

Final Evaluation Report

Your Details	
Full Name	Albert KAHENGA MATONGO
Project Title	Floristic and taxonomic study of the genus <i>Raphia</i> (Calamoideae, Arecaceae) in the Yangambi Biosphere Reserve (DR Congo)
Application ID	33275-1
Date of this Report	December 14, 2022

1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
To examine the flora and taxonomy of <i>Raphia</i> palms				It was planned to carry out a botanical inventory in the forests of the Yangambi Biosphere Reserve to achieve this objective; unfortunately, the rainy season in the Tshopo region prevented us from working in the forest. Nevertheless, I analysed the herbaria of the palm species of the region that had already been identified by other researchers. This allowed me to establish a taxonomic list of <i>Raphia</i> species, including other palms that grow in the forests of the Yangambi landscape.
To analyse the ecology of palm species of the genera <i>Raphia</i>				It was planned to study the soil and ecological characteristics of the habitat in which the <i>Raphia</i> palms grow, but I was unable to do so because of the flooding of the forest by seasonal rainwater. Through the analysis of palm herbaria preserved in the Herbarium of the Institut National pour l'Etude et la Recherche Agronomique de Yangambi (INERA Yangambi), I was able to gather some information on the ecology and distribution of <i>Raphia</i> palms.

2. Describe the three most important outcomes of your project.

a). One of the most important outcomes is the empirical information generated by this project, which provides a better understanding not only of the use and importance of wild palms but also of the needs of local communities and their patterns of plant use and management. This information also highlights the relationship between palm use and the socio-economic status of the villagers, which is of practical importance for biodiversity conservation, as it can identify which groups in the local community are most dependent on natural resources and what mechanisms govern their exploitation.

b). Through the interviews, I was able to sensitise local community members to the ecological importance of wild palms and the sustainable use of this forest resource that is threatened by habitat destruction due to agriculture. I drew their attention to the consequences of the disappearance of palm trees on their systems of subsistence and their economy.

c). Two scientific publications, one of which is ready to be submitted to a peer-reviewed journal and another in progress. A research report in French that I shared with the manager of the reserve including the Man and Biosphere office of Yangambi (MAB Yangambi), the herbarium of the Institut National pour l'Etude et Recherche Agronomique (INERA Yangambi) and the University of Kisangani.

The most important achievement would be the transformation of the way managers and local communities view wild palms. This project has sparked renewed interest from reserve managers and other researchers working in the area. I hope that other researchers and conservationists will join me in studying and developing conservation initiatives for these plants.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

The main unforeseen difficulty encountered was related to the rainy season in the Tshopo region, which prevented us from carrying out the inventory of palms in the forest. All the forests where palm populations are growing were flooded by rainwater. The analysis of palm herbaria that was planned as a preparatory step for the botanical inventory provided me with a lot of information on the ecology and taxonomy of *Raphia* palms in the Tshopo region. I found that there are still impressions about the taxonomy of the palm species that need to be addressed by a phylogenetic taxonomy approach. However, I could not do a phylogenetic analysis with the means I had at my disposal because it implies the analysis of DNA samples of the species, which requires a good laboratory and a substantial budget to pay for the analysis. To solve this difficulty, I decided to implement an alternative ethnobotanical project on the diversity of use and traditional management of wild palms (i.e., those growing initially and spontaneously in the forest). The aim was to analyse traditional systems of knowledge, use, and management of wild palms and their importance in the socio-economic life of local communities. Specifically, the objectives were to examine the diversity of use and analyse traditional palm management practices and strategies. I chose to study only wild palms because I wanted to highlight the impacts of human activities on forest species through this project.

Another unforeseen difficulty that arose during the project was the health and computer problems. After the fieldwork, I got sick, which prevented me from working for a month (March 2022). And in June and August, I had problems with my personal computer. I had to have it repaired at the store's service department. All this prevented me from finalising the project according to the schedule.

4. Describe the involvement of local communities and how they have benefited from the project.

The local communities were the main stakeholder in this project. It is thanks to them that the production of data was possible. They actively participated in the project as informants, agreeing to participate in the survey. They cooperated well with me during the interview and during visits to the forest to show me their fields and their

palm harvesting practices. The local communities benefited from the project through the gifts I gave to all informants. I recruited two community members each month as forest guides and facilitators to recruit informants, to whom I paid per diem.

5. Are there any plans to continue this work?

Yes, I plan to continue this work by trying to address the issue of co-benefits and trade-offs between agricultural or resource use activities by local communities and biodiversity conservation projects. Several protected areas in the Democratic Republic of the Congo benefit from funding for conservation or sustainable development projects, but statistics on deforestation and forest degradation, and the decline of species populations are alarming. Projects that analyse how conservation projects directly or indirectly contribute to the development of sustainable agriculture and the sustainable use of forest resources, and that explore the co-benefits and trade-offs that would exist between local communities and conservationists are needed because conflicts between the two parties seem to be the great challenge for conservation.

6. How do you plan to share the results of your work with others?

I plan to share the results of my work through two scientific publications that will be co-edited by the researchers who participated in the project. The first will focus on "Diversity of use and traditional management of wild palms" and the second will focus on "Conservation and transmission of traditional palm knowledge". This second publication will be based on additional data that I collected during the interviews. I will also share these results via poster and oral presentations that I will hold at international or academic conferences. I will also use my social networking spaces for this purpose. I already shared the project report with the manager of the reserve including the Man and Biosphere office of Yangambi (MAB Yangambi), the herbarium of the Institut National pour l'Etude et Recherche Agronomique (INERA Yangambi) and the University of Kisangani.

7. Looking ahead, what do you feel are the important next steps?

The next important steps are the finalisation of the valorisation of the results of this project through scientific publication(s) and the realisation of other projects that address conservation issues. For instance, a phylogenetic taxonomy work would be interesting and would produce useful scientific information for the revision of the taxonomy of the palms of this region, some of which are not completely identified, and others have doubtful nomenclature. The improvement of the knowledge of this plant taxon will allow for designing appropriate conservation policies. There are also cross-cutting issues described in point 6 of this report which need to be addressed.

8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

Yes, I used the Rufford Foundation logo in all materials produced for this project. I mentioned The Rufford Foundation during the presentation of the project to the staff of the FORETS Project at the University of Kisangani, to the managers of the Yangambi Biosphere Reserve, and to the villagers. I used the logo of the foundation during my presentation of the results of the project at the doctoral seminar held on December 13, 2022, at the Institute of Anthropology, the University of Neuchâtel in Switzerland. I also used the logo and talked about the foundation in the reports of the project and in scientific articles. I also used the logo in my social network space.

9. Provide a full list of all the members of your team and their role in the project.

It was planned to have the participation of **Professor Henrik Balslev R.** of the University of Aarhus in Denmark, ecologist, and specialist in phytosociology of tropical rainforests and páramos, the economic botany of the Palmae, but due to health problems and his multiple occupations, he decided to withdraw from the project.

This project had the participation of **Professor Hippolyte Nshimba Seya Wa Malale**, of the Department of Ecology and Plant Resources Management, Faculty of Science, University of Kisangani, Democratic Republic of Congo. He has been a project supporter of the University of Kisangani and the FORETS Project. It is thanks to him that I was able to benefit from the logistical support of the FORETS project and the herbarium service of the National Institute for Agricultural Research (INERA Yangambi). He also contributed a lot in the conception and consolidation of the ethnobotanical project that was realized as an alternative project.

The staff of the FORETS Project, the Herbarium of INERA Yangambi who gave me logistic support.

10. Any other comments?

I am very grateful to The Rufford Foundation for this grant which allowed me to have my first experience as a project leader and to develop my skills as a project manager, researcher, and conservationist.

Thank you so much for this opportunity that has helped me build my professional career.