Final Evaluation Report

Your Details	
Full Name	Jessica Barman
Project Title	Assessment of the Conservation Status of Seahorses of Andaman and Nicobar Islands through Underwater Surveys and Local Ecological Knowledge (LEK)
Application ID	39596-1
Date of this Report	26-12-2024

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
Report the species distribution and habitat pattern of seahorses in Andaman and Nicobar and assess their conservation status from these islands through underwater surveys (snorkeling/ SCUBA Diving).			■	This objective has been fully achieved. The distribution of seahorse species has been recorded, with a total of 28 seahorse sighting locations. Among the three species, *Hippocampus kuda* is reported to be the most commonly sighted species, followed by *Hippocampus histrix*. However, sightings of species that have not been previously reported are possible. The habitat pattern was also recorded with a total of 7 different types of habitats recorded, namely Rocky, Coral reefs, Sandy, Mangroves, Seagrass, Sponge, Artificial/manmade substrate. The fishers responded that the rocky habitats were the most commonly preferred habitat for seahorses, followed by mangroves, while the sandy patches were the most common habitat where SCUBA divers sighted them. They would also occasionally see seahorses being anchored to an artificial substratum or rubble.
Estimation of the number of seahorses landed as by-catch in fish landing centres			■	This objective has also been fully achieved. The highest number of fishers (32), suggested 5-10 seahorse individuals being landed per year. Around 16 fishers mentioned the number of seahorses landed is less than 5 individuals, and only 5 fishers reported more than 20 samples being caught as bycatches
Local Ecological Knowledge (LEK) by collecting data			■	We have gathered inputs from a total of 110 respondents (70 fishers and 40 scuba divers). The locations collected from

from fishermen and SCUBA divers on aggregation sites of seahorses and formulate a species distribution map				fishers and SCUBA divers have been compiled and used to develop a distribution map.
Awareness programs and camps through questionnaire surveys and seminars for creating awareness on the need for conservation of seahorses to the local fishermen community.				Posters disseminating awareness on seahorses have been published and spread through an online e-magazine platform called Not Just Soup (October issue). Raincoats and caps with the messages "Seahorses are Special" have been developed and will soon be distributed to local communities during outreach programs organized by ANET and Dakshin Foundation.
Provide decision-making organizations and other important stakeholders with our collected data for their use in implementing adequate conservation-based programs.				The data that has been collected will be submitted to decision-making organizations to initiate area-based conservation programs.

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

a) Seahorses, when observed in underwater surveys, are mostly seen in secluded barren sandy areas with little other biodiversity around them, suggesting that seahorses probably prefer isolated locations. However, the availability of food in such barren environments is questionable and raises questions about how the seahorses are adapting.

b) Seahorses have been reported to be anchoring on man-made wastes like plastic containers, plastic ropes, aluminium rods, etc and other artificial rubble found on sandy areas

c) Local fishers claim that the seahorse population has drastically decreased over the years, mostly due to trawling.

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

A few unforeseen difficulties that arose were:

1. Since seahorses are a protected species, the local fishers were hesitant to provide any kind of information regarding seahorse sightings, which were tackled slowly and gradually by building their trust.
2. There were a few language barriers. The fishers spoke a language I was not fluent in, and to tackle that problem, I hired a field assistant native to their community so that the fishers would share information in a more comfortable manner.
3. Due to the unpredictable weather conditions in an archipelago, a few far-off islands could not be covered and had to be replaced by locations that were nearer and easier to access.

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

The local communities were key to the project completion since they were the key source of information. The local communities included the fishers and the SCUBA divers, who were involved in data sharing and exchange of information. A window into the local ecological knowledge of seahorses was made possible by the interactions with local communities on the island. Through casual conversations and engagements with nearby communities, we gathered data on seahorses and raised awareness of their ecological vulnerability. They were provided with raincoats and caps as a way of expressing gratitude for being a part of the project.

5. Are there any plans to continue this work?

Yes, I do intend to continue this work and cover the areas that have not been covered, especially since there is a possibility of reporting novel seahorse species that have not been reported before. I plan on applying for the second stage grant since the data that has been collected so far is indeed worthwhile and is in need of in-depth studies.

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

I plan on publishing research articles about my work that will inform the scientific community about the status of seahorses from the Andaman and Nicobar Islands, India. Some information has already been shared in the form of posters and excerpts in e-magazines.

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

The most important next step is sharing the information that has been collected with the general public to raise awareness. Apart from that, an in-depth analysis of species data is crucial, preferably with the use of molecular tools like eDNA.

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 Rufford Foundation logo has been used in the questionnaires, posters, raincoats, and caps.

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

The list of all the members of my team are

1. Jessica Barman: Project Investigator. Conducted surveys, compilation, organization and publication of the data.
2. Dr. Karik Shanker: Lead supervisor and key decision maker. Provided expert advice, direction, and feedback to team members during critical stages of the project.
3. Mohan Banoth: Field Assistant, assisted in field activities, facilitated in forming a network of key informants and strengthened the network
4. Chandana Pusapati: Project Advisor. Monitored project progress and provided help and advice throughout the project.

10. Any other comments?

I am deeply grateful to The Rufford Foundation for granting me this amazing opportunity and for this invaluable experience. This project has not only allowed me to gain profound insights and develop essential skills but has also served as a pivotal stepping stone for my future research in this field. The support and resources provided by the foundation have been instrumental in shaping my passion and commitment to advancing research in this area, and I look forward to building upon this work in the years to come.