

Financing Reef Resilience to Extreme Climate Events

Hurricanes are a leading driver of coral cover loss in the Caribbean, and immediate post-hurricane repair work is critical to protect this ecosystem. The Mesoamerican Reef (MAR) Fund, with partners across the Caribbean and support from Willis Towers Watson (WTW), are scaling innovative risk financing to build the resilience of coral reefs to extreme climate events. This project facilitates coordinated response plans, in-the-water skills, and bespoke risk financing instruments (including parametric insurance) that coastal communities need to jump-start reef recovery and maintain the myriad benefits that these high-value natural assets provide.

This project advances key [Sustainable Blue Economy Finance Principles](#) objectives to utilise insurance tools to build restore and project marine ecosystems, as well as the livelihoods and communities dependent upon them.

Key facts:

- **Blue economy sectors targeted:** Marine and coastal tourism
- **Project:** Financing Reef Resilience to Extreme Climate Events
- **Timeline of the project:** Solution piloted in 2021-22. Expansion to other countries in the greater Caribbean taking place in 2023-24
- **Geography:** Great Caribbean
- **Key words:** Coral reef; coastal and marine habitats; biodiversity; parametric insurance; climate change resilience

Who?

After building on early project success in Central America with the Caribbean Biodiversity Fund, MAR Fund and WTW are now working with Forever Costa Rica Association and Fondo

Accion to scale ecosystem resilience across the Caribbean Basin.

This project is supported by the Ocean Risk and Resilience Action Alliance (ORRAA), with financial support provided by the United Kingdom’s Blue Planet Fund and the Government of Canada.

Where?

Belize, Colombia, Costa Rica, Guatemala, Honduras, Mexico.

What?

Around 1 billion people benefit from [coral reefs](#). The Mesoamerican Reef provides estimated annual environmental services worth USD\$320 to USD\$438 million in coastal protection, USD\$183 million in reef-related fishing, and USD\$3.9 billion in [reef-related tourism](#). Yet reefs are some of the most threatened ecosystems on Earth, and hurricane-related surge and debris from high winds can cause severe damage. While a rapid response is essential for securing the benefits that a healthy reef provides, they are rarely included in post-disaster management plans and budgets. Instead, reef response is dependent on reactive, time-consuming, and often unreliable fundraising, which disincentivises future investment. Analysis of the impacts of extreme storm events shows that to effectively improve long-term reef health following a storm, reef repair must begin within two weeks of the event.

How?

In 2021, WTW and the MAR Fund developed a uniquely designed parametric insurance product to provide cost-effective coverage to four priority reef sites that have protected status along the Mesoamerican reef. The parametric measures provide for a rapid insurance pay-out following an extreme storm event. The insurance was designed using a novel hurricane reef damage model that captures the relationship between hurricane intensity and reef damage. Storm wind intensity triggers immediate, post-storm pay-

outs at specific levels to cover the costs of reef recovery response.

Following a competitive bidding process, AXA Climate on behalf of AXA XL was selected as the capacity provider for Belize, Colombia, Costa Rica, Guatemala, Honduras and Mexico. This first insurance policy was purchased by the MAR Fund with financial support from the InsuResilience Solutions Fund following initial support from Global Affairs Canada through ORRAA. Now in its second year, and underwritten by AXA Climate and Munich Re, this parametric insurance product covers seven sites in Mexico, Belize, Guatemala and Honduras.

The first pay-out from this parametric insurance product was triggered on 2 November 2022 when the Turneffe Atoll off the coast of Belize was hit by Hurricane Lisa. This pay-out of USD\$175,000 financed immediate reef recovery and restoration activities following damage from the hurricane.

Looking ahead...

Strengthening coastal resilience by integrating response preparedness with pre-positioned financing is an innovative approach that can be scaled, not only across the Caribbean Basin, but also to other ecosystems such as mangroves. The MAR Fund and WTW have enhanced reef response preparedness and financing in the MAR region and are now collaborating with partners in additional geographies to leverage their experience. With further support through ORRAA from the Government of Canada (announced at COP27), the project is now designing an initial insurance product to cover post-hurricane reef response in San Andrés and Providencia, Colombia. It will also explore the feasibility of insurance to cover additional coral reef risks, such as bleaching and rainfall-driven runoff.