

Final Evaluation Report

Your Details	
Full Name	R Shakinah M Ravindran
Project Title	Anticoagulant rodenticide and pesticide exposure to Southeast Asian barn owls (<i>Tyto javanica javanica</i>)
Application ID	35865-1
Date of this Report	20/5/2024

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
Barn owl sample collection			X	Samples were collected non-invasively from barn owls (pellets, feathers, tissue from dead owls). We also expanded this objective and collected samples from other non-target species. Tissue samples were collected opportunistically from found roadkill.
Anticoagulant rodenticide and pesticide residue detection		X		Samples have been collected but we are in the process of applying for more funding to run the toxicology tests
Interview with community			X	The knowledge, attitude and perception (KAP) of Malaysians were analysed via online survey forms. We collected 652 respondents and are currently analysing the results and preparing to publish our findings.

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

a). We collected samples from the main study species (barn owls) and tissue samples from other non-target species (e.g., civets) that are at risk for rodenticide poisoning. Other than a few studies regarding barn owls, there is yet to be a study on the impact of rodenticide exposure to non-target species in Southeast Asia, hence the results from the pesticide residue analysis could provide critical insight to non-targets at risk of rodenticide poisoning.

b). We assessed the knowledge, perception and attitude of Malaysians towards barn owls to better understand the general perception of Malaysians to the species. The results of this could provide information needed for targeted education and awareness campaigns to ensure community engagement for conservation of the species.

c). We also conducted several education and awareness campaigns throughout the study period. The campaigns were targeted towards increasing the knowledge of the community towards the effects of rodenticide poisoning to non-target species, namely barn owls, as well as increasing awareness on the vital role played by barn owls as a biological control agent.

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

One major complication was timing. We had to extend sampling at one site to ensure enough owl samples could be collected and so the projected timeline for sample collection at the second site was consequently extended as well. Another complication was the need to pay for accommodation at one site (our arrangement with the collaborator initially indicated free accommodation but apparently circumstances changed), hence we had to spend funding from the grant to cover this expense.

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

Local communities were directly engaged to assess their knowledge, perception and attitude towards barn owls via online survey forms. This was done to gain insight into the general perceptions of Malaysian barn owls, such as whether they are perceived as helpful biological control agents or bad omens. The results from this can form the basis for targeted future education and awareness campaigns.

We also carried out several education and awareness campaigns to educate people living with barn owls on the role of the species as a biological control agent and to raise awareness of how rodenticide use impacted barn owls.

5. Are there any plans to continue this work?

Yes, we are planning to run the pesticide and rodenticide residue analysis on the collected samples once more funding has been secured.

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

We are planning to publish our findings on the perceptions of Malaysians towards barn owls in relevant journals, for now data is being analysed. We will also publish the results on the pesticide residue present in barn owls and other non-target species once the analysis has been completed.

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

This study has shown that in general, Malaysians are not aware of the effects of rodenticides towards non-target species. Following that, our next steps would involve increasing public knowledge on this, as well as conducting more studies on pesticide residue in non-target species in various landscapes (not just in an agricultural context as was done in this study).

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, the logo was used during our education and awareness campaigns. We also intend to use the logo when we attend future conferences where we plan to present the findings of this study.

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

Assos. Prof. Dr Hasber Salim, who is the head of the Barn Owl and Rodent Research Group (BORG) of Universiti Sains Malaysia, shouldered the role as primary advisor and his experience in the field with rodenticide and pesticide use in oil palm plantations were valuable to the project.

Dr Paula Lidia Enrique Rocha from El Colegio de la Frontera Sur (ECOSUR), played the role of co-supervisory advisor. Her knowledge on barn owl ecology greatly assisted in ensuring inclusive sample collection from owls. Dr Paula has also had experience studying the perception of local communities towards barn owls and how this can affect conservation efforts of the species.

Another member of the team was Dr Cik Mohd Rizuan Zainal Abidin, who works with the FGV Research and Development Department. Dr Cik Mohd Rizuan has long worked with barn owls in oil palm plantations and has years of experience on rodenticide and pesticide use in oil palm plantations, and greatly advised on these aspects of the study.

BORG researchers were also of immense help during field sampling and data collection, especially Syafiq Zaluddin and Ariff Azlan Alymann.

10. Any other comments?

None, other than a heartfelt thank you to The Rufford Foundation for awarding us this grant.