

Final Evaluation Report

Your Details	
Full Name	ZAUSA Diorne Marie-Aurore Koko
Project Title	Distribution and Conservation Status of medium and large mammals in residual forests of South-Eastern region of Côte d'Ivoire
Application ID	29895-1
Date of this Report	May 27, 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
A quasi-exhaustive inventory of mammals in the area with the support of images				Between 13 and 29 camera traps were installed simultaneously, depending on the study site. They were deployed for 6 weeks per study site (the Soumié Classified Forest (CF), Comoé 1 CF, N'ganda CF and Ehotile Islands National Park (EINP)). In total, 13,706 photos of fauna were taken, including 5,996 photos of medium and large mammals, between December 2020 and July 2021. In total, we found 20 species of medium and large mammals in the four sites by combining three methods. 14 species were clearly identified with camera traps, while the linear transect method allowed to identify nine species and the RECCE method allowed to find 12 species.
Improvement of agent's capacities and knowledge of sites managers on mammals				Two agents for the OIPR and two for the SODEFOR were sensitised and introduced to camera trapping. Eight agents of the SODEFOR participated in a presentation of the species identified with the camera traps and learned more about the IUCN Red List and the CITES convention. The OIPR cancelled the presentation at the last second.
Diffusion of results in riparian villages				The presentation of the results was carried out in 23 villages and at least 124 flyers were distributed in 25 villages, 11 flyers in six sous-prefectures and two prefectures and 11 flyers were distributed to SODEFOR and OIPR.

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

a). The first mammal inventories were obtained in the three classified forests studied. This includes the identification of 14 species of medium and large mammals among the four study sites, including the discovery of the white-bellied pangolin, *Phataginus tricuspis* (Rafinesque, 1821), in two forests and the presence of the bongo,

Tragelaphus eurycerus (Ogilby, 1837), in the Comoé 1 Classified Forest, a species that had not been observed by the local population before.

b). SODEFOR and OIPR officers and rangers have a better knowledge about the medium and large mammals that can be found in their protected sites, which allows them to better assess the state of conservation of these sites and the efforts that still need to be made to ensure that their site continues to have certain species. They know about new technologies, such as camera traps, which can help them improve their ecological monitoring. They know more about international conservation status such as the IUCN Red List and CITES, which make them more aware of the importance of their work to maintain the last remaining species in the region and better direct their awareness raising towards the local population.

c). More than 222 people from 25 different villages, six sub-prefectures and two prefectures in the region learned about the medium and large mammals still present in their riparian forest and their conservation status. People were happy that I came back to present them with images of animals that some of them had never seen, or that others thought had disappeared. These people are now aware of the decline of the biodiversity in their region and want actions to be taken to increase the monitoring of these sites and for the species they saw in the past to reappear.

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

The first unforeseen difficulty encountered was the delay for receiving camera traps from abroad, which lasted 6 months due to the restrictions put in place during the COVID-19 pandemic which slowed down the shipping procedures. To avoid further delays, we started to install camera traps borrowed from several colleagues while waiting for the ordered devices. Some of the camera traps that had been loaned were very old and could not take exploitable photos. So, we had to repeat the session with the new camera traps.

Another difficulty encountered was the time spent to set up camera traps on the study sites the first time. It took more time and effort than expected to reach the installation points as the vegetation is difficult to cross in some habitats and it takes time to install the camera traps properly. Over time, repeating the same steps allowed us to go faster with the installation. We also had to borrow a tablet to get visual feedback from the camera trap before leaving it.

As the boundaries of the classified forest are not well materialised, some of the planned installation points could not be considered because they were on other people's land or too close to a camp in the forest.

Sometimes the agents who were supposed to accompany us on motorbikes were not available, so we used public transport and redefined the routes to reach the installation sites on foot.

Some camera traps placed in the savannahs of the N'ganda classified forest only worked for 2 to 3 days instead of 20 days as planned. This may be due to the

movement of the grass and the impact of the sun. We tried to change some of the settings including sensitivity and the interval time between pictures.

Two of the camera traps were no longer working with only a white screen, so we could not set them up. We reported this to the supplier who decided to ship us replacement devices, but we had already finished collecting data when the new devices arrived.

We were not able to install camera traps on the sacred Bosson Assoum Island in the Ehotilé Island National Park (EINP) because the community wants to maintain the sacredness of the site and prevent outsiders from entering it.

Someone tried to steal one of the camera traps. Thanks to the Python cable, he was unable to retrieve the device. But the camera trap was tilted and could not take any more pictures for the remaining days.

Scheduling the return visits to the villages was also difficult as we had little time to visit 20 villages. We were still able to visit the other villages and leave flyers in the sub-prefectures for the villages that were not available or willing to receive us.

One of the last difficulties was the organisation of the presentation of the results to the managers of the study sites, and in particular with agents of the "Office Ivoirien des Parcs et Réserves (OIPR)" (Ivorian Office of Parks and Reserves), who were unavailable at the last minute.

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

During the project, we asked local youths to accompany us into the forests to set the camera traps with the agreement of the chiefdom. Some of them were trained and made aware of the use of the camera traps. The riparian villages which were already aware of the study, were informed before the camera traps were placed. The local youths and leaders helped me to find motorbikes or places to sleep in the village. They were really helpful and motivated. Before the end of the project, we went to 23 villages along the four study sites to present the results of the project with posters presenting the history of the forest, the surface area, the prohibitions, and the worldwide recognition (Ramsar sites), then we explained the conservation status with the IUCN Red List, the CITES convention and the national laws. Then, we presented the species of medium and large mammals that were photographed and what their names are in French, in the local language and the scientific names, as well as their conservation status at world level and the presumed status at national level. We concluded by presenting three main results from an individual survey that was carried out between 2019 and 2020. These results indicated that the population was feeling this decline in species diversity and abundance. The chiefs and leaders of each village helped me to organise it and were able to gather their notables, youth, and women leaders. The local communities really appreciated this feedback and they encouraged me to pursue the project. We left them flyers with photos of the medium and large mammals so that they could also raise awareness among other people in the village and among school kids. Now, they know which

species are still present and that many seem to have disappeared and that it is necessary to continue to protect these sites. They want more conservation actions to be carried out to protect their forest and want forest managers to involve them more often in conservation activities.

5. Are there any plans to continue this work?

Yes, I want to continue the work in these study sites. Now, a master student is going to study small carnivores in the Ehotilé Islands National Park, and I am lending her some camera traps that I obtained thanks to the Rufford Foundation. We hope that other species can be observed to complete the inventory.

The identification of certain species such as white-bellied pangolin (EN), Lowe's monkey (VU), bongo (NT), and African palm civet (LC) in certain forests makes us want to do more investigation and raise awareness among the local populations so that these species continue to live in these areas. We have not been able to observe the presence of primates on certain sites, either with camera traps or linear transects, although local communities tell us that they sometimes hear them. Therefore, we would like to install camera traps in the canopy to have a better chance of observing them and knowing which species are still present. We want to use a new technology, the WPSwatch, which uses camera traps that transmit photos taken in the forest directly by email. This would make it easier to process the images, locate people who are in violation and make the installation of ordinary cameras traps more effective.

Another technology will be a platform or an application for citizen participation with an application that could allow local communities, rangers, and tourists to give information on animals or illegal activities that are taking place around and inside the forest and would allow patrols to be better directed.

In addition, there are other classified forests in the region where the wildlife situation is unknown but where anthropogenic pressures are very strong. We would like to explore them to make a proposal for the global development of the landscape that considers the preservation of all these sites. This will allow us to think about possible ecological corridors between all these sites and to raise awareness among farmers and local populations to keep or plant trees and hedges, so animals can circulate between these areas. The training and awareness raising of agents must continue so that they can draw up development plans that take wildlife conservation into account. Concrete actions are also needed to raise the awareness of economic operators (e.g., hotels) in villages close to the EINP because the mangroves are disappearing too quickly.

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

The results have already been shared with the local communities and with the SODEFOR agents. We still have some data to analyse, but we also plan to produce at least two scientific publications that will contain the data collected through this project. The first will soon be submitted to an international scientific journal. Those results will also be part of my dissertation and will be available to universities and

research institutes. In addition, oral communications and scientific seminars will be organised at the Centre Suisse de Recherches Scientifiques en Côte d'Ivoire (CSRS) and with institutions responsible of the management of the protected sites (SODEFOR and OIPR). A summary document will be made available to local decision makers (e.g., prefecture and sub-prefecture) and local non-governmental organisations involved in raising awareness. We would like to present our results at a conference related to our study and share our results on social networks once the scientific publications are validated.

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

The important next steps are firstly, the publication of scientific papers related to this project and my PhD defence. Then, it would be to continue this project by studying arboreal mammal species by placing camera traps in the canopy and to explore other classified forests in the region that are heavily degraded, as well as village forests still present in the region. The local authorities need to be made aware of the problem and more resources need to be provided to strengthen the conservation of these residual forests and the species they contain. Another important step is to improve the cohesion between the riparian villages and the managers of the classified forests and the national park. Thus, future collaboration may be possible and will reinforce the protection of these forests and the local development.

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 used the Rufford Foundation logo on the posters and flyers with the mammal pictures, which we used in the villages for awareness raising. The logo was also used in slides when presentations were made in my research centre. In terms of publicity, every time I talked to someone about my PhD project, I mention The Rufford Foundation and encourage my colleagues to apply for a fund. I also announced the grant on Facebook and to the other funders. I made a post to present one of the update reports on Facebook. Following me, other people submitted and continue to submit proposals for the Rufford Small Grants. At the CSRS, they have made a wall with all the partners and donors who support their project, and the logo of The Rufford Foundation is also present, which allows all the people and institutions who visit the centre to see the logo.

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

Prof Inza Koné is a conservation biologist, Professor at the Laboratory of Zoology and Animal Biology of the Félix Houphouët-Boigny University (UFHB), General Director of the Centre Suisse de Recherches Scientifiques en Côte d'Ivoire (CSRS) and President of the African Primatological Society. He was for the main supervisor of the project with a critical eye on the activities that were carried out. He validated the update reports and contributed to the improvement of the protocol. He is supporting the dissemination of result by contributing to scientific publications and the final thesis.

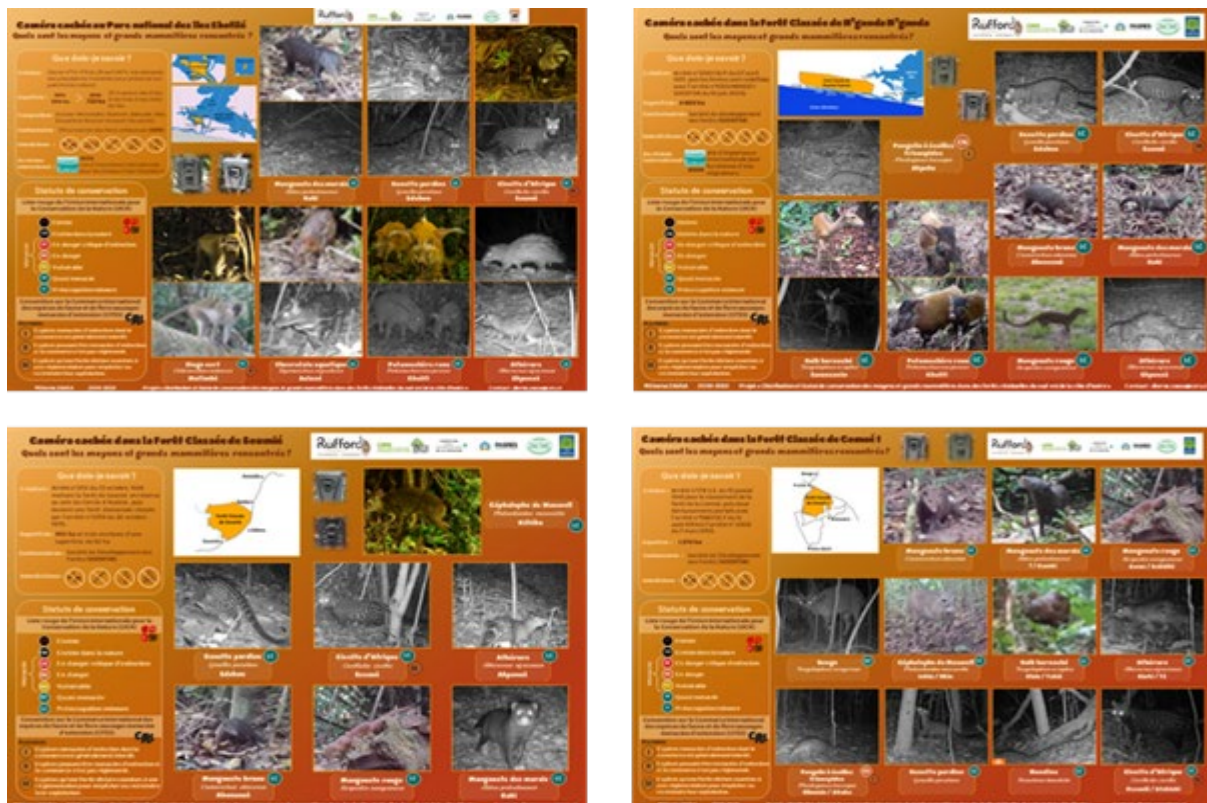
Prof Bertin Kouamé Akpatou, Senior Lecturer at the Laboratory of Zoology and Animal Biology of the UFHB and associated researcher at the CSRS and President of the NGO Action pour la Conservation de la Biodiversité en Côte d'Ivoire (ACB-Côte d'Ivoire). He had a supervisory and support role for the field data collection and for pictures analysis. He helped me in the identification of the species observed and participated in the constant improvement of the protocol. He also validated the update reports.

For the data collection I had the help of OIPR and SODEFOR agents and the support of nearby villagers and students who were trained in wildlife data collection techniques.

10. Any other comments?

I really would like to thank The Rufford Foundation for trusting me to carry out this project and for focusing on a project on neglected sites and species. It was a real opportunity to progress in my thesis and this allowed me to be autonomous and improve my project management skills. I am proud that I was able to achieve my goals and complete the project and I hope that you will trust me again for future projects.

Please find below some photos of the posters that were given to the villages and family photos with villages that really appreciated being able to put a picture on local names and seeing animals that had never been seen before.



Appendix 1: Flyers of the four study sites given to the local communities and authorities



Appendix 2: Family photos after the presentation of the result to the local communities (Villages: Mélékoukro, N'Galwa).



Appendix 3: Family photos after the presentation of the result to the local communities. (Villages: Assomlan, Assouindé, Ebotiam, Babianéha, Mandjian, Essankro, Etuessika).



Appendix 4: Family photos after the presentation of the result to the local communities. (Villages: Assinie-France, Assinie-Sagbadou, Assinie-Mafia, Egbei, Kimoukro, Ono SALCI, 4 croix).



Appendix 5: Family photos after the presentation of the result to the local communities. (Villages: Adaou, Ayebo, Soumié, Assouba, M'Bratty, Akounougbe, Etuéboué).