

## Final Evaluation Report

Your Details	
<b>Full Name</b>	Omar Sánchez Becerril
<b>Project Title</b>	Assessment of Biological and Socioeconomic Effects in a Fishery Refuge Zone in Yucatan, Mexico
<b>Application ID</b>	40426-1
<b>Date of this Report</b>	09/07/2024

**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
Develop and apply robust indicators to assess the abundance, richness, and diversity of target and associated fish species over time in the Fishery Refuge Zone and adjacent control areas.				We conducted two monitoring sessions in the Fishery Refuge Zone with active local community participation in the planning process. Additionally, a baseline was established, which will be crucial for future monitoring efforts.
Apply inequality metrics, such as the Lorenz curve, the Gini index, and other relevant metrics, to the fishing sector to calculate income and costs, and determine the distribution of net benefits within the community				We carried out economic inequality analyses using official fishing records related to catch and catch value, along with semi-structured interviews. This allowed us to obtain a preliminary analysis of inequality in the fishing sector
Conduct a thorough and relevant analysis of the perception of the socialization process of the Fishing Refugees settlement, examining the social actors' involvement in decision-making processes and evaluating				We conducted a perception analysis among local users regarding the ecological and economic impacts of establishing the Fishery Refuge Zone, as well as the community socialization process through that management strategy, using semi-structured surveys. This substantial information will be complemented by an equity

perceived relationships with social benefits and human well-being				analysis across three dimensions: recognition, procedure, and distribution.
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**2. Describe the three most important outcomes of your project.**

**a).** A document has been created detailing the results of underwater monitoring. This document is a requirement of the fishing authorities in Mexico to renew the Fishery Refuge Zone in Celestun, Yucatan.

**b).** A baseline has been established, which will be crucial for assessing changes in diversity indicators over time, providing essential information for the sustainable management of fishery resources and marine habitat conservation.

**c).** A collaboration network has been formed with government and non-governmental organizations, leveraging future monitoring efforts and facilitating discussion forums to improve decision-making that benefits the community of Celestun in the management of their resources.

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

- An initial challenge was accessing biological data from previous monitoring efforts before the establishment of the Fishery Refuge Zone, as users lacked this information. To address this, a new baseline was established through our own monitoring efforts. This new baseline will provide users with the necessary data to assess changes over time and enhance management of the Fishery Refuge Zone.
- Generating trust with some local stakeholders, particularly government representatives from the fishing sector and non-governmental organizations (NGOs) involved in fisheries, posed an additional challenge. To address this, we implemented proactive engagement strategies, facilitating regular meetings and open dialogues. Additionally, we demonstrated transparency in our monitoring processes and results, emphasizing the importance of collaboration to achieve common goals of conservation and sustainable management of fisheries resources. This helped establish effective trust-based relationships and collaboration with key stakeholders.
- Finding fishermen available for surveys was a significant challenge due to their variable and often extensive work schedules at sea. To address this, we adjusted our survey times, scheduling them early in the morning before they set out to fish or after their return when they are more available. Additionally, we maintained constant and close communication with fishing communities, utilizing effective channels such as local leaders and fishing associations, to coordinate and ensure their active participation in the data collection process.

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

The local communities played a crucial role in our project through the Fishery Refuge Zone management committee, actively participating in the planning, design, and execution of underwater monitoring. Integrating their deep local knowledge not only enhanced the accuracy of our studies but also strengthened their capacity to manage and conserve fisheries resources sustainably. In addition to training in diving techniques, monitoring, and biological data recording, the project facilitated a deeper understanding of the importance of marine biodiversity and proper ecosystem management. We particularly highlight the active involvement of women at all stages of monitoring, promoting gender equity and inclusion in marine conservation initiatives.

#### **5. Are there any plans to continue this work?**

We have plans to continue this work through ongoing underwater monitoring efforts, which are crucial for providing a robust, long-term assessment of the health and dynamics of marine resources in the Fishery Refuge Zone. These monitoring activities will enable us to closely track the evolution of target species populations and their habitats, facilitating early identification of emerging trends and threats that may impact the sustainability of the local marine ecosystem. Effective conservation of these resources is not only vital for marine biodiversity but also for ensuring the economic and social viability of the fishing communities dependent on these resources. The results of the economic inequality analysis revealed preliminary discrepancies concerning the community's economic reality, underscoring the need to adjust methods for a more precise and relevant analysis. This adjustment is critical for understanding how economic and social benefits derived from managing the Fishery Refuge Zone are distributed, ensuring equitable and fair participation of all stakeholders involved. Additionally, we plan to enhance perception analysis and socialization processes in the Fishery Refuge Zone through an equity-focused approach that integrates dimensions of recognition, procedure, and distribution. Improving public perception and understanding of decision-making processes will strengthen the legitimacy and effectiveness of conservation measures implemented. Finally, there is an identified need to conduct a detailed analysis of the governance social network structure among all stakeholders involved in the management and conservation of marine resources. This analysis will not only optimize collaboration and coordination among different entities but also enhance the efficiency and effectiveness of sustainable conservation initiatives in the Fishery Refuge Zone

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

Initially, we are sharing the results of the baseline assessment from underwater monitoring in a document required by Mexican regulatory authorities to support the community in Celestun, Yucatan. Subsequently, these findings will be disseminated through scientific publications and presented at scientific conferences and community outreach sessions. This approach ensures that the findings are accessible to both the local community and the international scientific community, promoting transparency and the positive impact of our marine conservation efforts.

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

We propose establishing participatory workshops and facilitating exchange of experiences as crucial steps to enhance conservation strategies in Celestun, extending beyond the scope of the research project. It is suggested to plan workshops focusing on continuous community training in adaptive management methods and conservation strategies, providing practical tools and promoting exchange of experiences among diverse local stakeholders, including fishermen, academics, and NGO representatives. Furthermore, it is recommended to organize regular debate sessions to deeply analyze the results of previous research and monitoring, discussing their implications for marine conservation and co-creating innovative strategies. These platforms will facilitate integration of diverse perspectives and formulation of collaborative proposals addressing specific conservation challenges in the region. Additionally, we propose actively fostering exchange of experiences with other communities and external experts in marine management, aiming to learn from best practices and adapt them to local needs. This collaboration will strengthen local knowledge and adaptive capacity in response to environmental and social changes. These actions are designed to strengthen local capacities and build a solid, collaborative foundation for effective and sustainable management of marine resources in Celestun, ensuring their long-term viability and promoting community resilience in the face of future challenges.

**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?**

The Rufford Foundation logo was used in survey materials and academic presentations, as well as in posts on our LinkedIn page. Additionally, it was featured on the cover of the document evaluating the results of underwater monitoring submitted to Mexican fisheries authorities. The logo will be used in all evidence resulting from this research project.

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

**Omar Sánchez Becerril (Principal investigator)** - participated in all phases of the project, from proposal design to data collection throughout fieldwork (underwater monitoring, surveys, and interviews), development of educational materials, data analysis, implementation of activities, and report writing.

**Raúl Roberto Villanueva Poot (Thesis Director)** - Participated actively in all stages of the project, with a special focus on detailed analysis of economic inequality metrics.

**Leopoldo Eugenio Palomo Cortés (Thesis Director)** - Participated actively in all stages of the project, with a special focus on analyzing perceptions of the ecological and socioeconomic impacts associated with the establishment of the Fisheries Refuge Zone.

**Alfonso Cuevas Jiménez** - Participated in the analysis of biological diversity indicators from underwater monitoring.

**Noemí Zamora García** - Participated in conducting surveys with groups of fishermen.

**Valeria Galicia Palafox** - Participated in conducting surveys with groups of fishermen.

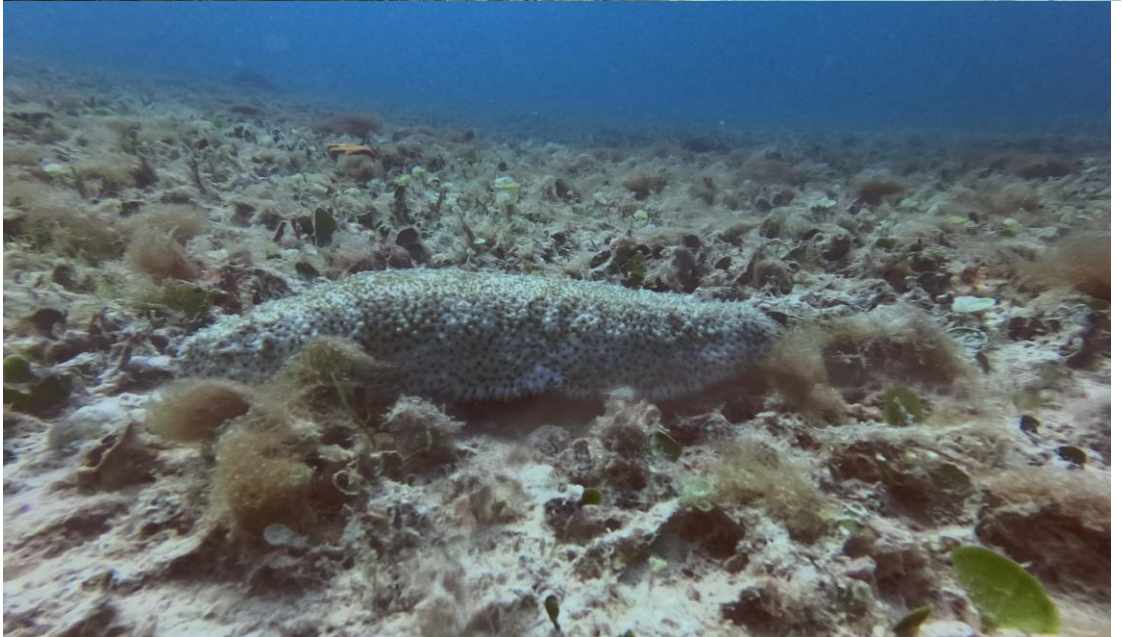
**10. Any other comments?**

I sincerely thank The Rufford Foundation for their invaluable support during the funding process of our Marine Protected Area project. I also extend special thanks to Jane Raymond for her ongoing support and dedication. Through this collaboration, the results obtained will significantly advance marine resource conservation. This support will not only strengthen the integration of the fishing sector but also enhance our capacity to sustainably manage our marine ecosystem. Therefore, I am attaching some photos of our activities during the project.

### 1. Underwater biological monitoring.









**2. Conducting surveys for perception analysis.**





**3. Interviewing local stakeholders to gather data on inequality metrics.**

