

Final Evaluation Report

Your Details	
Full Name	David Nibishaka
Project Title	Promoting the Conservation of Urban Dwelling Bats and their Roosting Habitats in the Southern Province of Rwanda through Community Outreach and Research
Application ID	35582-1
Date of this Report	15-05-2023

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
Assessing public knowledge and perceptions about bats in urban areas of Southern Province of Rwanda.				This objective was fully achieved, and the results indicated that the community knows the bats as a nuisance animal due to the bad publicity from the news and other background about bats history that bats are the sources of various viruses causing the current outbreaks like COVID 19, etc. However, they are not aware about the importance of the bats in the ecosystem and biodiversity like to be a good seed spreaders, pollinators and insect /vectors of diseases control
Identifying and mapping of bat colonies in the project sites.				Using mapping tools (e.g., GPS), were able to identify and map all urban roosting habitats localised in our project sites and these maps will be shared with local leaders in our project sites and we intend to use them in developing site specific interventions for bat protection in the Southern Province. We also identified several species of bats in our project sites.
Counting bats to estimate their population sizes in the project sites.				Bats were identified and counted in our various project sites. The counting exercise was undertaken by the PI assisted by research assistants using visual counting of emerging bats. We used this method to avoid disturbance of bats in their different roosting sites.

<p>Conduct education and awareness about bats among urban residents to enhance public understanding of bats and their ecological importance.</p>			<p>We conducted several awareness and education campaigns to promote bats and their importance among the urban dwellers in the southern province. However, in the beginning it was a big challenge because of COVID 19 restrictions. We still need to continue raising awareness on the bats and their ecological importance because it was evident from the awareness campaigns that bats have for a long time received negative publicity among urban residents which has in turn contributed to animosity towards bats. In addition, we need to mobilise bat conservation volunteers in future who will help us to better sensitise urban residents on good practice for coexistence with bats.</p>
<p>Form and train bat conservation champions in our project sites.</p>			<p>Bat conservation champions have been formed and trained about how to live in harmony with bats in the area and on the importance of the bats in ecosystem. Teaching material have been given to them so that they will become good ambassadors of future bats conservation in the society.</p>
<p>Organize radio talks meant to improve knowledge on bats, their ecological importance, and their protection.</p>			<p>The PI was hosted at three different radio stations to talk about bats, bat conservation and the misconceptions about bats such as the misinformation relating bats to several outbreaks/diseases including COVID19.</p>

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

- a) This project helped us to generate a proper understanding of the knowledge and perceptions of urban residents towards bats. This information is currently helping us in designing sustainable strategies for bat protection in urban areas where our project sites are located. The same information will be used by other bat conservationists intending to protect bats in urban environments across the country.
- b) As a result of public education and awareness activities which underscored the ecological and environmental benefits of bats, urban residents and local leaders in the project sites understood the importance of bats and promised to change the negative attitudes, perceptions and behaviour they exhibited towards bats in their localities for the benefit of bats.

- c) Locating and mapping of different bat colonies in the project sites. This is important because understanding all the bat colonies in our project sites will help us to design site specific bat protection measures.

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

- COVID 19 Lockdowns hindered some of our project activities and interfered with our original timeline. For example, we had very few people that used to attend our meetings and outreach events because of the SOPs allowed a limited number of people that could attend such events. This to some extent also interfered with our budget because we ended up conducting many meetings and outreach events which we had not planned for.
- Inviting project team members for radio talks at night was another challenge we had not expected. All radio talks took place at night but on the other hand it was beneficial because we had a wider audience listening. This was evidenced by the number of listeners that called to ask questions regarding bats and their importance.
- Conducting several activities as planned. This is attributed to various restriction that were imposed and later lifted and disrupted our original plan and thus the delay in completing most of the project activities and reporting on time.

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

The local people (urban residents) were part and parcel of this project from the beginning and were involved at every stage of the project implementation. For example, we hired local people as research assistants to gather information about the knowledge and perceptions about bats in the project sites. These assistants benefitted from the salaries they received the knowledge as well they gained about bats and their importance. Additionally, due to public misconception about bats, the local people (urban residents) showed up in big numbers to attend outreach activities in the three project sites. The curious local communities were eager to understand bats and their ecological importance and were able to ask several questions regarding bats. For example, they wanted to fully understand if bats are carriers of diseases and if they are the current source of COVID 19. Urban residents including local leaders were also eager to understand if bats suck blood from people as it has always been insinuated. Several questions were posed, and it was evident that after the educational and awareness campaigns that helped us to debunk the myths about bats, urban residents were convinced that bats are more important than they thought.

5. Are there any plans to continue this work?

We wish to continue this work and take it to the next level. Our next efforts will be to continue monitoring bats at our project sites, equip bat conservation champions

with the necessary monitoring tools and work with the leadership to establish bat protection guidelines that will be shared with relevant agencies operating in the Southern Province.

Continuing the bats species identification and bats counting in specific roosting habitats in the project area

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

Through presentations, this work has already been shared with RDB and other conservation stakeholders in the country. We are looking at upcoming conservation conferences where the results of this work could be shared. I have also a plan to share this to a One Health Commission and other One Health platforms. The results will also be shared to the IUCN and at Bat Conservation International

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

- Continuing with monitoring activities of bats in our project areas sampling for both rectal and ectoparasites biological samples for the laboratories for diseases surveillance and control.
- Organise meetings and workshops with the relevant stakeholders that will culminate into designing long term urban bats protections plan.
- Continue mobilising urban residents and local leaders to support our bat protection efforts in the southern province and creating livelihoods for our bat conservation champions helping us with bat protection and awareness in our project sites.

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 used the Rufford Foundation Logo during the conservation workshops and meeting prepared by Rwanda Development Boards and Other Partners

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

David Nibishaka: Project leader

Damien Habinshuti: Field assistant

Adrien Manishimwe

10. Any other comments?

I would like to thank The Rufford Foundation for this grant and the ground-breaking work to support various projects of conservation.

I also want to thank the member of team who worked tirelessly to make the project successful.

Assessing public knowledge and perceptions about bats in urban areas of Southern Province of Rwanda.

The results of the survey indicated that:

I. Knowledge about bats

All the respondents that were interviewed had seen bats and 96% reported to have bats roosting around their households with 91% claiming to have bats roosting within a distance of 0-5 kilometres from their households. Most respondents (58%) reported fruits, insects and plants as the food for bats while 42% of the respondents claimed not to know what bats feed on.

II. Benefits of bats to humans

Most respondents (63%) reported that bats have no benefits to humans, but few respondents (37%) claimed that bats are beneficial to humans, highlighting different benefits of bat, including being source of country's economy through tourist attraction due to their uniqueness. Other benefits mentioned were that bat being insectivores, they eat insects like mosquitoes that are harmful to humans and also assist in pollination. They also said that bat faecal materials are used as fertilizer. Lastly, bats were reported as source of traditional medicines.

III. People's Perceptions towards bats

Respondents (N=313) were asked what comes into their minds when they see bats and 49% said nothing at all, 17% said that they are attractive and they appreciate them, 8.6% said they are dangerous animals, and they get scared whenever they see them. Others mentioned that bats are just like other animals, are birds that carry diseases, are birds that look like mice, are birds that have teeth to mention but a few.

IV. Traditional beliefs on bats

Bats were mainly considered as a source of traditional medicine (23.4%). Other beliefs about bats included that bats are sources of diseases, and that they are used for witchcraft activities especially as poison and causing misfortune to people. When respondents were asked if viruses found in bats are a potential threat to the health of the population, 54% said that the virus carried by bats were not a threat to human health whereas 46% agree that the viruses were a potential threat to human health. Out of the 143 respondents that agreed that viruses carried by bats were a potential threat to human health, 92% said that bats are source of diseases like Ebola, influenza, epilepsy and flu.

V. Negative effects of bats to humans

Respondents were asked if they are aware of any negative effects of bats to humans and 53% were aware of some negative effects whereas 47% were not aware of any negative effects. Out of the 165 respondents that were aware of any negative effects of bats to humans, 46% reported that bats have viruses that cause diseases to humans, and 16% reported that bats make a lot of noise that disturbs people.

VI. Risk Associated with bats

Most of the respondents (85%) reported to have no bats in their houses. Also 3% of respondents reported to have experienced bat bites/scratches and immediately rushed to the hospital for treatment. Four percent of the respondents reported to have been defecated on by bats and they quickly washed them off with water and soap, though some respondents reported to have ignored it. Regarding handling of bats, some respondents (29%) claimed to have handled bats without any form of protection.

VII. Associated factors with having bats in the house

Out of 313 participants interviewed, 10% of the respondents who had ever been bitten/scratched reported to have bats in the house. 7% of the respondents who had ever been defecated on by bats had bats in the house. Also 14% of respondents who had bats in their houses claimed not to use any protection in handling bats. However, the association above were all not statistically significant at 5% level of significance, hence there is no association between having bats in the house and being bitten/scratched, defecated on and use of protection in handling bats.



Fig 1: Conduct education and awareness about bats among urban residents to enhance public understanding of bats and their ecological importance.



Fig 2: Training on bat conservation champions in our project sites.



Fig 3: Identification and counting of bat colonies in the project sites.



