

Final Evaluation Report

Your Details	
Full Name	Ravinder Kaur
Project Title	The conservation of endangered hornbills in Kenyir Malaysia
Application ID	37966-B
Date of this Report	27/09/2023

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
Objective 1: Introduce artificial nest boxes into Peninsula Malaysia from Borneo.				The climbing experts, the HUTAN team, flew in from Sabah, Borneo to Peninsula with two artificial boxes and managed to assist our team in setting up the two nest boxes in Terengganu.
Objective 2: Create awareness about the hornbills and their importance in Kampung Basung, Terengganu, Peninsula Malaysia.				Many governments and NGOs came together for this event. Approximately 300 local people were reached through the talks.
Objective 3: Engage local nest guardians to locate natural nests of hornbills; particularly the species listed as critically endangered and vulnerable hornbills.				We managed to find three men, Azie, Alan and Jai who have shown great commitment and interest in the project. They have helped our team in the forest track down nesting hornbills for over a year. They are from the Batek tribe.
Objective 4: Continue adding plants (hornbill preferred food) to the established plant nursery within the local village.				The plant nursery is growing.

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

- a) Two artificial nests have been set up and the birds are showing interest by visiting the nests.
- b) The awareness campaign was carried out successfully and 300 attended and participated in the activities. It was also jointly carried out with other prominent government agencies and NGOs; PANTHERA, Nature Based Solutions, Wildlife Department Terengganu and Terengganu State Parks.
- c) Nest guardians identified and relationship between them and our team has grown stronger over the months.



HUTAN-KOCP NGO Ahmad Sapie scales the tree to install the nest boxes. © Sanjitpaal Singh Education Director of Gaia.

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

Setting up artificial nests on people's land and their trees can be very challenging. It takes a lot of discussions prior to the activity. Miscommunications can happen. There were many rounds of consultations needed and a few small gestures needed such as t-shirts were given as a token of appreciation for those that allowed us access to the trees.

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

They were happy their village was selected for this project, putting them on the map and helping them with their plans to develop ecotourism. They were interviewed by the local press. The nest guardians from Kuala Koh were employed for the forest excursions. They benefitted financially when we hired the locals either as guides or cooks (catering).

5. Are there any plans to continue this work?

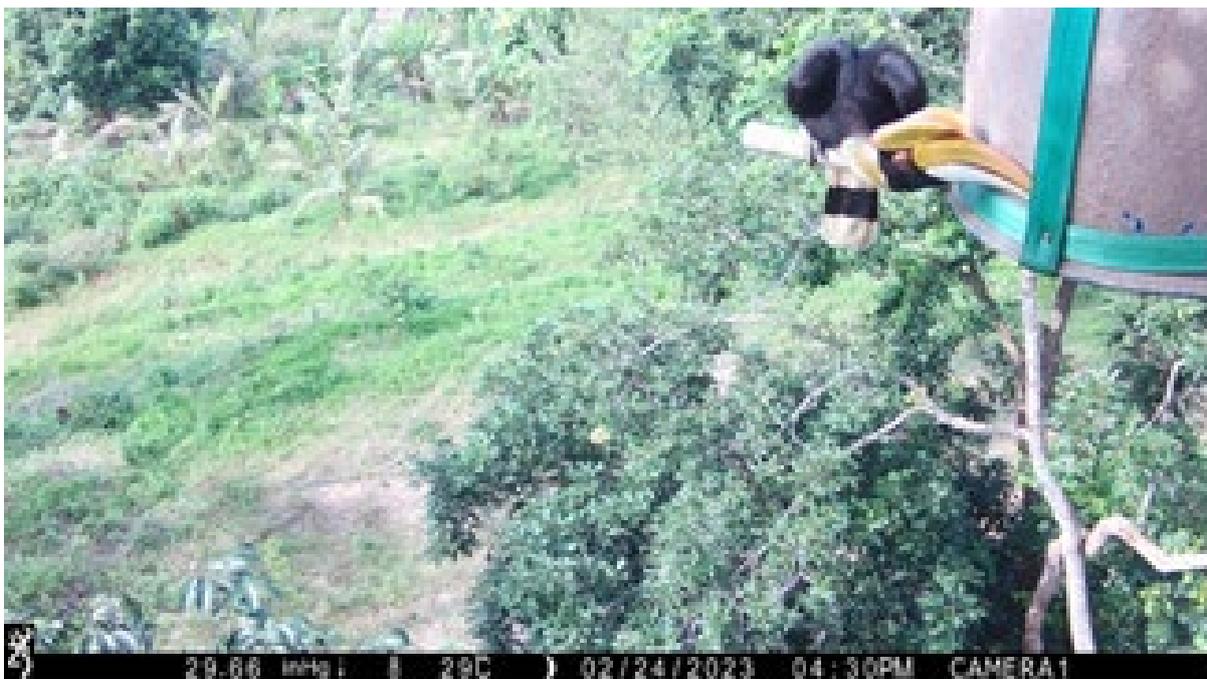
Yes, we will keep checking on these two nest boxes as they are being monitored by a camera trap. The camera trap will require frequent battery changes and the nest box will require maintenance.

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

By sharing the camera trap footages obtained at the nest boxes in social media.



Two camera trap images that showed the target hornbill, showing interest in the artificial nest box after they were set up in Terengganu. The left images show a female Great hornbill and the right, a male. They are our target species for the artificial nests.



The left image shows a female Great hornbill on a perch, inspecting the webbing on the nest box.

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

The need to train the team to become expert tree climbers and to continue putting up nest boxes with camera traps and restoring tree cavities. Hornbills need tree cavities to nest in and our forests are lacking this, due to historical logging. They are unable to form these cavities themselves. We need to provide nesting opportunities for them.

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, please see poster produced for dissemination during the outreach campaign. Appendix 3.

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

Sanjitpaal Singh (photographer and project coordinator), Ravinder Kaur (scientific direction and report/proposal writing), **Zikry Adib Kurnia** (on ground staff to conduct long term monitoring and consultations with local people). **Nadia Kamarulzaman** (coordinated the Basung campaign). **Helson Hassan, Azmi Bin Ungas, Firdaus Aminin** and **Hemaharshni Nagarajan**, the field team that is minding the plant nursery and always searching for hornbill nests and their preferred food plants.

10. Any other comments?

Thank you for granting us this fund.

Appendix 1: Photos of the project



Basung village awareness and outreach campaign. The Wildlife Department Officer giving a talk on the law that protects wildlife (left). Nature Based Solution's Director Sri gave a talk about what their organisation does in terms of research and conservation with the state park and it's natural resources.



Ravin giving a talk on hornbills while the kids colour in the hornbill colouring book.



The Basung village awareness and outreach campaign. The campaign was conducted with a colouring competition of hornbills (*enggang*) for kids, with prizes available for the best entries.



Small plant nursery established in Sabah with cooperation with the HUTAN team.

Appendix 2: List of hornbill preferred food plants collected.

Source	Species	Common name	Current total
Wildling	(unknown)	Bawang-bawang	60
	<i>Aglaia sp</i>	Lantupak	48
	<i>Azadirachta excelsa</i>	Limpaga	3
	<i>Barringtonia ashtonii</i>	Tampalang	38
	<i>Bridelia stipularis</i>	Balatotan	22
	<i>Cananga odorata</i>	Bunga Gadong	84
	<i>Dacryodes laxa</i>	Kedondong Bulu	12
	<i>Dracontomelon sp.</i>	Sengkuang	65
	<i>Koordersiodendron pinnatum</i>	Runggu	22
	<i>Litsea sp.</i>	Medang	85
	<i>Rauvolfia sumatrana</i>	Jelutong Tipu	5
	Unknown species 1		22
	Unknown species 2		14
Unknown species 3		17	
Cutting	<i>Ficus stricta</i>		11
Total			508



The nest guardians (indigenous people from Kuala Koh), Azie, Alan and Jai in their "Hornbill Guardian" t-shirts. Zikry Adib is the expedition leader, in a blue shirt.



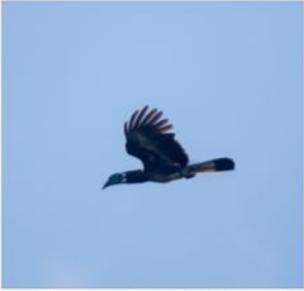
The nest guardians in the forest, looking for hornbill nests and taking the GPS locations.

Appendix 3 – Translated poster on hornbills with Rufford Foundation logo.

Hornbills of Terengganu *Enggang-enggang Terengganu*



Helmeted hornbill / Enggang Tebang Mentua (*Rhinoplax vigil*)



Bushy-crested hornbill / Enggang belukar (*Anornithus galentis*)



Wrinkled hornbill / Enggang Berkedut (*Rhabdotormhinus corrugatus*)



Great hornbill / Enggang Papan (*Buceros bicornis*)



Black hornbill / Enggang Hitam (*Anthracoeros malayanus*)



Oriental pied hornbill / Enggang Kelingking (*Anthracoeros albirostris*)



Wreathed hornbill / Enggang Gunung (*Rhyticeros undulatus*)



Rhinoceros hornbill / Enggang Badak (*Buceros rhinoceros*)



White-crowned hornbill / Enggang Bulu (*Berenicomis comatus*)

The nine species occur throughout Terengganu, Peninsular Malaysia and are listed in the IUCN Red List as;

Critically endangered Helmeted hornbill (*Rhinoplax vigil*), endangered Wrinkled hornbill (*Rhabdotormhinus corrugatus*), endangered White-crowned hornbill (*Berenicomis comatus*), vulnerable Rhinoceros hornbill (*Buceros rhinoceros*), vulnerable Black hornbill (*Anthracoeros malayanus*), vulnerable Wreathed hornbill (*Rhyticeros undulatus*), near threatened Bushy-crested hornbill (*Anornithus galentis*), near threatened Great hornbill (*Buceros bicornis*), and least concern species; Oriental Pied hornbill (*Anthracoeros albirostris*).

Hornbills have been regarded as an essential seed disperser because they digest the fleshy parts of the fruits and regurgitate or defecate the seeds throughout the forest unharmed.

Hornbills utilize natural cavities in living trees. They are unable to excavate their own nest cavity. Thus, the reproduction of hornbills is dependent on the availability of suitable nest cavities. Nesting sites are lost during timber extraction and agriculture expansion.

Kesemua sembilan spesies burung enggang yang terdapat di Terengganu, Semenanjung Malaysia telah disenaraikan dalam Red List IUCN sebagai:

Amat Terancam, Enggang Tebang Mentua (*Rhinoplax vigil*); Terancam, Enggang Berkedut (*Rhabdotormhinus corrugatus*); Terancam, Enggang Bulu (*Berenicomis comatus*); Terdedah Kepada Ancaman, Enggang Badak (*Buceros rhinoceros*); Enggang Hitam (*Anthracoeros malayanus*); Terdedah Kepada Ancaman, Enggang Gunung (*Rhyticeros undulatus*); Hampir Terancam, Enggang belukar (*Anornithus galentis*); Enggang Papan (*Buceros bicornis*); dan Enggang Kelingking (*Anthracoeros albirostris*).

Burung Enggang memainkan peranan yang penting sebagai penyebar biji benih pokok-pokok hutan melalui tabiat pemakanan mereka yang agak unik, iaitu dengan

mengeluarkan semula biji benih pokok dalam keadaan tidak rosak selepas memakan dan mencernakan bahagian isi buah tersebut. Biji benih yang dikeluarkan semula tersebut pula akan jatuh diserata hutan dan membantu dalam pembiakan pokok-pokok hutan.

Burung Enggang juga menggunakan rongga-rongga yang didapati di batang-batang pokok hidup sebagai sarang untuk penetasan dan penjagaan anak. Walau bagaimanapun, burung enggang tidak berupaya untuk menggali rongga-rongga sarang mereka ini sendiri dan terpaksa bergantung kepada ketersediaan rongga-rongga pokok semulajadi yang sesuai. Oleh hal ini, penebangan pokok-pokok hutan untuk pengkestrakan kayu balak dan aktiviti pertanian akan mengurangkan lokasi-lokasi penting pembiakan burung enggang.

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