

Toledo Institute for Development and Environment
[TIDE]
Grant agreement No. BZ – KfW FIII - 006 - 2024

**Invitation to submit a proposal for a consultant to
develop a research and monitoring plan for the
Sapodilla Cayes Marine Reserve.**

September 2025

TERMS OF REFERENCE

1. Background

The Mesoamerican Reef Fund, Inc. (MAR Fund) and Toledo Institute for Development and Environment (TIDE) have entered into a Grant Agreement under the project: *Enhancing Protection and Conservation of Commercial Species, Coral Reefs, and Fish Spawning Aggregation Sites in Sapodilla Cayes Marine Reserve, Belize* with the objective of increasing protection and biodiversity conservation of commercial species, coral reefs, and legally established FSAs within Sapodilla Caye Marine Reserve (SCMR) including Elbow and Cayman Crown. **KfW has been involved in the conservation of the Mesoamerican Reef on behalf of the German Federal Government since 2010 as part of its cooperation with the Mesoamerican Reef Fund (MAR Fund) to protect the natural resources of the world's largest transboundary coral reef and promote sustainable use. (MAR Fund 2016).**

The Sapodilla Cayes Marine Reserve (SCMR) is the most southern of the marine protected areas in Belize and encapsulates the southernmost tip of the Belize Barrier Reef. It lies in the general area of N16 6 32.9, W88 16 10.4 and is an integral part of the Belize Barrier Reef Reserve System (BBRRS), inscribed as a UNESCO World Heritage Site in 1996.10. (SCMR management plan 2023)

The expanded marine reserve covers an area of 321,623.5 acres (approximately 130,156 ha) and contains fourteen palm-fringed sand or mangrove cayes, fringe reefs, natural lagoons, and key spawning aggregation sites (SPAGs). It is one of the 17 barrier reef regions that compose the Mesoamerican Reef System that is home to more than 65 species of stony coral, 350 species of molluscs and more than 500 species of fish. (SCMR management plan 2023).

With the significant expansion of the Sapodilla Cayes Marine reserve from 38,595 acres to 321,623.5 acres which includes a large portion of the Cayman Crown, a resilient coral reef ecosystem, there is an urgent need for the Toledo Institute for Development and Environment [TIDE], a new co-manager of SCMR to seek significant funding for investment in infrastructure, urgent resource protection, research and monitoring and sustainable management and to provide socio-economic opportunities for primary users to increase management effectiveness of this world heritage site.

Research and Monitoring are important components of effective management of the marine reserve (SCMR). Research helps to determine the status of biodiversity, water quality and habitat conditions. Ongoing monitoring helps managers to track changes in species populations, coral cover, fish stocks, and overall ecosystem health to determine if marine reserve is meeting its conservation objectives and whether any adjustments need to be made. Data from research and monitoring can support adaptive management, making informed management and policy decisions.

Over the years, monitoring and research at the Sapodilla Cayes Marine Reserve has focused on key commercial species, lionfish and turtle monitoring, along with research done through partnerships with other NGOs. With the recent expansion of SCMR, there is an urgent need to expand research and monitoring to the entire marine reserve. By tracking changes over time, managers can assess the effectiveness of protective measures and adapt management strategies as necessary.

Commercial and recreational fisher-folk from southern Belize rely on the use of the Sapodilla Cayes Marine Reserve to generate an income either from fishing commercial species during

season or from sport fishing and tourism. With changing climate, and increased local and transboundary fishing pressure, there is a need for ongoing monitoring and research in the marine reserve to improve overall management effectiveness.

This project will invest in the development of a research and monitoring plan for the Sapodilla Cayes Marine Reserve. The plan will focus on priority research and monitoring activities for the SCMR to assess the effectiveness of conservation measures, detect emerging threats and support evidence-based decision making at the local and national level. It is intended to enhance stakeholder engagement by demonstrating the value and outcomes of marine protection.

2. Objective:

Within three months, develop a comprehensive research and monitoring plan for the Sapodilla Cayes Marine Reserve to establish ecological data, track key indicators of ecosystems health, and inform management decisions, with measurable outcomes reported annually.

3. Consulting activities

The following activities will be carried out as part of the consultancy:

1. Introduction and Background

- Overview of the marine reserve (location, purpose, legal status).
- Justification for the research and monitoring effort as per management plan and discussion with TIDE science team.
- Summary of existing ecological and socio-economic conditions.

2. Objectives

- Along with TIDE and stakeholders, set clear goals of the research and monitoring program, often categorized as:
Ecological (e.g., biodiversity conservation, habitat restoration).
- Consider socio-economic impact (e.g., impact on local livelihoods, tourism).
- Management effectiveness (e.g., compliance, enforcement success).

3. Key Indicators

- Biophysical Indicators: Coral cover, fish biomass, water quality, indicator species etc.
- Socio-economic Indicators: Resource use patterns, income changes, stakeholder perceptions. (Refer to 2023 Socio-Economic Study by Dr. J. Coombs)
- Governance Indicators: enforcement incidents, compliance levels, stakeholder participation.

4. Methodologies

- Reference to nationally recommended sampling methods and survey techniques
- Ecological: Transects, quadrats, visual census, remote sensing.
- Socio-economic: Interviews, surveys, participatory rural appraisals.
- Enforcement Monitoring: Patrol logs, incident reports, various surveillance tools.

5. Monitoring Schedule

- Enforcement Monitoring: Patrol logs, incident reports, various surveillance tools.

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<p>4.5 Monitoring Schedule</p> <ul style="list-style-type: none"> ○ Enforcement Monitoring: Patrol logs, incident reports, various surveillance tools. 												

<ul style="list-style-type: none"> ○ Frequency and timing of data collection (e.g., monthly, quarterly, annually) ○ Seasonal considerations (e.g., breeding or migration periods). 												
<p>4.6 Data Management</p> <ul style="list-style-type: none"> ○ Data storage protocols, formats, and quality control. ○ Tools and software used (e.g., GIS, statistical analysis). ○ Roles and responsibilities for data handling. 												
<p>4.7 Reporting and Communication</p> <ul style="list-style-type: none"> ○ Schedule for reporting (e.g., annual reports, mid-term evaluations). ○ Dissemination methods (e.g., community meetings, policy briefs, scientific publications). ○ Feedback mechanisms for adaptive management. 												
<p>4.8 Roles and Responsibilities</p> <ul style="list-style-type: none"> ○ Roles and responsibilities for data handling. ○ Lead agency or organization. ○ Collaborating partners (e.g., co-management agreement, universities, NGOs, community groups). 												
<p>4.9 Budget and Resources</p> <ul style="list-style-type: none"> ○ Roles of community stakeholders. ○ Estimated costs for staffing, equipment, operations, and dissemination. ○ Potential funding sources. 												

circumstances.

6.8. A track record of publications in peer-reviewed journals, conference presentations, or successful project outcomes to provide evidence of expertise and credibility in the field.

7. Travel and Transportation: All travel and transportation costs must be included in the BID.

8. Payment for the consultancy shall be made upon approval of the deliverables by the Contracting Party and submission of corresponding legal invoices in 3 payments in accordance with the payment schedule below.

Payment No.		Payment %
1	Proposal for development of Research and Monitoring Plan and Inception Report	30%
2	Draft Research and Monitoring Plan, excluding budget and resources	40%
3	Final Research and Monitoring Plan, including budget and resources.	30%
Total		100%

9. Consultancy supervision

The consultant will be supervised by the MAR Fund/TIDE Project Coordinator and TIDE Program Director.

The consultant shall attend virtual and/or face-to-face meetings to which he/she is summoned for the execution of this consultancy.

The consultancy deliverables will be submitted to the consultancy supervisor for review and approval. If improvements are required, the consultant will proceed to make the requested adjustments.

Payment for each product will be made once it has been approved by the Executing Party's reviewers.

In all discussions and comments made *on site*, the consultant shall expressly state that these reflect his/her opinion and not necessarily the position or opinion of the Contracting or Executing Party, MAR FUND or KfW.

