Final Evaluation Report

We ask all grant recipients to complete a project evaluation that helps us to gauge the success of your project. This must be sent in **MS Word and not PDF format**. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please DO NOT fill in and submit this form until the project has been completed.

Complete the form in English. Note that the information may be edited before posting on our website.

Please email this report to jane@rufford.org.

Your Details	
Full Name	WAWA Juvey Mavéric
Project Title	Assessment of biological productivity and habitat for the conservation of the genus *Cantharellus* (Cantharellales, Basidiomycota) in the Republic of Congo
Application ID	45038-2
Date of this Report	09 January 2026

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
Determine the specific diversity and biological productivity of the genus *Cantharellus* in these areas				Some species have been identified, but the specific diversity is likely underestimated due to limitations related to the fruiting season and the limited sampling period. Furthermore, no species were found within the plots, preventing the evaluation of biological productivity. A total of 33 people were interviewed, divided into three age groups: young adults (18–30 years), adults (31–50 years), and older adults (51 years and above). Among them, 18 were women and 15 were men. The interviews revealed that mushroom collection is practiced across all age groups and by both sexes, primarily for commercial purposes, particularly for mushrooms of the genus *Termitomyces*. It is also used for household consumption and, in some cases, for medicinal purposes.

Providing information on habitats and trees where *Cantharellus* species occur				Some associations between *Cantharellus* species and habitat/tree types were observed, but the data is still insufficient to establish strong ecological links.
Produce a preliminary checklist of *Cantharellus* species and their distribution for the surroundings of those two national parks.				An initial list was created but remains incomplete due to missing data from certain areas and requires further taxonomic validation.

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

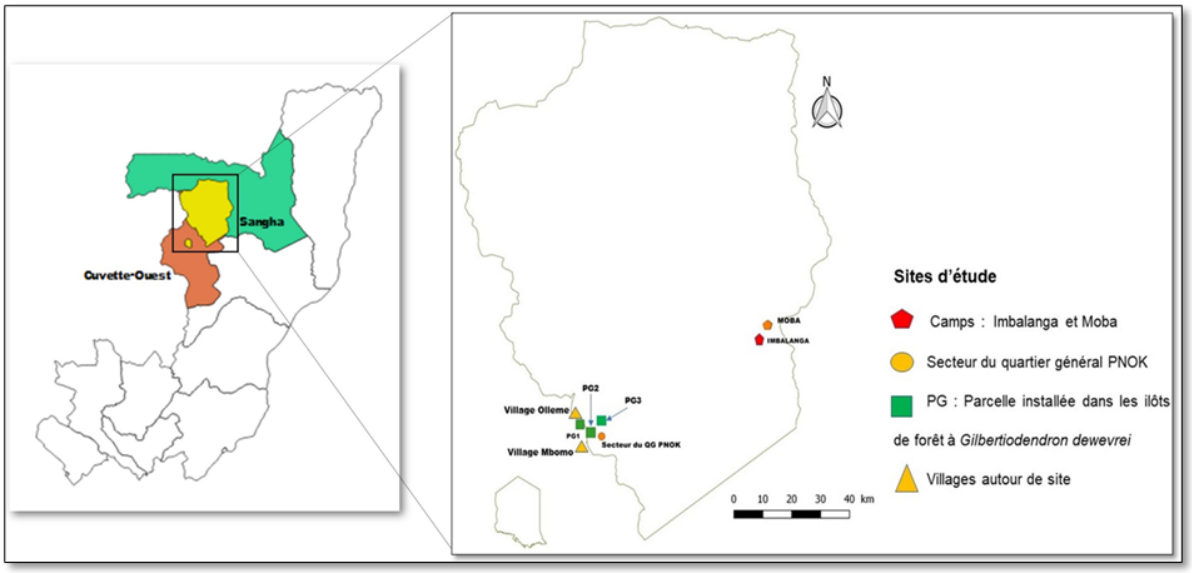
a). Macrofungal Diversity and Socio-Economic Potential

This study aimed to assess the diversity, socio-economic importance, and distribution of mushrooms belonging to the genus *Cantharellus* in and around the Odzala-Kokoua National Park (OKNP). Three experimental plots (PG1, PG2, and PG3), each measuring 50 m × 50 m, were established within forest islands dominated by *Gilbertiodendron dewevrei* (locally known as "Ebembe" by the indigenous communities of Mbomo). One plot was installed on the periphery, near the village of Ollèmè, and two others inside the park, in order to evaluate the biological productivity of *Cantharellus* species (see Map 1). The plots were monitored twice a week during the rainy season to inventory macrofungal diversity and to assess the weight of chanterelle fruiting bodies per unit area. At the end of these observations, no chanterelle species were recorded within the monitored plots. However, four *Cantharellus* species (*C. addaiensis*, *C. luteopunctatus*, *C. pseudomiomboensis*, and *Cantharellus* sp.) were collected opportunistically, sparsely, and infrequently. In total, 392 fruiting bodies were collected, representing 28 families, 46 genera, and 49 species (see Table 1). Among them, 67% were saprotrophic, 32% ectomycorrhizal (Table 2)., and 1% parasitic. Thirty species (30) were edible, notably those belonging to the genera *Cantharellus*, *Lentinus*, *Marasmius*, and *Termitomyces*, according to ethnomycological surveys. Furthermore, six species with medicinal uses were identified: *Cookeina speciosa*, *Lentinus sajor-caju*, *Auricularia* sp., *Pleurotus tuber-regium*, *Polyporus*, and *Russula*, locally known as Disoko, Otandi, Tetete, Douma, and Tetete, respectively. It is worth noting that most *Cantharellus* species were collected on the periphery, suggesting that these fragmented forests could be sustainably managed for the production of high-value non-timber forest products (NTFPs), while generating socio-economic

benefits for local communities. Moreover, some species were observed only in specific sites, highlighting the importance of comprehensive conservation of these habitats.

Interviews conducted with local populations confirmed the presence of *Cantharellus* in the area. This information was supported by our field surveys: accompanied by local guides, we collected, through opportunistic sampling, a few specimens belonging to this genus, which nevertheless proved to be rare during this mycological season. Within the communities, these mushrooms are known by the vernacular name "Allembe," a generic term used to refer to species of the genus *Cantharellus* (see photo below).

Figure 1: Specimen of *Cantharellus* collected in the peripheral zone of Odzala-Kokoua National Park during an opportunistic survey in mixed forest with *Uapaca*, in the village of Mbomo.



Map 1: presentation of the study area

Table 1: diversity of Saprotrophic and Parasitic Fungi (only *Marasmius* sp., locally known as Timiselani)

Family	Genus	Species	Number of specimens
Agaricaceae	*Agaricus, Lepiota, Leucoagaricus, Macrolepiota*	*dolochaula*	42
Amanitaceae	*Amanita*	*calopus, echinulata, squamulosus*	29
Auriculariaceae	*Auricularia*	*cornea, delicata*	18
Boletaceae	*Boletus, Phylloporus, Strobilomyces, Pulveroboletus, Tubosaeta*	*echinatus*	25
Coprinaceae	*Coprinus*		4
Cortinariaceae	*Gymnopilus*	*zenri*	12
Geastraceae	*Gaestrum*	*lageniforme*	2
Hydnaceae	*Cantharellus*	*addaiensis,luteopunctatus, pseudomiomboensis*	17
Hygrophoraceae	*Hygrocebe*		6
Lyophyllaceae	*Termitomyces*	*clypeatus, entolomoides, fuliginosus, globulus, meduis,striatus*	32
Marasmiaceae	*Marasmius, Trogia,*	*arboreus, buzongolo, infundibuliformis*	52
Nevrophyllaceae	*Nevrophyllum*	*brunneum*	2
Nidulariaceae	*Cyathus*		2
Omphalotaceae	*Neonothopanus*	*hygrophanus*	4
Phallaceae	*Dictyophora, Mutinus*	*simplex*	3
Phanerochaetaceae	*Donkia*	*sanguinea*	1
Physelacriaceae	*Armillaria, Oudemansiella, Paraxerula*	*heimii*	7
Pleurotaceae	*Pleurotus*	*tuber-regium*	6
Pluteaceae	*Pluteus, Volvariella*	*volvacea*	7
Polyporaceae	*Echinochaete, Favolus, Lentinus*	*brachypora, tenuiculus, sajor-caju, squarrosulus*	38
Rhodophyllaceae	*Rhodophyllus*		2
Russulaceae	*Lactarius, Lactifluus, Russula*		53
Sarcoscyphaceae	*Cookeina, Phillipsia*	*speciosa, carminea*	6
Schizophyllaceae	*Schizophyllum*	*commune*	1
Sclerodermataceae	*Scleroderma*		1
Tremellaceae	*Tremella*	*fuciformis*	3
Tricholomataceae	*Collybia, Filoboletus, Laccaria*		7
Inconnu			10

Family	Genus	Species	Number of specimens
Amanitaceae	*Amanita*	*calopus, echinulata, squamulosus*	29
Boletaceae	*Boletus, Phylloporus, Strobilomyces, Pulveroboletus, Tubosaeta*	*Echinatus*	25
Hydnaceae	*Cantharellus*	*addaiensis, luteopunctatus, pseudomiomboensis,* sp	17
Russulaceae	*Lactarius, Lactifluus, Russula*		53

Table 2: diversity of Ectomycorrhizal Fungi

Family	Specimens	Proportion (%)
Russulaceae	53	43
Amanitaceae	29	23
Boletaceae	25	20
Hydnaceae	17	14

Table 3: relative Abundance of Ectomycorrhizal Fungi

The results reveal that the ectomycorrhizal community is largely dominated by the Russulaceae family, followed by Amanitaceae and Boletaceae. Although less abundant, Hydnaceae still represent a significant portion of the observed fungal diversity. It is worth noting that the majority of the species were collected outside the mycological plots established for the evaluation of biological productivity. In contrast, no species of the genus *Cantharellus* were recorded within these plots.

b). Host trees identified in association with *Cantharellus* species

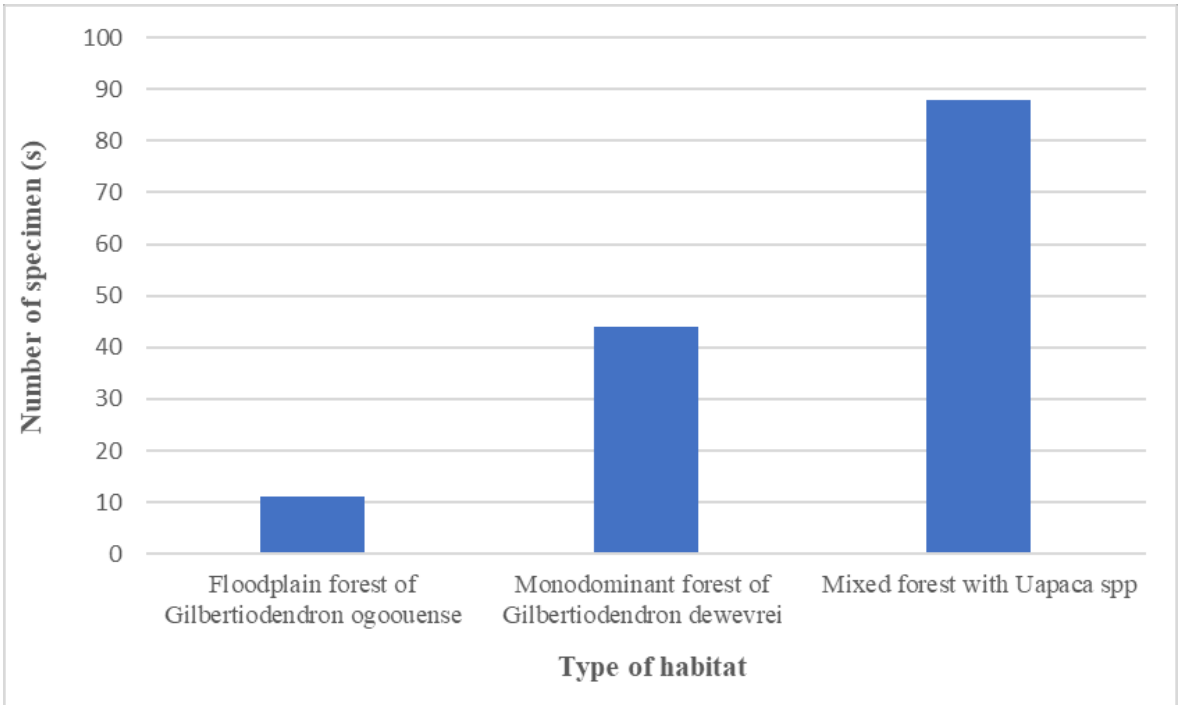


Figure 2: distribution of *Cantharellus* specimens across forest habitat types

The graph clearly shows that *Cantharellus* species are not evenly distributed across habitat types. The highest number of specimens was recorded in the mixed forest with *Uapaca* spp. In comparison, the monodominant forests of *Gilbertiodendron dewevrei* yielded a moderate number of specimens, while the floodplain forests of *Gilbertiodendron ogooouense* produced very few.

c). Training of two PNOK assistants, including a young Bantu from the village of Mbomo, and five Indigenous participants in field mycological inventory techniques.

Participants were selected through a targeted and inclusive approach, taking into account their institutional affiliation, their link with the local communities, their level of study, and their potential to reuse and disseminate the skills acquired. Priority was given to: (i) PNOK staff directly involved in field activities to strengthen the park's internal technical capacity; (ii) a young Bantu student from the village of Mbomo in order to build local youth capacity and encourage future engagement in biodiversity conservation; (iii) members of Indigenous communities, as key holders of traditional ecological knowledge and regular forest users; and (iv) a PhD student whose research activities require advanced skills in mycological inventory and who can ensure scientific continuity. This combination made it possible to balance institutional reinforcement, local community involvement, intergenerational knowledge transfer, and academic training.

Participant (s)	Origin / Status	Activity conducted
1 student (3rd-year of secondary school)	Young Bantu from the village of Mbomo	Training in field mycological inventory techniques
2 PNOK assistants	Park staff	Training in field mycological inventory techniques
5 Indigenous	Indigenous peoples	Training in field mycological inventory techniques
1 PhD student (ongoing)	Student	Training in field mycological inventory techniques

Table 5: participants trained in mycological inventory techniques

These participants received field training in key mycological inventory techniques, including sample collection, opportunistic surveying, and plot installation.

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

During the project, several unforeseen difficulties were encountered:

- The remoteness of the monodominant forests made access to the study sites particularly challenging, resulting in longer travel times than expected and requiring frequent adjustments to the fieldwork schedule.
- The failure of some Indigenous guides to fulfil their commitments to participate in the mycological monitoring program disrupted the planning of field trips. This issue was resolved through the involvement of other Bantu guides, whose availability ensured the continuity of activities.
- The frequent presence of elephants along access routes and sometimes within the plots themselves, especially inside the Park, posed a significant risk to the team and caused delays. Adjustments to itineraries, increased vigilance, and safe waiting periods allowed the work to continue without incidents.

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

Local communities were actively involved in the project through various field activities. They participated in mycological inventories, sample collection, the establishment and monitoring of plots, and shared their traditional knowledge about mushrooms and forest ecosystems. Through their participation, they gained several benefits:

- **Skills development** : learning scientific techniques for inventory and monitoring of mushrooms.
- **Recognition of traditional knowledge** : integrating their local knowledge with scientific methods.
- **Socio-economic opportunities** : compensated participation or acknowledgment within the project framework.
- **Environmental awareness** : improved understanding of the importance of forest conservation and mycological resources.

5. Are there any plans to continue this work?

During our mission in the park, we observed that some researchers were photographing mushrooms and building a considerable database, notably through **iNaturalist**. However, many photos remain unidentified, which limits the scientific use of these data. In addition, we were unable to assess **biological productivity** (weighing of fruiting bodies) during this mission.

Based on these observations, the perspectives for continuing the project include:

- **Identification and validation of existing data** : collaboration with the research and monitoring lead to identify unclassified photos in the existing databases.
- **Supplementing field inventories** : systematic collection of samples and assessment of biological productivity (weight and abundance of fruiting bodies).
- **Strengthening digital databases**: integration of local data and new observations into accessible platforms such as iNaturalist, with complete metadata.
- **Continuous training of communities and assistants** : to improve data collection and ecological monitoring of mushrooms.

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

To share the results of our work with others, we plan to use several complementary strategies:

- **Scientific publications:** writing and submitting articles to specialized journals to disseminate our findings within the scientific community.
- **Conferences and seminars:** oral or poster presentations at national and international conferences, workshops, and seminars to engage directly with other researchers and professionals in the field.
- **Institutional reports:** preparing concise reports for local partners, research institutions, and natural resource managers to facilitate decision-making.
- **Public outreach:** organizing workshops or publishing popularized materials (on the website of the NGO *Initiative des Champignons et Plantes du Congo*,

brochures, social media) to raise public awareness about the issues and results of our work.

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

For the future, the next important steps could include:

a. **Completing species identification and documentation:** finalizing the precise identification of collected samples and enriching the existing database to better understand local mycological diversity.
b. **Ecological and functional analysis:** studying species distribution, ecological roles, biological productivity, and interactions with the environment and local communities.
c. **Capacity building:** training more researchers and local partners in field techniques, data collection, and the use of digital tools for mycological research.
d. **Dissemination of results:** publishing scientific findings, producing field guides or identification keys, and sharing information with decision-makers and the general public.
e. **Conservation and sustainable management projects:** developing strategies for species conservation and sustainable management of mycological resources in collaboration with local communities and environmental authorities.

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 have used the Rufford Foundation logo in several materials produced as part of this project. The Foundation received significant visibility during our field mission at PNOK through a presentation held in March 2025. It was also highlighted during the scientific writing workshop organized by the program Applied **Research in Ecology and Social Sciences to Support the Sustainable Management of Central African Forest Ecosystems** (RESSAC), held in Brazzaville from September 29 to October 2, 2025.

Additionally, the logo was displayed during the annual conference of the **Congo Basin Science Initiative** (CSBI), organized in partnership with the University of Oxford, from January 7 to 9, 2026, in Brazzaville (https://congobasinscience.net/news/cbsi-annual-conference-2026/). Finally, the Foundation is acknowledged in a manuscript already accepted for publication in the journal ***Sydowia***.

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

Here is the complete list of team members who contributed to this project, along with their respective roles.

Full name	Function in the project	Locality	Role in the project
Juvey Mavéric WAWA	Principal Investigator	Brazzaville	Planning and supervision of the activities, training, execution of fieldwork in Park, Mbomo and Brazzaville
Sydney Thony Ndolo Ebika	Supervisor	Brazzaville	Supervision of the activities
Célie-Leoda MOUNGOUYA-MOUKASSA	Intern student	Brazzaville	Execution of fieldwork in Mbomo
Louzitou, R.B	Research assistant in PNOK	Mbomo and Imbalanga	Guide in the field
Morgan	Research assistant in PNOK	Mbomo and Imbalanga	Guide in the field
Ndoumou Pascal	Informant and guide	Mbomo	Guide in the field
Adouma Patrick	Informant and guide	Mbomo	Guide in the field
Morris Kombe	Informant and guide	Mbomo	Guide in the field
Thomas	Informant and guide	Mbomo	Guide in the field
Olongo Jean-François	Informant and guide	Mbomo	Guide in the field
Kondo M.	Informant and guide	Mbomo	Guide in the field
David	Informant and guide	Mbomo	Guide in the field
Willy	Informant and guide	Mbomo	Guide in the field
Bifouma	Informant and guide	Mbomo	Guide in the field

10. Any other comments?

We would like to emphasize that this project has significantly strengthened knowledge of local mycological diversity and has helped develop field research

capacities. Collaboration with our local partners, as well as the continuous support of the Rufford Foundation, were essential to the success of our activities.

We ensured broad and transparent dissemination of the results, both within the scientific community (publication, open databases available to students) and among the general public and local stakeholders (workshops, the website of the NGO *Initiative des Champignons et Plantes du Congo*).

For the future, we plan to continue this work through the identification and validation of existing data, in collaboration with the Head of Research and Monitoring, in order to classify unverified photos in existing databases, as well as through strengthening local capacities and developing strategies for the conservation and sustainable management of mycological resources.

We also wish to express our sincere gratitude to Ms. **Jane Raymond**, whose role as liaison between us and the Rufford Foundation was crucial. Her availability, sense of service, and constructive communication greatly contributed to the success of this project.

To all the PNOK staff in general, and particularly to Dr. Gwili GIBBON, Head of Research and Monitoring, for all the support provided for the completion of this study.

ANNEX – Financial Report
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