



**A COMPARATIVE STUDY ON NATURAL RESOURCES
MANAGEMENT BY LOCAL COMMUNITIES IN TWO
MAIN EDIBLE MUSHROOM HARVESTING LOCALITIES
IN THE REPUBLIC OF CONGO**



Mid Term Report



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Brazzaville, 24th November 2022

Abstract of the Project

The 2nd Rufford Small Grant number 37196-2 titled « A comparative study on natural resources management by local communities in two main edible mushroom harvesting localities in the Republic of Congo » aimed at (1) understanding management systems of wild edible mushrooms in Lekoumou Department and Ile Mbamou and (2) estimating how much benefit to local community can get from the managing system used in their area. Five activities had been planned for the period from August 2022 to July 2023. These five activities comprise: (1) training of students and researchers, (2) interview of local population, (3) mapping of the harvesting sites managed by locals, (4) monitoring the transition between rhizomorphs and corresponding fruiting bodies and (5) evaluation of biological and commercial productions.

This mid term report is providing information about activities carried out from August to November 2022. It will cover the first activity carried out in Brazzaville and all activities scheduled for Ile Mbamou.

I. Activities and timescale

I.1. For Brazzaville

One activity (activity 1) was planned to be carried out in Brazzaville. It consisted of identifying researchers and Master students who will participate to the project and training them for the implementation of the project. This was scheduled for August 2022.

I.1. For Ile Mbamou

Three activities (number 2, 3 and 5) were planned to be conducted at Ile Mbamou from August to December 2022.

II. Preliminary results

II.1. Prospection of Ile Mbamou

The Project Leader and the Accountant of the NGO ICPC made a preliminary investigation on the exact village where the mushrooms are harvested after finding that the Ile Mbamou is an Island composed of about 23 villages and temporary camps. Thus, in June 2022, we made a trip to Kitengue (located on the Congo River at 7 Km E of Brazzaville from Yoro Port) which is mentioned as the closest and main harvesting village of the Ile Mbamou to assess for living condition and get first insights into the way mushroom activity is run in the locality.

Based on the information obtained, we were in a better position to plan for the mission and re-adjust the number of people to be involved in the project for that locality.

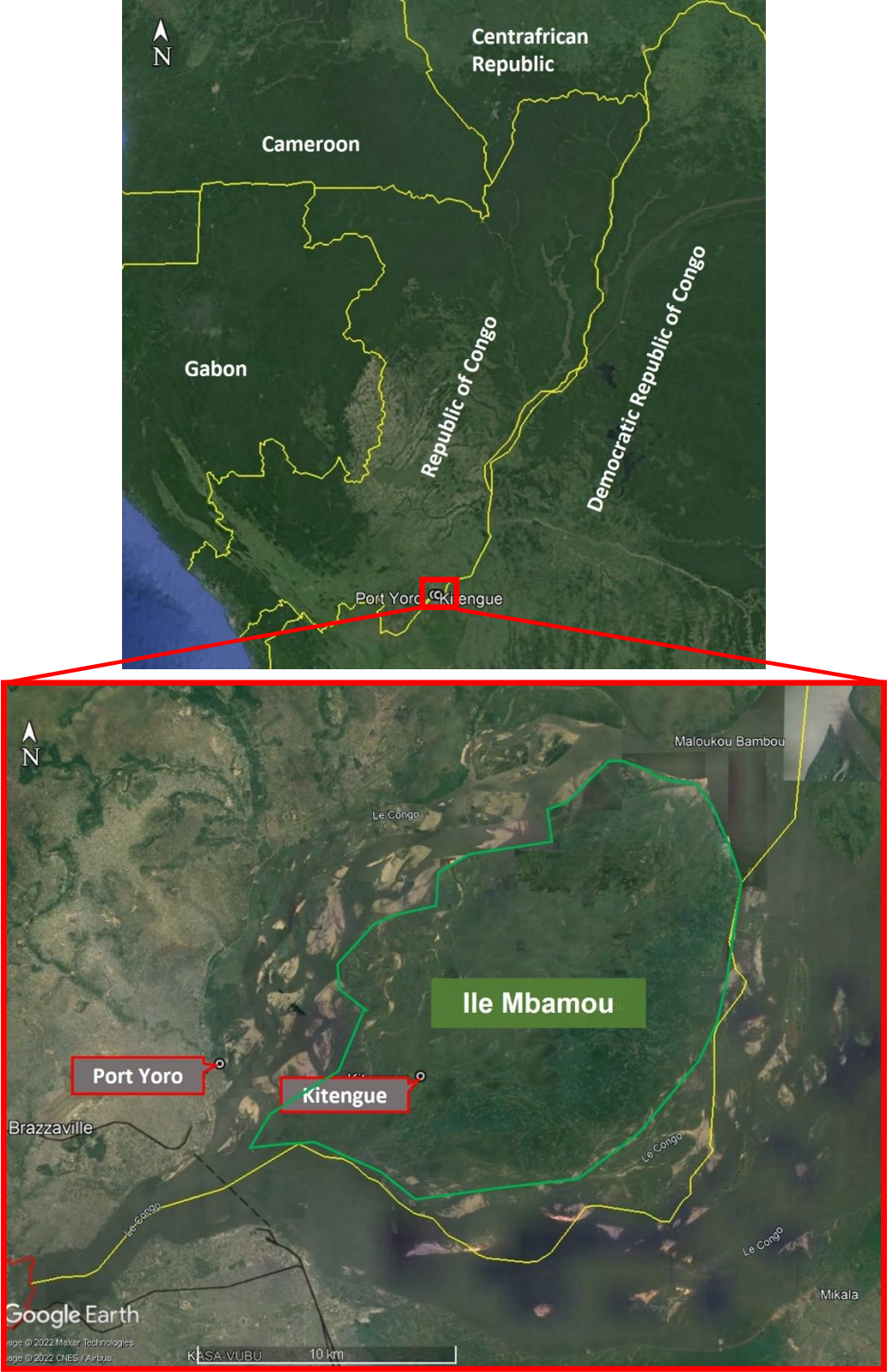


Figure 1 : Location of Kitengue in the Republic of Congo

II.2. Identification and training

Six participants (four Research Assistants and two MSc students) were identified from the ICPC and two establishments of the Marien Nguabi University namely the Faculté des Sciences et Techniques (FST) and the Ecole Nationale Supérieure d'Agronomie et de Foresterie (ENSAF). Names of the participants are provided in the table 1.

Name	Function for the project
Gallion Berdol ATIKANI	Research Assistant
Juvey Maveric WAWA	Research Assistant
Celie Léoda MOUNGOUYA MOUKASSA	MSc Student
Freddy DZOULOU	Research Assistant
Destin Dieuveil NGANGA MATONDO	Research Assistant
Taime MOUZEMBO	MSc Student

Table 1 : Names of the participants identified for the project.

In July 2022, this team was trained in the use of interview forms and forms for assessing natural production for wild fungi.

Four of them (Atikani, Wawa, Mougouya and Nganga) were selected to conduct the first part of the project in Ile Mbamou. Unfortunately, Mr Nganga was not available to make the trip in Ile Mbamou and was replaced the last minute by another person, Mr Tibeau Slège IKANGO.

II.3. Interview of local population

Interview of the local population in Kitengue village was conducted by four team members from 23rd to 27th August 2022. The figure 2 shows the team who conducted the project in Kitengue while the figure 3 illustrates the interview process. Preliminary results show that all ages (youth, adult and elder) are involved in collecting mushrooms for one mainly for commercial purposes. A small quantity of the harvested mushrooms can be used for local consumption.



Figure 2 : Team of the Rufford Project in Kitengue (Ile Mbamou). From left to right : Juvey Wawa (team leader), Celie Mougouya, Gallion Atikani and Tibeau Ikango. *Kitengue, 30th August 2022.*



Figure 3 : Team of the Rufford Project conducting interviews in Kitengue (Ile Mbamou).

II.4. Mapping of the harvesting sites

To map the harvesting sites in Kitengue, the team was accompanying local population in the wild to document the harvesting techniques as well as locating the sites. In total, 17 collecting sites (zones) were identified. They are located from 340 m to 2,62 km from the village Kitengue (fig. 4a). The main habitat type where mushrooms were collected was savanna on terra firma that is frequently managed by means of fire that locals set each year (figs.4b and 5a). They are also characterized by presence of termite mounds (figs.5b). This burning strategy is a way for local population to try cleaning up the vegetation in order to facilitate seeing mushrooms during foray. If the vegetation is thick (fig.5c), it will make it difficult for the collectors (fig.5d) to locate the mushrooms.

As shown on the figure 4, all collecting zones do not fall in the forest. This meets the subdivision of mushroom foraging into two main periods : February to April for mushrooms growing in the forest and September to November for those growing in savanna.

II.5. Evaluation of biological and commercial productions

Amaranthus & Pilz (1996) defined a Biological Production (BP) as an estimation of the weight of only individuals that have reached maximum size whilst a Commercial Production (CP) is an estimation of the weight of all mushrooms in good state collected for selling purposes in a given area.

In Kitengue, we found that it was not realistic to expect evaluating the BP because of the huge interest of the commercial activity for local population. All mushrooms harvested in the wild had to be quickly sold to retailers coming from Brazzaville early in the morning in order to allow those retailers to bring back the products on markets in Brazzaville before 12 PM. On a daily basis, the team was working in close collaboration with harvesters and retailers to weight mushrooms picked up in the wild. The figure 6 shows the collected mushrooms, some actors and the weighing process.

The daily total weight of mushrooms harvested and sold in Kitengue varied from 2.415 to 880.167 Kg (fig. 7) with a grand total of 5 tonnes in about six weeks.

II.6. Mushroom diversity

All containers weighed were composed of a mixture of different species of a single genus *Termitomyces* (fig. 8). The commonest *Termitomyces* found is *T. aurantiacus* characterized by its

bright orange cap. A second species found was *T. singidensis* with a brown cap and a few other species still to be identified.



Figure 4 : Maps of the collecting zones in Kitengue. a) 17 zones are explored by locals in Kitengue to harvest mushrooms; b) details of the zones showing the burned physiognomy of the savanna.



Figure 5 : Collecting zone. a) a burned savanna ; b) a termite mound in savanna ; c) collector looking for mushrooms in a thich vegetation ; d) mushrooms picked up in a savanna.



Figure 6: Collected mushrooms for a commercial purpose. a et b) harvested mushrooms waiting to be weighed ; c) children having collected mushrooms ; d) collected mushrooms being weighed.

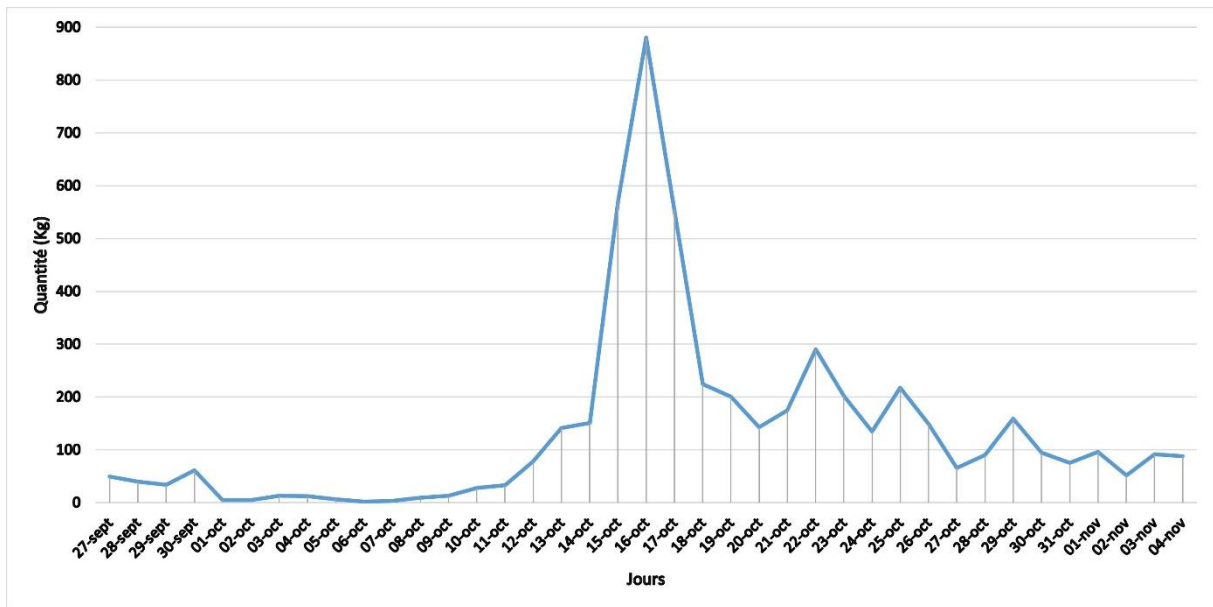


Figure 7: Daily evolution of the quantity of collected mushrooms in Kitengue during the study period.



Figure 8: A container dominated by *Termitomyces aurantiacus*.

III. Follow up

The period from August to November allowed us to successfully conduct activities scheduled for that period.

We are expecting Ms. Celie Mougouya to defend her Master dissertation in December.

Data are being cleaned and treated for preparation of a manuscript based from data collected in Kitengue.

From January 2023, we will start the second part of the project which will focus on another harvesting zone : Sibiti.