Final Evaluation Report

Your Details	
Full Name	Cédric Chimi Djomo
Project Title	Improvement of ecological knowledge of threatened species and behavioural change concerning their conservation in Cameroon's Doumaintang communal forest
Application ID	33431-1
Date of this Report	22nd May 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
Investigate studied species goods and services and associated human well-being provided to Managers and Local Communities in the Doumaintang Communal Forest (DCF).				Semi-structured surveys in 295 households, at least three focus groups including between 15-20 people, and an interview with the authorities in charge at the Doumaintang Communal Forestry Cell (CFC) have been carried out in the nine villages neighbouring the Doumaintang Communal Forest. These activities allowed us to understand the target species' goods and services (i.e., *Aphanocalyx hedinii, Autranella congolensis, Baillonella toxisperma, Garcinia kola*, and *Tieghemella africana)* provided to the population and the CFC managers. Hence, this activity did not reveal the pressure on the species' resources but gave an idea of their collection areas in the Doumaintang communal forest (DCF).
Determine the spatial distribution, habitat, population size of each studied species in the DCF				Using line transects, a selective botanical inventory was carried out in 48 ha to characterise the habitats and structure of the different target species. The target species was found only in three (i.e., mature secondary forest, periodically swamp forest, and culture/fallow) out of the five habitats identified in the sample area. Moreover, the stems target species (42) were identified and characterised in the 48 ha inventoried. We did not find the species *Tieghemella africana* during the botanical inventory.
Develop and implement outreach activities material to change the local communities and forest manager's behaviour towards best				After the first few days of the household survey in the village of Doumaintang, poor and bad management and conservation practices for the target species were identified. Given the constraints of Covid-19 and the barrier

practices for Biodiversity Conservation and Sustainable Management (CSM)				measures to be respected, we decided to take 10-15 minutes to raise awareness during the household survey and focus group phases. Moreover, we also used the opportunity to raise awareness among the key stakeholders in the Doumaintang municipality after sharing the study results during the workshop. The workshop involved the participation of 25 persons, including the sub-prefect, the mayor, two (one man and one woman) representing the Comity Forest-Peasants (CFP) of each village, members of the Doumaintang CFC, a researcher of IRAD and a team member of CSNRM-Net. We take the opportunity to analyse and identify the different strategies to improve the biodiversity conservation and sustainable management in the Doumaintang municipality. Hence, strategies validated were reforestation, domestication of these species, applying the best harvesting method, limiting forest conversion in agricultural land, etc.
Project management, communication, and dissemination of the project results.				The workshop is the first outreach activity of this project. Indeed, as mentioned above, the workshop was an opportunity to share the study results with stakeholders. In addition, the results of this project will be the subject of many other activities, including a forthcoming MSc thesis defence, at least three scientific publications under finalisation, and presentations at conferences. We will use the social network and the platforms currently in the development stage (i.e., Conservation and Sustainable Natural Resources Management Network (CSNRM-NET) Facebook page (@CsnrmNetworkCameroon) and website(www.csnrm-net.org) to disseminate the results.

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

At the end of this project, we are delighted with the results obtained, the most important of which are:

a). One of the objectives of all the projects carried out within the CSNRM-NET organisation, of which I am the project manager, is to strengthen the capacities of the local populations for a follow-up of the projects and hence, long-term impact. To this end, this project has strengthened the capacities of 5 members of the Community Forestry Unit and four students/volunteers at the CSNRM-NET. Finally, it contributed to the personal and professional development of a master's student who will soon submit her MSc thesis.

b). The estimated density of other four species was: *Baillonella toxisperma* (0,93±0,06 N/ha); *Aphanocalyx hedinii* (0,21±0,00 N/ha), *Autranella congolensis* (0,26±0,11 N/ha) and *Garcinia kola* (3,58±2,19 N/ha). Globally, the sampling shows that concerning these species' population size, they are very less in DCF. Only the *Baillonnella toxisperma* with a Regeneration Index (RI) more than 1 shows good natural regeneration; other species with less RI showed a weak natural regeneration of these species in DCF. We did not find the species *Tieghemella africana* during the botanical inventory.

c). The socio-economic survey, focus group and the workshops allow identifying foods, timber, raw material for construction, traditional medicine, and source of income like significant goods and services that the target species provide to local people and managers of DCF. However, their resource becomes rare due to the high anthropogenic pressure and the bad harvesting methods they apply. A weak availability of these resources was also confirmed by botanical inventory done in 48 ha and where only 42 stems of target species were found, meaning less than one target tree per ha.

Identify the bad harvesting techniques of resources provided by target species and discuss with more than 250 local communities to change behaviour on the best strategies or practices they can apply to maintain these resources for future generations.

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

We did not face any major difficulties during the implementation of this project. However, among the challenges faced, we can mention the one related to travel due to the impassable and challenging state of a part of the Doume-Doumaintang road (55 km); the environmental conditions since we conducted the socio-economic surveys during the rainy season. However, we took steps to protect ourselves by having personal equipment against the rain (e.g., coat, boots). We cannot forget the COVID-19 pandemic, which could have impacted the implementation of the project. However, we took the government's barrier measures seriously, carefully following them.

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

The long-term monitoring and success impact of a project require the involvement of all stakeholders, including local people at all levels of the project.

Therefore, local communities were involved in all the steps of the project activities. Firstly, during the household survey, one local guide in each village riparian to the DCF was recruited, trained, and engaged as a resource person. Secondly, six local people (CFC managers and village neighbouring) were involved in the botanical inventories, and therefore, their capacities and knowledge were strengthened in the field data collection. Thirdly, as resource persons, the administrative authorities (CFC managers) and traditional authorities (i.e., village chiefs) were involved in the focus group phase. Finally, each village chief accompanied by two CFP members took part in the workshop with the administrative authorities (sub-prefect, mayor and managers of CFC). At the end of the workshop, everyone expressed their joy and desire to see projects like this one that could help them in the sustainable management and conservation of their resources.

5. Are there any plans to continue this work?

Yes, we plan to continue this work given the challenges and the enthusiasm and desire of local people and CFC managers to engage in the sustainable management and conservation of their forest resources.

Capacity building of managers and CFP members in terms of monitoring the management and exploitation of their forest, in terms of good practices related to low impact exploitation of biodiversity. Continue to raise awareness of good resource management and conservation practices. Strengthen the capacity of these populations in alternative income-generating occupations to reduce their dependence on forest resources. Develop a project to implement onsite conservation, nursery, and domestication actions through target species tree planting. Therefore, the second round of Rufford small grants could be used to guarantee an increase in the potential production of these species in DCF, which will improve the livelihood of the local populations in the years ahead.

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

Firstly, the result of our study was already shared during the workshop with different stakeholders involved in forest management, especially concerning target species. A final validated report will be shared with IRAD, CSNRM-net NGOs, the mayor, and the sub-prefect of Doumaintang. We have previously shared their progress report (mayor and sub-prefect). During focus group and workshop activities, we also needed to share the results of our study with local communities. We plan to share also the final report with various chiefdoms bordering the communal forest. On the other hand, a scientific paper related to this project will be provided as soon as possible, and the publication will be available to anybody. We will also use our different research platforms (i.e., ResearchGate, LinkedIn, Facebook, etc.) to ensure that we have maximised the communication of the results of our study.

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

- Train local people and manager of DCF on different steps required for an establishment of the nursery and these species (seeds selection in the field, nursery put in place, monitoring of nursery).
- Strengthen the capacities of collectors on vegetative propagation technique.
- Educative speaker on the importance of domestication of forest trees.
- Contribute to the reforestation of DCF with target species.
- Strengthen the capacity of these populations in alternative income-generating occupations to reduce their dependence on forest resources.

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?

We use the Rufford logo in the following materials: formal letters, PowerPoint presentations during the workshop, Banderols, pens, and t-shirts during socio-economic surveys and outreach activities. Also, the Rufford logo was present on all t-shirts shared with all the participants involved during the workshop. During the field activities and presentations, the origin of funds, which allowed us to carry out this study, was explained to participants. We present to them the world contribution of The Rufford Foundation to the sustainable management of biodiversity for the well-being of local communities.

In the project, one master's student has involved the writing of the thesis is in progress. Hence, the Rufford logo will be used in her presentation during their defence. The outcomes of the study are the scientific publications, which in the five manuscripts in finalisation, the RF is well acknowledged. Copies will be made available to the RF when published. The Rufford name is already posted on the CSNRM-NET website as the project's funder (https://csnrm-net.org/project/projet4/).

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

The collaborator and resource person was composed of:

Dr. FOBANE Jean Louis (Senior lecturer): He helped to plan the fieldwork and will continue to contribute to the writing of papers as he is a specialist in botany and forest ecology.

Pr. MBOLO Marie Marguerite (Professor): Professor at the Laboratory of Botany-Ecology at the University of Yaoundé I, Cameroon. She gave and continues to provide us with advice regarding forest ecology and conservation.

Pr. Zapfack Louis (Professor): Professor at the Laboratory of Botany-Ecology at the University of Yaoundé I, Cameroon. He gave and continues to provide us with advice regarding forest ecology and conservation.

Specialist of the field team was composed of:

Dr. Chimi Djomo Cédric: is a PhD holder in Forest Ecology and Natural Resources Management and Project investigator; He is a Researcher at the Institute of Agricultural Research for the Development (IRAD) and Program coordinator at CSNRM-NET Organisation.

Dr. Zekeng Jules Christian: He is a Ph.D. holder in Tropical Ecology and Plant Conservation. In addition, he is the Executive Coordinator of Conservation and Sustainable Natural Resources Management Network (CSNRM-Net), Yaoundé – Cameroon. His experience in the Doume Communal was beneficial for achieving this project.

Dr. Njouonang Djomo Harold Gael: Ph.D. in Geography, with significant expertise as an animator, was our supervisor during the implementation of outreach activities and participated as a panel member of the workshop.

Tchonang Djoumbi Bienvenu Leonnel: PhD student at the University of Yaoundé I in Cameroon working. He is a volunteer at CSNRM-NET Organisation. He was the assistant of the Project investigator. He was involved in field data collection, outreach and workshop;

Yonga Guylaine: PhD student at the University of Yaoundé I in Cameroon. She was involved in field data collection, outreach, and workshop. She was also the secretary during the workshop.

Sakou Wandji Rozane: is MSc Student in Ecosystems Services and Deputy Financial Officer at the CSNRM-NET organization. She supervised and managed the household survey and the Workshop organization and was also involved in botanical inventory. She will also write a Master's thesis with some data obtained within the project.

Miss MAKOUTSING TALLA Ameline Clarence: Msc student and volunteer at the CSNRM-NET. Field team member and ecologist. She was responsible for managing logistics and human resources during the botanical **inventory phase of the project.**

Noutanewo Pany: MSc student at the University of Yaoundé I in Cameroon. Volunteer at the CSNRM-NET Association. He was involved in field data collection, outreach, and workshop.

Tonkam Loic: a Bachelor's Student in Plant Biology at the University of Yaoundé 1, was part of the botanical inventory field team.

Mr. AWEMO Norbert: Head of the Forestry Unit in the Commune of Doumaintang. He was our interlocutor and liaison with administrative and traditional authorities and the local populations.

Four guides and two other members of the Cell forestry Unit of the Doumaintang Council

10. Any other comments?

We are happy and grateful to The Rufford Foundation for supporting this vital project for species conservation. Despite the difficulties due to the Covid-19 pandemic, we are comforted to have been able to complete and achieve the objectives of this project, even if there is still more to do. Indeed, the work of results vulgarisation has yet to be completed and hoping to share with the Rufford the scientific publications resulting from the project very soon. We thank The Rufford Foundation for the support and hope to continue to promote conservation in this community where the people and the administration are willing to conserve and sustainably manage their forest resources with the support of The Rufford Foundation.

Scientifics production from the project in process
Currently, the finalising stage of four scientific papers to be probably submitted by next month to peer review journal is in progress.

Master's student trained
Miss SAKOU Wandji Rozane, 2022. «Services écosystémiques et bien être associes □ires de la forêt communale de Doumaintang (Est-Cameroun) par les populations riveraines». Master of Science, Plant Biology Department, Faculty of Science, University of Yaoundé I. In progress

Fig. 1. Images of meeting between the surveys team and some Chief's villages and their notable when they were available.

Fig. 2. Images of some semi-structured interviews with populations

Fig. 3. Images of some focus groups with populations.

Fig.4 Training team of socio-economic surveys

Fig. 5. Botanical inventory in Doumaintang Communal Forest

Fig. 7. Images of workshop done at Doumaintang municipality Conference room