, we used the software QGIS, to adopt a sampling plan with probability proportional to size, which enabled us to select 13 villages with a maximum distance of 7 km to the next stand. By means of a sample number determination equation ($n = N / (1 + N(e^2))$), we selected 234 agricultural households, i.e. 18 agricultural households per village. Exploitation and income from the palm products were assessed by interviews. Results suggest that all parts of this palm tree are used, despite some of the parts' use is prohibited by law. Most of the benefits came from the marketing of non-wood products, such as green and ripe fruits (13%) as well as the hypocotyl, which is the seedling after 3–4 months of seed germination (87%). The hypocotyl is transported and sold both at the level of local and regional markets, as well as main cities but also at the level of the neighbouring country Nigeria. The hypocotyl and fruits provided farmers with an average net annual income of 76,400 FCFA (maximum of 960,000 FCFA). In 6% of the cases, the analysis showed that the contribution of *B. aethiopum* to family agricultural income is 10%. However, it appears that some human practices (trunk cuttings, use of male flower, green petiole harvest) and wind abrasion, threatens the sustainable exploitation of these *B. aethiopum* stand in certain localities. Thus, adopted management strategies should be in place to enable the long-term survival of these stands and thus a continues income strategy for rural people.

Keywords: African fan palm, income generation