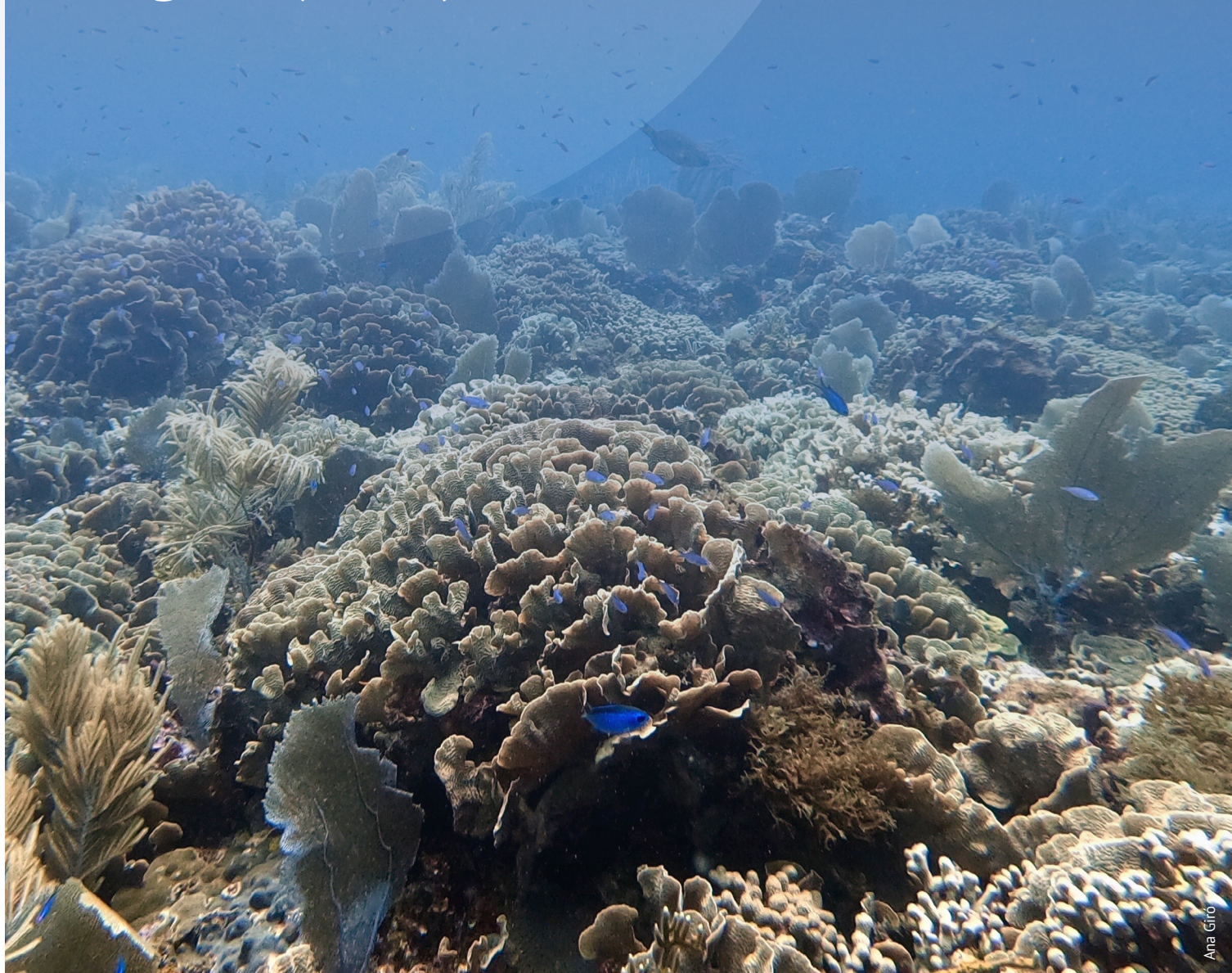


# Policy and regulatory brief on reef conservation and restoration for the Mesoamerican Reef Region (MAR)



Ana Giro

# Policy and regulatory brief on reef conservation and restoration for the Mesoamerican Reef Region (MAR)

## Author:

**José Luis Funes Izaguirre** – Lawyer with a master's degree in Environmental Law and several postgraduate studies in environmental management, specialized in biodiversity and coastal ecosystems.

## Reviewers:

**Claudia Ruiz** – Reef Rescue Initiative Coordinator, MAR Fund

**María José González** – Executive Director MAR Fund

**María del Carmen García Rivas** – Director of Isla Contoy National Park and Arrecife Puerto Morelos National Park of the National Commission of Natural Protected Areas (CONANP), Mexico

**Luisa Fernández** – Ministry of Environment and Natural Resources (MARN), Guatemala

**Skarleth Pineda** – General Directorate of Biodiversity (DiBio) of the Ministry of Natural Resources and Environment (MiAmbiente+), Honduras

**Adriel Castaneda** – Fisheries Department, Ministry of Blue Economy, Belize

## How to cite this document:

Funes Izaguirre, J. L. 2022. Policy and regulatory brief on reef conservation and restoration for the Mesoamerican Reef Region (MAR). MAR Fund. Guatemala City, Guatemala.

# Table of Contents

1. Introduction and Background	4
2. The MAR and Its Environmental, Social, and Economic Importance	6
3. International and Regional Instruments for the Conservation and Restoration of Coral Reefs in the MAR Region	7
4. Financial Instruments and Risk Management	10
5. Conclusions and Recommendations for Decision-Makers	12

# 1. Introduction and Background

The Mesoamerican Reef System (MAR) is the largest transboundary reef system in the world, which extends for more than a thousand kilometers along the coasts of four countries: Mexico, Belize, Guatemala, and Honduras. It is one of the most important marine biological ecosystems that generate many environmental services, such as carbon sequestration through its mangroves and seagrasses to face climate change, in addition to fisheries, tourism activities, coastal protection against extreme weather events, and others.

However, it is currently threatened by different factors, mostly from human origin. According to the latest report of the Intergovernmental Panel on Climate Change (IPCC), the near future seems rather unpromising for land and particularly for marine ecosystems. The *Sixth Assessment Report* contains an in-depth analysis of the intense changes and risks we are currently facing due to the severe effects of climate change. The UN Secretary-General noted that this report is like “an atlas of human suffering and a claim of failed climate leadership.”

Since the *Third Assessment Report*, the IPCC described coral reefs as a “Reason for Concern 1 (RFC1): Unique and Threatened Systems.” Among the conclusions of the *Sixth Assessment Report*, it states that “coral reefs are foreseen to decline by an additional 70-90% with a 1.5 °C global warming; losses will be greater (>99%) with a 2 °C global warming.” The risk of irreversible loss of many marine and coastal ecosystems increases with global warming, especially if it reaches or exceeds 2 °C.<sup>1</sup>

“*The risk of irreversible loss of many marine and coastal ecosystems increases with global warming, especially if it reaches or exceeds 2 °C.*”

In addition, large colonies of hard corals have been lost in the MAR for some years, mostly due to the presence of Stony Coral Tissue Loss Disease (SCTLD).

Moreover, according to the latest *Report of the Intergovernmental Science and Policy Platform on Biodiversity and Ecosystem Services* (IPBES), presented in Paris on May 2019, approximately 66% of oceans are significantly disturbed. This report also concluded that today about one million species of plants and animals are endangered, of which about 33% are coral reef species.

Given this dire scenario, it is critical that the four countries that share the MAR work steadfastly to develop and implement strategies, policies, and instruments to increase the resilience and recovery capacity of the MAR reefs. To implement these risk management tools and carry out reef restoration actions in the MAR region, it is critical to thoroughly

1 [https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15\\_Full\\_Report\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15_Full_Report_LR.pdf)



Robert Charland

review each country's regulatory framework and administrative mechanisms for obtaining the necessary permits.

In this regard, the Mesoamerican Reef Fund (MAR Fund) has coordinated a series of analyses on legislation and policies related to reef conservation and restoration in the MAR region.

Therefore, this document titled "*Summary of Reef Conservation and Restoration Policies and Regulations for the Mesoamerican Reef System (MAR) Region*" contains a summary of the analysis and recommendations for legislation and policy to increase the capacities of societies and governments in the region to act towards the conservation, restoration and sustainable use of the MAR.

## 2. The MAR and Its Environmental, Social, and Economic Importance

In May 2021, the Inter-American Development Bank (IDB) published the document titled “*Economic Valuation of the Ecosystem Services of the Mesoamerican Reef, and the Allocation and Distribution of these Values*,”<sup>2</sup> prepared by Metroeconomica, The World Resource Institute-Mexico, and The Ocean Foundation. This important report analyzes the economic value of the MAR based on “*use values*” (tourism activities, fisheries, and coastal protection) and “*non-use values*,” by country and at a regional level. Use values refer to tourism activities, fisheries, and coastal protection, while non-use values refer to the values derived from the reef’s own characteristics, which are the inherent attributes of the ecosystem itself, that is, its existence, its legacy, and its altruistic nature.

Regarding the reef-tourism sector relationship, the total annual value for its use at the regional level is USD 3.9 billion. In the reef-fishing sector relationship, the total annual value at the regional level is USD 183 million. And, as for the reef-coastal protection relationship, the annual revenue of the MAR at the regional level is valued at USD 320 to 438 million.<sup>3</sup>

According to the latest *Mesoamerican Reef Report* on ecosystem health assessment by the Healthy Reefs Initiative (HRI), presented in June 2022, the MAR has downgraded to a level considered poor after more than fifteen years of conservation progress. This report on reef health evaluates four key indicators that are scored with different ratings (*critical*, *poor*, *fair*, *good*, and *very good*). The indicators include coral

“ A total of 44% of the 234 sites monitored in the four countries are classified as poor and the sites considered as critical amounted to 31 %, which is double the percentage according to the last 2020 report. ”

cover, fleshy macroalgae cover, herbivorous fish biomass, and commercial fish biomass.

A total of 44% of the 234 sites monitored in the four countries are classified as *poor* and the sites considered as *critical* amounted to 31 %, which is double the percentage according to the last 2020 report. One of the main reasons is the significant loss of fish biomass (herbivorous and commercial) in the MAR and inadequate regulation of marine protected areas.<sup>4</sup>

<sup>2</sup> <https://publications.iadb.org/en/economic-valuation-ecosystem-services-mesoamerican-reef-and-allocation-and-distribution-these>

<sup>3</sup> [Economic Valuation of the Ecosystem Services of the Mesoamerican Reef](#)

<sup>4</sup> [https://www.healthyreefs.org/cms/wp-content/uploads/2022/06/HRI-2022-RC-Essentials\\_LoRes\\_final.pdf](https://www.healthyreefs.org/cms/wp-content/uploads/2022/06/HRI-2022-RC-Essentials_LoRes_final.pdf)

### 3. International and Regional Instruments for the Conservation and Restoration of Coral Reefs in the MAR Region

---

The four countries that share the MAR have signed a series of international and regional agreements and conventions for biodiversity conservation. In recent years, the protection of marine biodiversity, especially of coral reef systems, has been incorporated into these international instruments.

The four countries in the region are committed to achieving the United Nations Sustainable Development Goals (SDGs). Five of these SDGs represent a challenge regarding coastal and marine resources: SDG6: Clean water and sanitation; SDG12: Responsible consumption and production; SDG13: Climate action; SDG14: Life below water; and SDG15: Life on land (due to their impact to the marine environment).

#### International Instruments

---

Among the international instruments, the following stand out for their importance:

- a) **Convention on Biological Diversity (CBD).** In 1992, the United Nations Conference on Environment and Development, known as the Earth Summit, was held in Rio de Janeiro (Brazil), where a series of environmental commitments were adopted. One of the main agreements signed at the Earth Summit was the Convention on Biological Diversity (CBD), inspired by the global community's growing commitment to the conservation and sustainable use of biodiversity. The Convention entered into force on December 29, 1993, and has 196 parties.
- b) **Ramsar Convention.** The Convention on Wetlands (known as RAMSAR) is an intergovernmental treaty that provides a framework for national action and international cooperation for the conservation and wise use of wetlands and their

resources, designated by the convention as internationally important. It was signed in 1971 and entered into force in 1975, and currently has 172 parties. Under the RAMSAR Convention, the definition of the term "wetland" includes coral reefs.

- c) **CITES.** The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement whose purpose is to ensure that international trade in specimens of wild animals and plants does not threaten the survival of species. It was signed on March 3, 1973, and entered into force on July 1, 1975. It currently has 183 parties, including the four countries that share the MAR. It is one of the few international agreements that are legally binding, that is, it establishes specific provisions for compliance. Therefore, in the event of non-compliance with its provisions, the convention establishes a mechanism called "review of significant trade", which consists of evaluating whether exports of species included in the convention's appendices comply with the three fundamental requirements it regulates: legal origin, sustainability, and traceability. Failure to demonstrate that trade of the species complies with these requirements may result in the suspension of the trade from the non-complying country.
- d) **Cartagena Convention.** This international instrument is binding for the Caribbean region and for countries located in the Atlantic Ocean. The Cartagena Convention was created with the objective of helping the countries of the Wider Caribbean region to achieve a balance between the development and protection of the marine environment. Three protocols are derived from the convention: 1) on Cooperation to Combat Oil

Spills in the Wider Caribbean Region; 2) on Specially Protected Areas and Wildlife (SPAW), and 3) on the Prevention and Control of Marine Pollution from Land-based Sources and Activities (LBS).

## Regional Instruments

The countries of the MAR region have established a series of political and technical commitments for the conservation of the reef system in the past 25 years ago, with the Tulum Declaration of 1997. These regional agreements include the following:

- a) **Declaration of Tulum.** Set forth the commitment of the four signatory countries in favor of driving policies and an action plan for the conservation and sustainable use of coastal and marine resources in MAR. This declaration was the first effort to integrate the four countries that share the MAR for its conservation and sustainable use for the benefit of local communities.
- b) **Strategic Agenda of the Central American Integration System (SICA,** for its initials in Spanish). It proposes the creation of management plans for the sustainable development of fisheries and aquaculture and the establishment of consolidated land/marine biological corridors. (SICA, 2017).
- c) **Roatan Agreements-Blue Economy Summit (BES, 2019).** A strategic starting point for the Regional Blue Economy Strategy for the Wider Caribbean promoted by UNEP under the Cartagena Convention.
- d) **Updated Regional Climate Change Strategy** and action plan (2018-2022). Promotes the harmonization of strategies for restoration, protection, and conservation of marine-coastal ecosystems in the SICA region (CCAD, SICA, 2019).
- e) **Regional Strategy for the Conservation and Sustainable Use of Biodiversity in Mesoamerica** (2004-2014). Establishes commitments to conserve

and restore marine-coastal ecosystems by including biodiversity in the system of national accounts and promoting the conservation of RAMSAR sites.

- f) **Regional Environmental Framework Strategy 2021-2025 (ERAM,** for its initials in Spanish). Establishes the development of methodologies and competencies of countries of the Central American Commission on Environment and Development (CCAD, for its initials in Spanish) to promote blue carbon projects. It also facilitates the participation of the private sector as a source of financing through its corporate social responsibility actions (CCAD, 2020). In addition, this strategy defines the regional environmental priorities of Central America and the Dominican Republic in harmony with the 2030 Agenda and the SDGs, the Paris Agreement on climate change, and the SICA Regional Climate Change Strategy. More than 20 SICA regional organizations participated in its design to strengthen the intersectoral approach and coordinate a regional environmental agenda with other productive agendas (agriculture, health, energy).

The ERAM has five strategic lines of action:

- 1) Environmental quality
- 2) Seas and biodiversity (this line is the one that corresponds to the regional reef work).
- 3) Integral management of water resources, forests, and sustainable landscapes.
- 4) Climate change
- 5) Integrated risk management (with regional ecosystem restoration initiatives).

The objective of the ERAM is to establish a Regional Monitoring, Reporting, and Verification System (MRV) that evaluates the fulfillment of goals of different regional initiatives and present regional climate scenarios for climate risk management and adaptation planning. In June 2020, the CCAD Council of Ministers signed a



Memorandum of Understanding with Mexico's SEMARNAT to promote cooperation in the planning and implementation of joint actions with respect to natural resources and the environment, including marine-coastal resources, integrated water resource management, the circular economy and integrated waste management, and the promotion of alliances with other partners.

**g) Regional Blue Economy Protocol with a Ridge-to-Reef Approach (PREA-R2R).** The objective of the protocol is to promote an ocean-based economy to promote responsible fishing, clean energy, good agricultural practices, sustainable tourism, and the incorporation of fishing and local stakeholders in social and solidarity development. Some of the challenges are to generate strategies to promote good practices and to approach the private sector, in addition to joining efforts with the Secretariat for Central American Tourism Integration (SITCA, for its initials in Spanish), the Coordination Center for Disaster Prevention in Central America and the Dominican Republic (CEPRENAC, for its initials in Spanish), the Council of Ministers of Finance of Central America, Panama and the Dominican Republic (COSEFIN, for its initials in Spanish), and the Organization of the Fisheries and Aquaculture Sector of the Central American Isthmus (OSPESCA, for its initials in Spanish). The purpose is to consolidate partnerships that create cooperation opportunities in the SICA region and Mexico. PREA-R2R has successfully implemented the project Caribe Circular-CCDA-SICA-Government of the State of Quintana Roo, Mexico. One of its key objectives is to endorse the commitments of Tulum Agreements under the agreement between CCDA and SEMARNAT Mexico.

**h) Central American Fisheries and Aquaculture Integration Policy.** Promotes measures for the management of fishing activities to reduce the impacts of climate change and illegal fishing. It also emphasizes the application of protocols to safeguard and prevent the introduction of invasive alien species (OSPESCA, 2015).<sup>5</sup>

**i) Regional Strategy for Blue Growth in SICA countries (ERCA, for its initials in Spanish).** This is a regional initiative led by OSPESCA, which is aligned with the 2030 Agenda and integrates the SDGs. It is considered an important planning and management tool for marine-coastal areas and maximizes –from the consensus of stakeholders– the quality of life of people dependent on marine-coastal areas through the sustainable use of resources of the blue environment.

**j) Regional Strategy for Mangrove Management, Conservation, Restoration, and Monitoring in the MAR 2020-2025.** It analyzes the valuation of goods and services associated with water use in watersheds with mangroves, the promotion of policies and guidelines for the development of nature-based coastal infrastructure, the incorporation of blue carbon flows into national accounts and reports, as well as other actions (Centeno Guevara, 2020).

**k) Central American Policy for Integrated Disaster Risk Management (PCGIR, for its initials in Spanish) of SICA** integrates the efforts of the governing bodies of civil protection or risk management, promoting regional policies and support to each country.<sup>6</sup>

<sup>5</sup> Additionally, the application of regulation OSP-08-2014 to “Prevent, Discourage, and Eliminate Illegal, Unreported, and Unregulated Fishing in SICA Member Countries” is promoted.

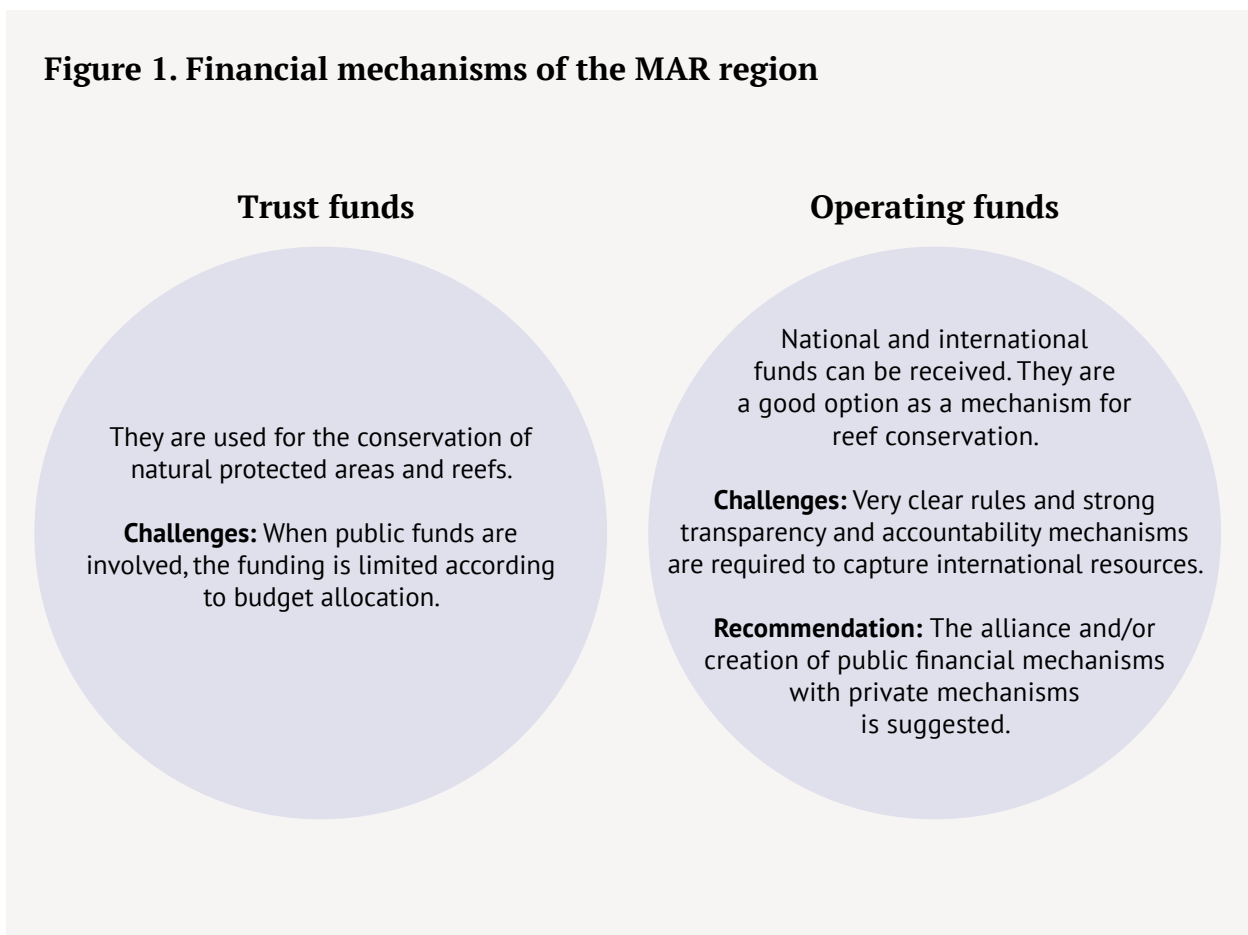
<sup>6</sup> In the case of the Central American region, their commitment at a global level has been confirmed, with the adoption of the Sendai Framework for Disaster Risk Reduction 2015-2030, at the Third United Nations World Conference on Disaster Risk Reduction.

## 4. Financial Instruments and Risk Management

**G**lobally, most policy instruments and governance mechanisms related to the protection and sustainable management of coral reefs are not linked to financial mechanisms (UNEP, 2019), and the existing ones are mainly based on the global goals of nine public policy instruments at an international level.<sup>7</sup>

In the MAR, countries have developed a financial architecture shown in Figure 1, which is based on international, regional, and national public policy for coral reef conservation and restoration, consolidated in its design, not so in its implementation.

**Figure 1. Financial mechanisms of the MAR region**



<sup>7</sup> Protection of the Marine Environment from Land-based Activities, Convention on Biological Diversity Strategic Plan 2011-2020), Paris Agreement, 2030 Agenda for Sustainable Development (global instruments), Regional Action Plan for the Coral Triangle Initiative, South Pacific Regional Environment Programme Secretariat Action Plan 2011-2015, Bay of Bengal Strategic Action Programme, Arafura and Timor Seas Strategic Action Programme, Western Indian Ocean Strategic Action Programme.



Robert Charland

Conservation trust funds (CTFs) are economic instruments that provide funding for biodiversity conservation. They can finance a portion of the long-term management costs for a country's protected area (PA) system, as well as conservation activities and sustainable development initiatives outside PAs. The core activity of CTFs has been to mobilize resources from a variety of sources, such as international donors, national governments, and the private sector, and channel them as grants to multiple programs and projects on the ground through non-governmental organizations (NGOs), community-based organizations (CBOs), and government agencies, such as national park managements.<sup>8</sup> An example of a conservation trust fund is the Trust Fund for the Integrated Management of the Coastal Zone, Social Development, and Security of the Government of the State of Quintana Roo (*Fideicomiso para el Manejo Integral de la Zona Costera, Desarrollo Social y Seguridad para el Estado de Quintana Roo*).

The operational fund is the financing instrument of an operational program, generally established from a trust fund. It is intended exclusively to finance the content of the operational program through a financial year plan. In this case, MAR Fund itself or

the Mexican Fund for the Conservation of Nature (FMCN) stand out in the region.

Among the various public financial and economic mechanisms and instruments for the conservation and restoration of coral reefs at the regional level, the work of COSEFIN is highlighted, with the participation of two of the four countries that share the MAR: Guatemala and Honduras. COSEFIN's objective is to seek funding through technical assistance and cooperation for financial disaster risk management. This support backs actions to promote a green fiscal policy. The MAR region is among its areas of action. COSEFIN'S strategy is to promote a blue economy through the ERCA. Its challenges include enhancing public-private partnerships and mobilizing resources for climate change mitigation and adaptation.

On the other hand, the study on the "*Economic valuation of coral reefs in the MAR and the goods and services they provide*" was carried out with the support of the Inter-American Development Bank (IDB). The objectives of the study are basically to determine the economic value of the ecosystem, determine the distribution of value among stakeholders (public and private sector), and inform stakeholders about the importance of implementing conservation policies.

<sup>8</sup> [https://static1.squarespace.com/static/57e1f17b37c58156a98f1ee4/t/5953ee9db8a79b250e37aa9f/1498672837068/full\\_ES-compressed.pdf](https://static1.squarespace.com/static/57e1f17b37c58156a98f1ee4/t/5953ee9db8a79b250e37aa9f/1498672837068/full_ES-compressed.pdf)

## 5. Conclusions and Recommendations for Decision-Makers

In general terms, all four countries have environmental regulations and instruments for the conservation and restoration of coral reefs. However, there is no adequate linkage between these regulations and instruments. And there is also no effective enforcement of environmental legislation by environmental and fisheries inspection and surveillance authorities.

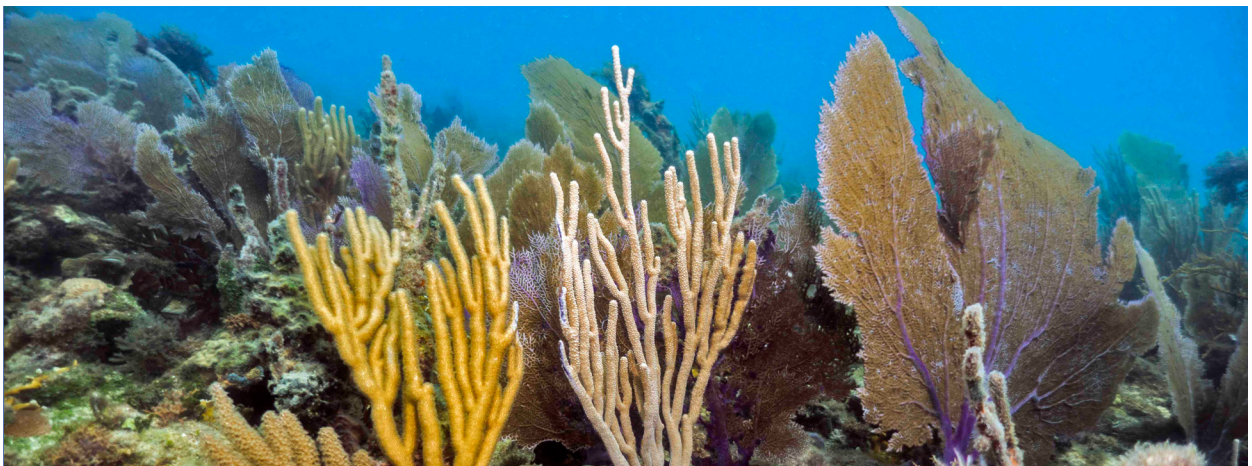
It should be highlighted that the benefits generated by the health of coral reefs are not only environmental (ecosystemic), but also bring with them a myriad of social and economic benefits for our people. However, there must be better regional coordination of this valuable shared natural resource since these ecosystems are characterized by their fragility and vulnerability to human actions. For this reason, it is necessary to review and modify our regulatory frameworks to strengthen actions for the conservation and sustainable use of our coral reefs.

In this sense, the conclusions and recommendations cover two areas described below: the legal framework and environmental policy instruments, and financial and risk management instruments.

### Legal framework and environmental policy instruments

At the regional level, on June 5, 1997, the presidents of Mexico, Guatemala, and Honduras and the prime minister of Belize signed the Mesoamerican Caribbean Reef Systems Initiative, known as the Tulum Declaration. This initiative established the basis and opportunities for the four countries to take individual and coordinated actions to improve the management of marine and coastal protected areas in the MAR. It also promotes ecotourism, regulation of the sustainable use of marine and coastal resources, prevention of coastal pollution, as well as international financing, scientific research, capacity-building, and social participation within a cooperation approach and mutual understanding.

In 2006, in Panama City, the four heads of state signed an agreement confirming their commitments to the MAR. However, most of the commitments have unfortunately not been fulfilled.



Fundación Albatros

The existence of these instruments reveals the regional intention and goodwill to work for the conservation and restoration of shared marine resources. For this reason, it is essential to have the financial and economic resources from the four countries to comply with the commitments and to consolidate alliances in order to achieve this objective. However, funding for the implementation of these actions has been challenging and has not yet been achieved. Hence, the vulnerability and fragility of the reef system require a stronger commitment from government authorities for its preservation.

It is recommended to define in the short term the renewal of the Tulum Agreements; or to generate a new agreement that could be called Tulum+25, with the following objectives and scopes:

- a) To ratify the commitment to act promptly and in a coordinated manner to stop the reef ecosystem from deteriorating.
- b) To incorporate the private sector (hoteliers, tourism service providers, etc.) in a more active way to create these public conservation policies, since they are the users and beneficiaries of the environmental services provided by the reef system. This sector is a priority in financing actions for the conservation and restoration of coral reefs.
- c) To agree on specific, measurable, and modifiable action plans for a maximum of five years.
- d) To establish a regional monitoring system for the trade of wild marine species by CITES and the homologation of closed seasons and harvesting quotas, in coordination with the authorities and fishermen in the fishing sector.
- e) To make commitments to enhance environmental policy instruments that have proven to contribute to the conservation of reef ecosystems. Some of these include the establishment of protected

areas, the declaration of fishing refuges (fully protected zones) for fish replenishment, the protection of fish spawning sites, ecological land-use planning programs, planning for the Integrated Management of the Marine-Coastal Zone, and the moratorium on oil exploration and exploitation.

- f) To establish a binding commitment for each country to develop a reef restoration plan and program, as well as a regional plan and program, including short- and medium-term goals, and also cost estimates to inform the financial planning by the relevant institutions in each country.

## Financial and risk management mechanisms

Regarding financial mechanisms, many authors have classified these mechanisms according to their institutional origin, for example, international cooperation, government institutions, private sector, and NGO resources. UNDP divides these mechanisms into conventional (multilateral, bilateral institutions, NGOs, private financing) and innovative (direct commercial financing, market, and structural mechanisms).

One of the most suitable financial mechanisms is the parametric reef insurance. This is an innovative financial mechanism that provides immediate funds for reef damage following hurricane impact. Unlike traditional insurance, parametric insurance is developed based on previously analyzed technical parameters, such as the type of event, the extent of damage, and the characteristics that may generate a negative or catastrophic impact. The fundamental elements taken into account for this type of insurance are the identification of the sites to be insured, the evaluation of repair and restoration costs, and the correlation of the damage to the reefs with their physical-biological characteristics after a disturbing event.

A good example is the case of the parametric insurance acquired by the Government of the State of Quintana Roo, Mexico, through the Trust Fund for the Integrated Management of the Coastal Zone, Social Development, and Security for the State of Quintana Roo. This parametric insurance was purchased for the first time in 2019. Its purpose is to protect the State's coral reefs and marine beaches against hurricanes. The policy is valid from July 2022 to July 2023, for an amount of USD 1,745,000, with an annual premium of USD 300,000.

In 2018, MAR Fund, in collaboration with Willis Towers Watson (WTW), created the MAR Insurance Programme, which main objective is to implement (cost-effective) insurance to cover the risk of hurricanes in the MAR and improve the resilience of local beneficiaries who depend on the reef for their livelihoods, food security and protection against coastal hazards. The program is supported by several donor sources, including the InsuResilience Solution Fund (ISF). In July 2021, with financial support from ISF, coverage was established for four preliminary reef sites: Banco Chinchorro and Xcalak Reefs in Mexico and Hol Chan and Turneffe Atoll in Belize.

In June 2022, MAR Insurance Programme partners moved forward to complete insurance and coverage for three additional sites: Bay Islands (Roatán, Guanaja, and Utila) in Honduras and Cabo Tres Puntas and Motaguilla in Guatemala. A total of seven reef sites are insured throughout the MAR for the period June 2022 to May 2023. Premiums have been managed by MAR Fund, with support from WTW and financing from ISF.

Additionally, in 2017, MAR Fund created an Emergency Fund as a private regional financial instrument to provide immediate and timely funding to reef sites that have been impacted by natural disasters or anthropogenic activities. The objective is to strengthen the resilience and adaptive capacity of MAR marine-coastal zones, especially coral reefs.

In addition, through this instrument, MAR Fund will administer the insurance payout funds and allocate them for response groups at reef sites with insurance coverage.

These two instruments are critical to funding the timely restoration of coral reefs in the MAR region after climatic events like hurricanes and anthropogenic activities such as potential ship groundings.

## Regional protocols for the attention of reefs

**a) Immediate Early Warning and Response Protocol: Actions to mitigate the impact of tropical cyclones on coral reefs**

This protocol is a guide for reef managers, brigade members, and key partners during the six stages of implementation that should take place throughout the year, before, during, and after the tropical cyclone season. The six stages consist of planning and preparedness, early warning, rapid damage assessment, primary response, secondary response, and post-response actions.

**b) Response Protocol for the Prevention and Management of Coral Reef Groundings**

This protocol is a guide for responding to reef damage by vessels or other marine artifacts. It identifies standard and recommended procedures for the assessment, documentation, and restoration of damaged coral reefs resulting from boat groundings and other serious physical damage. It describes in detail the actions necessary to minimize damage during an emergency response, assessment protocols, and possible restoration mechanisms. Users of the protocol include government agencies, stakeholders, and vessel representatives (responsible party), as well as participating stakeholders.

## Regional recommendations for decision-makers

- Adapt the regulatory and administrative framework for the four countries to carry out financing actions for reef restoration projects on damage caused by extreme meteorological and anthropogenic events. It is particularly important to define the design and implementation of parametric insurance in each country or at a regional level, the implementation of best practices for reef restoration, and emergency response. This entails putting together teams and developing rapid response protocols for hurricanes and groundings.
  - Concerning environmental policy instruments, all four countries have a general framework for the protection of marine natural resources. However, none have a specific public policy for coral reef restoration. A suitable proposal to address this issue at the regional level is that, through the CCAD, a regional policy and strategy be developed that would include Mexico (even if it is not part of CCAD), since this country already has a cooperation agreement for the MAR. Thus, it would be the appropriate institutional framework to develop these environmental policy instruments.
  - A good international example of having created regional policies and their respective regional strategies is the expansion of marine reserves in the Eastern Tropical Pacific Marine Corridor (Hermandad Marine Reserve), with the recent protection of marine corridors between the Galapagos Islands archipelago (Ecuador), Malpelo Island (Colombia), Coiba Island (Panama), and Cocos Island (Costa Rica), to ensure the functionality of these important marine corridors for biodiversity and their sustainable use in fisheries and tourism.
  - As for compliance with international commitments, it is essential to analyze the situation of each of the four countries concerning their commitments to the various international agreements and treaties that address the conservation of marine biodiversity and the effects of climate change (CBD, CITES, RAMSAR, the Paris Agreement, the Glasgow Pact, and the Cartagena Convention, among the most important). As mentioned above, funding is essential for its implementation, such as access to resources from the Green Climate Fund, which was created by the United Nations Framework Convention on Climate Change (UNFCCC), to present a joint (regional) proposal for the conservation and restoration of the reef system. It is important to stress that, in these international forums, the association of countries that share marine ecosystems has a greater impact on common regional policies and facilitates the access to international financial resources, such as those related to climate change.
- A good example is an initiative of six Southeast Asian countries (Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands, and Timor-Leste) called the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF). These six countries jointly attend international forums to advocate for regional policies through a regional action plan and the creation of a regional secretariat that coordinates ministerial meetings. This organization has been recognized by the United Nations since 2017 and has a place in many international agreements.
- Based on risk management instruments such as the Parametric Insurance and the Emergency Fund designed by MAR Fund, it is important that each of the countries analyze their contributions to incorporate this instrument into their current and future risk budgets and policies, so that potentially at-risk areas and other natural assets have insurance coverage.

- To standardize conservation concepts and criteria and design governmental protocols for regional attention to reef damage resulting from extreme weather events, based on the experience of existing regional protocols such as those developed by MAR Fund and TNC.
- To promote regional actions to prioritize and address threats, develop risk analysis and early warning systems, and develop country-specific rapid response and disaster response protocols, taking into account the restoration of coral reefs.
- The commitment of each country is fundamental for the development of national risk management instruments to create resilience in reefs and thus maintain their social, economic, and certainly environmental benefits. This commitment should be reflected in the financing required to implementing management instruments, which could be national emergency funds or parametric insurance.

Regional parametric insurance has several advantages: with a timely payment, it minimizes the cost of the insurance by reducing volatility in payouts and reducing the value of the premium; it minimizes costs with a single price for placement and administration of insurance policies; it maximizes operational efficiency with a consistent regional payout distribution and governance process; it streamlines the implementation of reef response, maximizing collaborative action and peer learning, and it enables a regional premium funding strategy that recognizes the MAR as a global public good.

- Each of the countries should integrate multi-sectoral coral rescue brigades to carry out the necessary emergency response actions in the aftermath of a hurricane. A good example is the one implemented by the community brigades in three sites of Puerto Morelos in Mexico after

the impact of hurricanes Gamma, Delta, and Zeta in 2020, with the financial support of the MAR Fund Emergency Fund.

Currently, also with the support of the MAR Fund and in coordination with TNC and the support of the governments of the four MAR countries, more than one hundred brigade members have been trained in the four MAR countries.

- Finally, the International Maritime Organization (IMO) must consider to declare the MAR area as a Particularly Sensitive Sea Area to protect this vulnerable and fragile zone from possible groundings. Therefore, the countries of the region should move forward in designing a proposal to submit to the IMO.



# Policy and regulatory brief on reef conservation and restoration for the Mesoamerican Reef Region (MAR)



Robert Chartrand



This document was prepared through a legal analysis of the policies, norms, and regulations that exist in the Mesoamerican Reef System (MAR) region in support of the conservation and restoration of reefs and coastal marine resources.