

Project Update: September 2022

I am pleased to make an update on the ongoing project of mushrooms in Congo.

Firstly, I would like to inform you that some results from our 1st Rufford Project (ID 32997-1), have been presented today as a poster at the 6th Annual Meeting on Plant Ecology and Evolution (AMPEE6) in Belgium. Our abstract can be found at the website of AMPEE6 at [AMPEE6&COBECORE - AMPEE6 Abstracts \(google.com\)](#) with the title "Assessing the need for wild edible mushrooms' conservation actions in the Republic of Congo". Please find attached the poster presented and the poster when presenting the poster.

Back to the current project (ID 37196-2), I am also pleased to report that the activities are being carried out as planned. I was a bit worried because the team has been on the ground in Mbamou Island (more specifically in Kintegue village) since late August where they conducted interviews, and we were expecting mushroom collecting and selling to start in early September as usual. Unfortunately for this year, there was a delay in precipitation for almost three weeks and it only rained a few days ago. This shift in the period of rain also affected mushroom availability in the harvesting zone. Please find attached some pictures from the Kitengue port. Few more images in the second email.









Assessing the need for Wild Edible Mushrooms' conservation actions in the Republic of Congo



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INTRODUCTION

A report published by FAO (Boa 2006) classified the Republic of Congo among countries where little is known about wild edible mushrooms (WEM). Ngoliele (2014) mentioned the word fungi only once in the 4th national report on Biodiversity. This motivated us to study and document fungi in the country (e.g. Buyck *et al.* 2009; Ndolo Ebika *et al.* 2013, 2018). According to Bishop (1996), monitoring and evaluating benefits of Non-Timber Forest Products on a national and local scale should be a priority as resulting information can be used in forestry regulations, pricing policy, etc. Thus, this study aimed at: (1) generating data on the circuit of WEM; (2) inventorying species of WEM sold in the markets and (3) identifying potential threats on WEM and their habitats.

MATERIAL AND METHODS

The study was conducted from January to November 2021 in three localities (map 1): Brazzaville, Sibiti (Lekoumou Department) and Ouesso (Sangha Department) to: (1) monitor markets for interviewing retailers of WEM (Zent & Zent 2011; Pfoze *et al.* 2012; Koné *et al.* 2013; Mienandi *et al.* 2019) and buying mushrooms sold there; (2) weigh and identify the WEM bought; and (3) conduct fieldwork with harvesters to assess harvesting techniques and potential threats on WEM habitats.



Figure 1 – Activities on WEM.

A-C: Fresh carpophores of *Termitomyces aestivaceus* displayed on market stand with price in XAF (500 XAF = 0.75 € / 1,000 XAF = 1.5 €). D-E: Searching and harvesting *Rhizomorpha* in Ingolo 1. F: Weighing fresh carpophores of *Termitomyces aestivaceus*, weight of 619.5 g for 2,000 XAF (3 €).

Photo credits: A: Ndolo, C: (through market), B/C: Ndolo, D/E: Ndolo, F: Ndolo Ebika, S.T. (field work)

RESULTS

Number of markets and sites. Five main markets (Djougbe, Houkondo, Texaco and Total in Brazzaville and Péage in Kintele) and four sites (Ingolo 1 and Taba in Sibiti, Ngololo and Mbalouma in Ouesso) were monitored.

Species diversity and harvesting zones. Sixteen species of WEM are recorded from markets (*Auricularia delicata*, *A. cornia*, *Lentinus chiodopus*, *L. squarrelus*, *Pleurotus* sp., *Marasmius obtusipolis*, *Russula* sp., *Termitomyces aurantellus*, *T. chrysoellus*, *T. fulvipes*, *T. fulvipes*, *T. glaberrimus*, *T. leucopus*, *T. marmoratus*, *T. reticulatus*, *T. sanguinolentus*, *T. stratus* and *T. sp.*). These WEM come from 40 harvesting zones but Sibiti and Ie-Ngouma being the main ones.

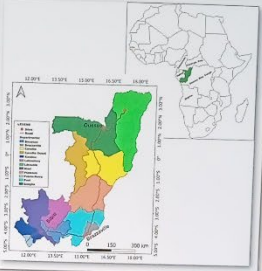
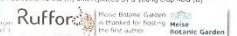
Fungal conservation issue. Clearing of Gilbertiodendron obscurum forest for agricultural and urbanization purposes constitutes the main threat to ectomycorrhizal fungi.



Figure 2 – Harvesting of *Gilbertiodendron obscurum* forest (A) and replaced by a young crop field (B).

Acknowledgments

ICPC and the Botanic Garden of the University of Marien Ngouabi (UMNG) are thanked for hosting these fieldwork activities. We thank Dr. J. P. M. M. for the first author.



Map 1 – Location of the study sites in the Republic of Congo.

One particularity. While the edible part of the 15 fungal species sold in the markets are carpophores, it was very interesting to notice that rhizomorpha (white filamentous and thickened hyphae of *Termitomyces* sp.) were also sold mainly in Sibiti market (Sibiti) and Total market (Brazzaville). The rhizomorpha are only found in Lekoumou department (probably in Niari department also).



Figure 2 – Rhizomorpha of *Termitomyces* sp. A: Underground network pattern, B: freshly collected, C: sold in Sibiti market. Photos: Ndolo & Atikani.

A continuous gathering of solid evidence is needed to propose recommendations to authorities in charge of forest, biodiversity and policy makers in the Republic of Congo for conservation of wild fungi in the country.

Selected Literature

Koné N. A., Ndi K., Kongo S. and Lomonon K. E. 2013. Socio-economic aspects of the activities of *Termitomyces* fruit bodies in central and southern Côte d'Ivoire: Raising awareness for the sustainable use. *J. Appl. Ecol.* 20: 1000-1006.

Mienandi I. G., Ngahoungou B. and Ndolo Ebika S. T. 2019. Study of wild edible Fungi in the markets of Brazzaville (Republic of Congo) Page 10 in N. S. Njiru, and H. P. O. O. (eds) *Wild Edible Fungi: A Global Perspective*. Tropical Horticulture University of Nairobi, Nairobi, Kenya.

Pfoze L., Kuhn M., Giesh G. and Huber B. 2013. Assessment of Local Dependence on Selected Wild Edible Plants and Fruits from Sangha district, Haut-Picard, Nord-Pas de Calais (France). *Journal of Ethnobotany & Ecobiology* 4: 100-107.

Zent S. and Zent E. L. 2011. Ethnobotanical methods for ethnomycological research: quantitative approaches. Paper 33.65 in A. B. Cunningham and S. Tang (eds), *Mushrooms in forest and woodlands: resource management, values and local livelihoods*. Earthscan, London.