

Titre: BIOLOGIE DE LA CONSERVATION DES RAPHIAS (*RAPHIA SPP.*) AU BENIN (AFRIQUE DE L'OUEST)

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SOUTENANCE

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ABSTRACT

Raffias (*Raphia spp.*) are wild single-leaved palms used by Benin local populations for food, building, cabinet making and decoration purposes. Because of their biology and ecology, they are exploited by only a fringe of the population. Knowledge of the uses, ecology and conservation biology of raffias will enable their efficient use, will alert on relevant issues and put in place strategies for sustainable management not only for raffia populations but also for their ecological functions. This study aims at evaluating the impact of the use and intensity of exploitation of raffias on the socio-economic conditions of users and the dynamics of the populations of *Raphia hookeri* and *Raphia sudanica*. The study was carried out in the ten (10) phytodistricts (Coast, Plateau, Ouémé Valley, Pobè, Zou, Bassila, South Borgou, North Borgou, Atacora mountains range and Mékrou-Pendjari) distributed in three (03) biogeographical zones of Benin. Ethnobotanical survey, forest inventories and agricultural experimentation were used to assess: (i) socio-professional, economic and demographic factors underpinning the use of these species, (ii) socio-economic impact of the use of raffias, (iii) the impact of land use and intensity of exploitation on the dynamics of raffia populations, (iv) measures for the conservation of raffia populations, and (v) modes of regeneration of raffias for a contribution to its domestication. Our findings revealed that the socio-professional factors underpinning the uses of raffias differ according to the species and its distribution. Among these factors were age, education, the main activity in addition to sex for *R. sudanica*. The same factors were found for *R. hookeri*. The higher the level of education, the higher the level of knowledge of the uses of *R. hookeri*. The same findings hold true for the age of the respondents. Transformers have a better knowledge of the uses than gatherers. Concerning *R. sudanica*, non-users, men and women, the illiterates and the main activities taken individually, contribute, over time, to a reduction in the level of knowledge of the uses conversely to processors and literate people. The gatherers, with time, acquire a stable level of knowledge of the uses, which will not exceed the unity. Considering these, it's been showed that level of instruction, gender and main activities were socio-economic and occupational variables that influenced the annual income from the exploitation of raffia species. The illiterate and the farmers earn more from the raffia species than others. In addition, the level of development of the areas where the species are found influences the income of their farms. The main category of use of raffias was crafts and the main uses were bed, mat, baskets and ceiling. The most used organ is the spine and the least used is the nut. The assessment of the impact of intensity of exploitation and land use patterns showed that the density of raffias is greater in swamp forests than on farms and plantations. But the intensity of exploitation affected only the populations of *R. sudanica* and revealed that the more intense the exploitation, the less raffias per unit of area (ha) are found. However, these impacts mostly depend on the life stage of the raffia as juveniles and sub-adults are the most affected by the intensity of exploitation and habitat degradation. Addressing the growth of raffia species, the most affected height class is that of 6.5 m to 8.5 m which is the height above which the exploitation of *R. hookeri* for wine production is impossible. The intensity of exploitation and the forms of land use negatively affect the density of raffias in fructification and the density in general. As such, further research can focus on the study of endogenous measures of raffia conservation and traditional ecological knowledge that will be incorporated into sustainable land management plans. About raffia conservation aspects, it was

pointed out that the conservation measures of protected areas and endogenous ones have a positive impact on the density (high density) of raffias and their growth in height (the highest feet). Among these conservation measures, the definition of cutting periods (dry season) and cutting intensity (1 out of 3 rachis) are currently the most effective measures. However, no habitat conservation measures have been identified. A zoning through a compulsory reforestation distance of 25 m on each side of the minor bed and a buffer zone of 50m to reforest or enrich in raffias was proposed jointly by the populations and the conservators. And this reforestation would be possible only if the conservators master the methods of multiplication of raffias. The assessment of species regeneration patterns showed that raffias cannot sucker as reported by some authors. The only mode of multiplication of raffia is that by nuts, which nuts suffer from physical dormancy. To have a relatively high germination rate, cut the pointed end of the nuts of *R. hookeri* or treat them with hot water and cut both ends of those of *R. sudanica*, taking into account the provenances and the categories of nuts in order to have a better effect of these pretreatments. At the end of the study, populations of raffias in the Guinean zone deserve rapid conservation actions through assisted regeneration followed by reforestation, not only to maintain their ethnobotanical, ecological value, but above all to protect rivers banks.

Key words: Raffia, ethnobotany, harvest intensity, germination, TEK, Benin.

CURRENT PUBLICATIONS FROM THE PHD RESEARCH:

- Donou-Hounsodé et al. 2016a. Facteurs socioéconomiques influençant l'usage des raphias au Bénin (Afrique de l'ouest). *Revue du CAMES* - 04 (01). Science de la vie, de la terre et agronomie
- Donou-Hounsodé et al. 2016b. Use of Raffias' species (*Raphia* spp.) and its impact on socioeconomic characteristics of harvesters in Benin (West Africa). *International Journal of Biomolecules and Biomedicine* (IJBB) 5(1): 1-19.