Mesoamerican Reef Insurance Programme
Building the climate resilience of our critical natural infrastructure

The Mesoamerican Reef Fund and Willis Towers Watson are collaborating to develop a practical solution to address climate risk to the Mesoamerican Reef and the communities it supports: the deployment of parametric insurance tools, which will provide predictable and timely funds to support emergency response activities to help restore and conserve this critical natural infrastructure.

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The Mesoamerican Reef (MAR) is a high-value natural asset, stretching over 1,000 kilometres along the coast of Mexico, Belize, Guatemala, and Honduras. From fisherfolk dependent on a reliable catch, through coastal communities made more resilient by the protective capacity of the reef, to tourism and recreational businesses generating GDP, the MAR provides food security, livelihoods, and safety for millions of people.

The MAR has faced, and survived, the impacts of hurricanes for eons, but as the effects of climate change and other stressors exert increasing pressure on the reef, the risk of a hurricane impact leading to irreversible coral degradation and mortality has grown ever more rapidly.

The Solution
The goal of the Mesoamerican Reef Insurance Programme is to design and implement parametric insurance covering hurricane risk to the MAR and the communities who depend on it for protection, food security, and livelihoods. Pilot coverage for seven sites in Mexico, Belize, Guatemala, and Honduras will build the climate resilience of almost 2 million beneficiaries.

The MAR Insurance Programme will provide a predictable and timely source of funds for hurricane-affected communities and emergency responders to plan and execute rapid response activities.

The Challenge
Early action to clean up the reef and jump-start regeneration and recovery is critical to reducing the overall impact of lost ecosystem services—in both social and economic terms. However, the restoration of natural ecosystems is often not a priority in the aftermath of extreme events, as resources are focused mainly on grey infrastructure and property. This risk to coastal communities is currently unassessed, unaddressed, and unfinanced.

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The Mesoamerican Reef Insurance Programme aims to implement innovative finance, which can increase the resilience of communities reliant on the blue economy and the MAR as a natural infrastructure asset.

**Why Insurance**

Insurance is a tool to finance risk and build resilience to shock events, mitigating the impacts by arranging finance in advance. It can be more cost-efficient than other financial mechanisms, especially credit arranged after-the-fact, particularly for extreme risks. Pay-outs provide funding for recovery quickly after an event, and this predictability of funding allows for the development and implementation of contingency plans, which can further minimise negative impacts.

**Insurance coverage of reefs can significantly increase the resilience of vulnerable coastal populations by:**

1. Addressing a post-event funding gap by providing a framework and financing mechanism to clarify risk ownership and facilitate the collaboration of multiple stakeholders;
2. Providing a predictable source of funds, allowing local communities and government to incorporate natural capital into post-event response contingency planning;
3. Providing a timely flow of funds to carry out immediate, post-event reef response and clean-up, speeding the recovery of reefs; and
4. Ultimately, restoring valuable ecosystem services provided by this natural infrastructure, thus generating economic value by reducing the cost of impairment of such services.

**Mesoamerican Reef Insurance at a Glance**

The proposed product structure is a parametric index capturing reef damage as a function of hurricane intensity through a high-resolution grid of peak windspeed, which has been established as a suitable proxy for reef damage once existing reef characteristics are taken into account. A group policy will cover the 7 pilot reef sites, with a bespoke pay-out structure, based on the cost of response at that reef site at different damage levels.

**Key Beneficiaries**

Marine ecosystems may be ‘free’ public goods, but their maintenance is critical to sustaining their value. Like roads and bridges, natural assets can be thought of as public infrastructure, and even though they do not often feature explicitly on government asset lists or balance sheets, revenue streams depend on their presence and continued health. Therefore, like grey infrastructure, communities must establish financial responsibility for the care and upkeep of natural assets, otherwise risking significant stress to the industries and financial flows that depend on their functioning.

Reefs provide the critical infrastructure stimulating economic activity in at least three dimensions:

- **Contribution to GDP**: reefs underpin the economic activity of two critical sectors of the economies of Belize, Guatemala, Honduras, and Mexico, namely commercial fishing and tourism.
  - **Key beneficiaries**: government (national and local, through tax revenue) and business owners (e.g. seafood business owners, hotel owners, tourism operators).

- **Informal livelihoods**: reefs provide local communities with fishing grounds for food security and informal activities.
  - **Key beneficiaries**: local communities, especially vulnerable informal sector workers and low-income households.

- **Employment**: Reef-dependent sectors provide a major source of formal employment to coastal communities.
  - **Key beneficiaries**: households and individuals employed in the fishing and tourism sectors.