

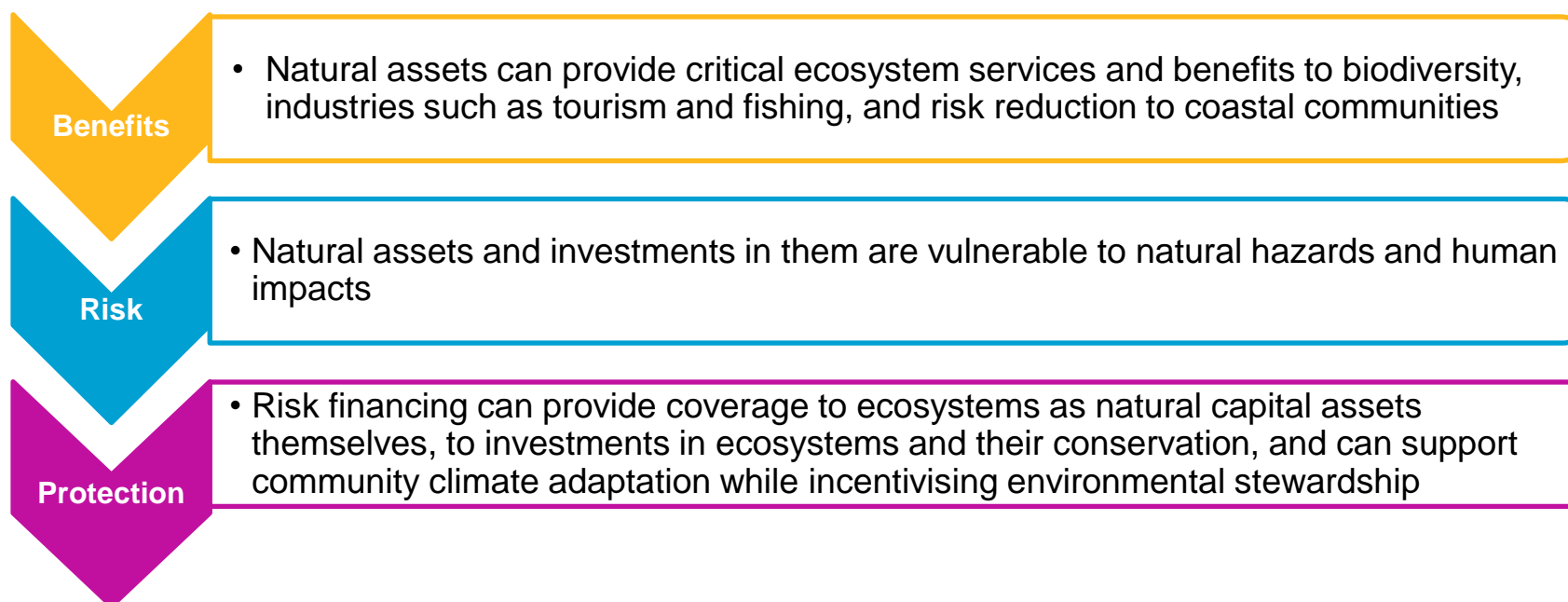
Financial Sustainability for the recovery and resilience of the Mesoamerican Reef

Innovative financial mechanisms to manage risk and build resilience in reef systems and their dependent populations

CCAD-MAR Regional Strategic Workshop

23 November 2021

What role do risk financing and insurance play in supporting ecosystems?



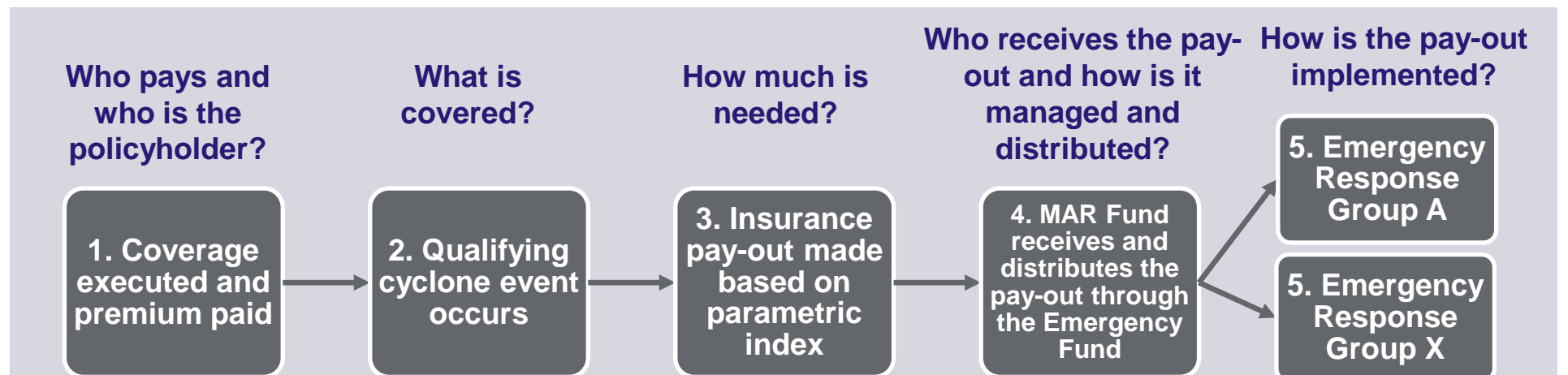
The role of insurance

- Insurance is only a part of the solution, but it can provide wider co-benefits – such as financial inclusion and supporting climate resilience in communities and unlocking additional investments in natural assets
- Insurance-related methodologies, such as quantitative risk assessment, develop risk awareness and understanding, which can be used to inform evidence-based decision making
- Parametric insurance in particular provides rapid liquidity after an event to facilitate immediate response and recovery
- Risk transfer creates incentives to mitigate risks by generating greater risk awareness and recognising the real financial consequences of risk

MAR Insurance Programme: Introduction

A practical example of putting in place insurance protection for ecosystems

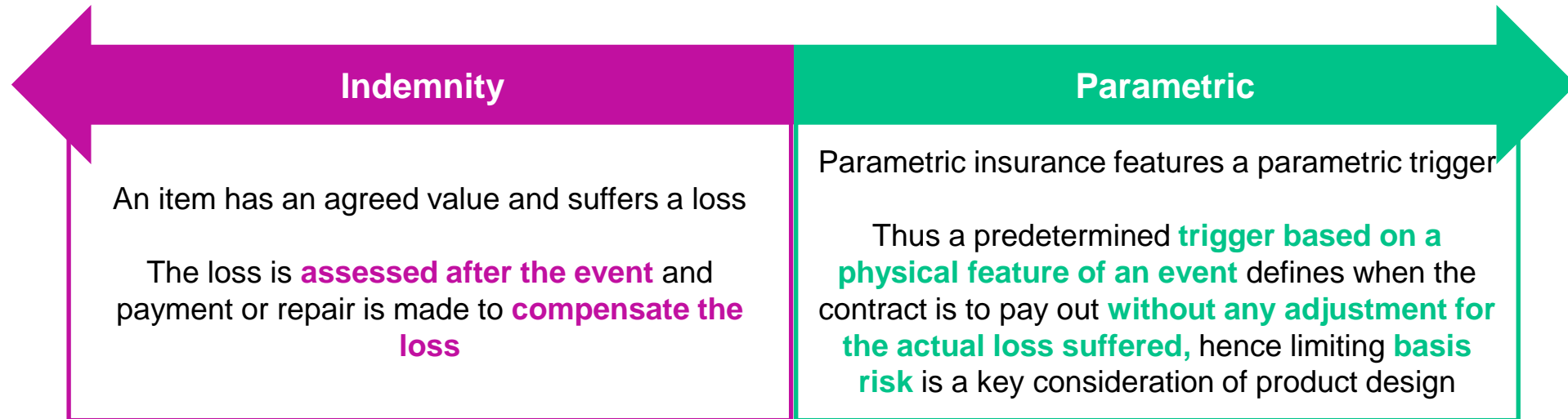
An insurance solution, providing cost-effective cover for hurricane risk to the MAR, will complement and support the holistic strategy of the RRI and the sustainability of the Emergency Fund



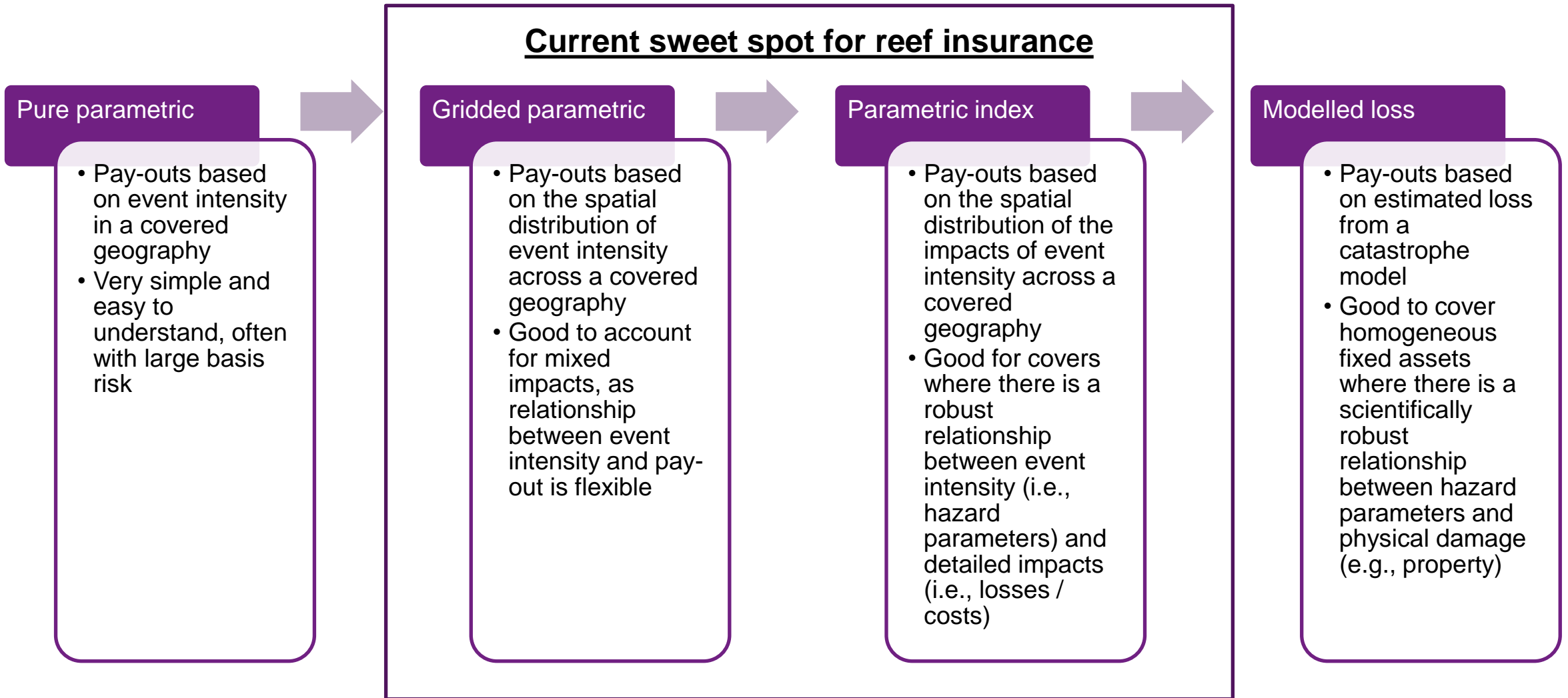
What is parametric insurance?

Parametric insurance

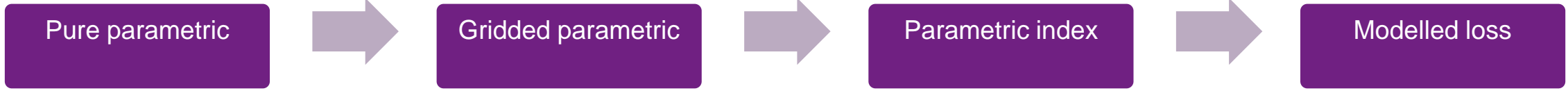
- A risk financing instrument that pays out a pre-agreed amount to a policyholder according to pre-defined event characteristics (e.g., wind speed)
- The pre-defined event characteristics are selected such that they effectively proxy loss, damage, or impact
 - Thresholds are set to “trigger” pay-outs if pre-agreed event parameters are met



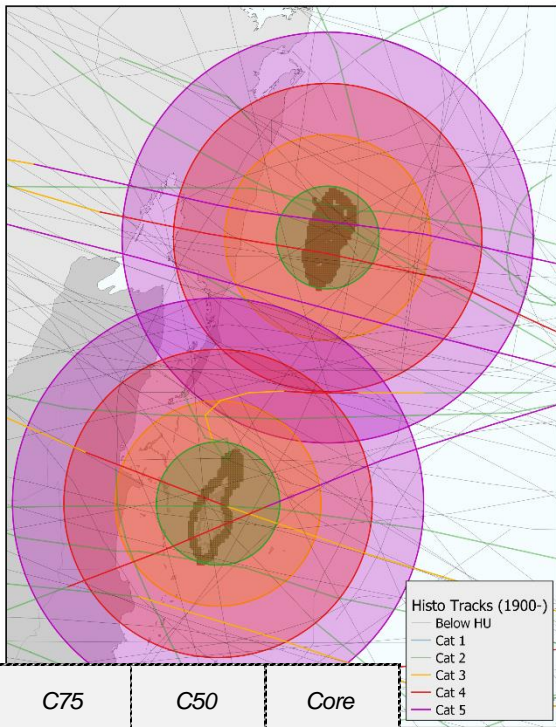
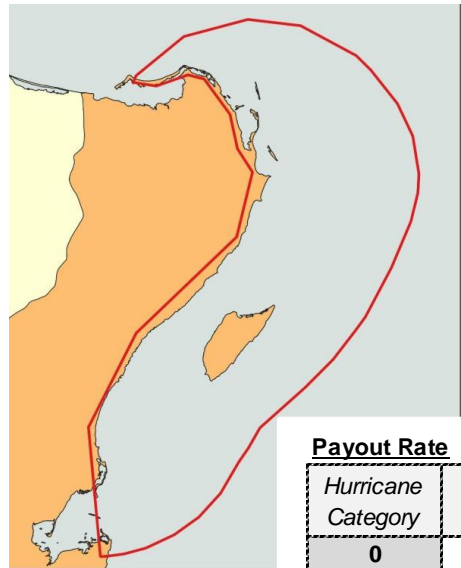
Determining the optimal product design



Determining the optimal product design

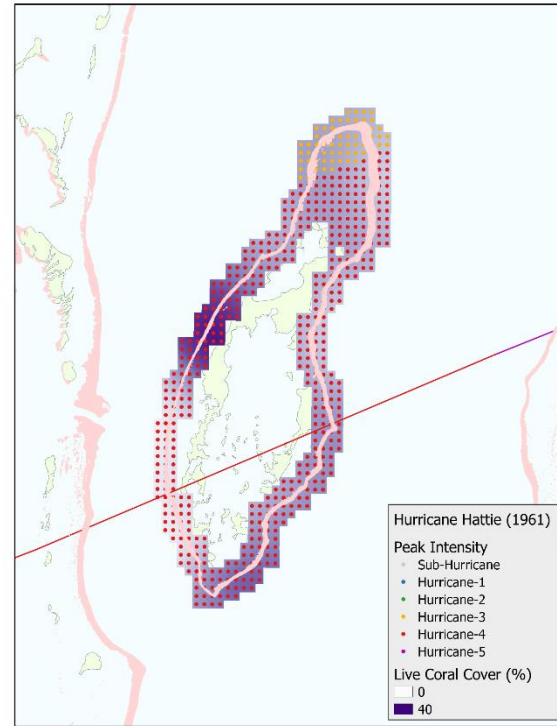


Wind Speed (kt)	% of Limit
100 – 129	40%
130 – 159	80%
>= 160	100%

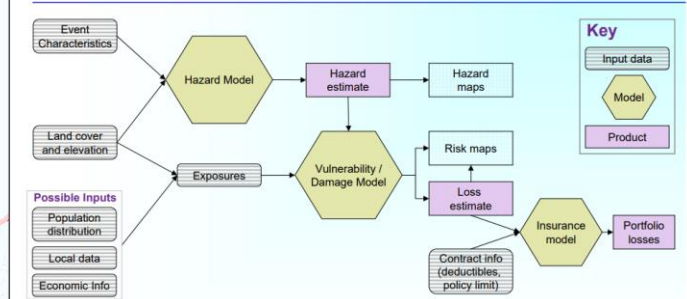


Payout Rate

Hurricane Category	C100	C75	C50	Core
0	0%	0%	0%	0%
1	0%	5%	5%	10%
2	0%	5%	10%	20%
3	5%	10%	20%	40%
4	10%	20%	40%	80%
5	20%	40%	80%	100%



Hazard and Loss Assessment Process Single event

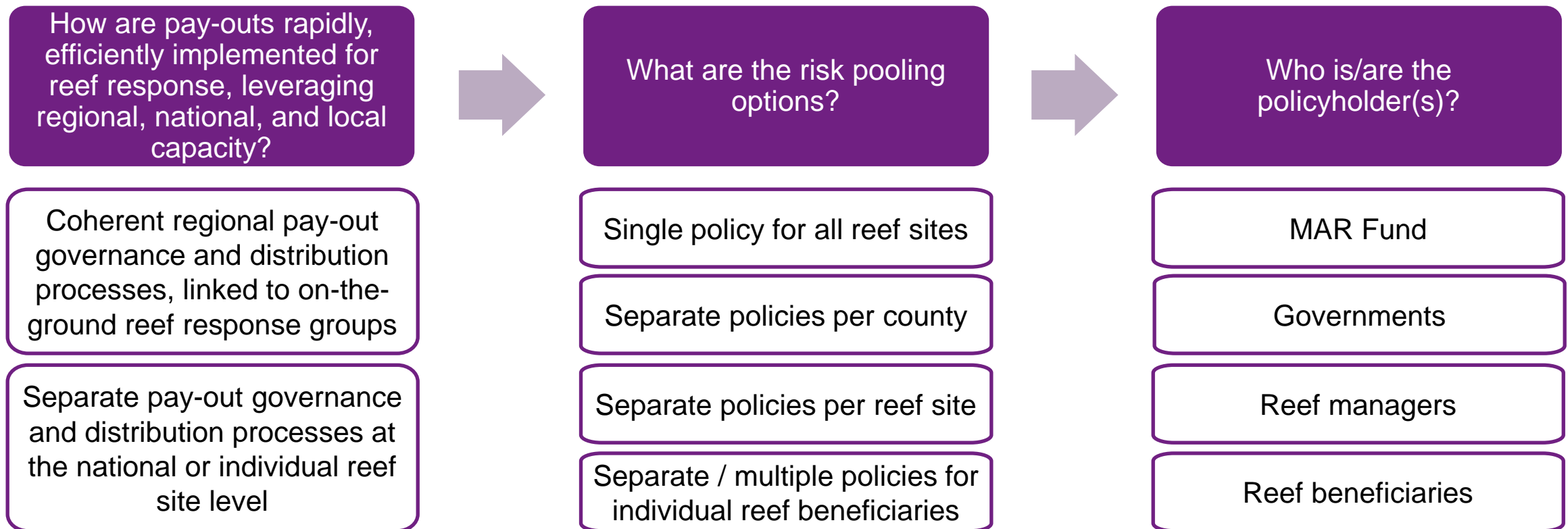


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Programme options

An insurance programme is how products are distributed and administered and how the underlying risk in those products is aggregated and funded.



Programme options: Benefits of risk pooling

Key benefits of pooling the risk of multiple reef sites under a single policy

- ✓ Minimise insurance cost by reducing annual volatility in pay-outs, which reduces the amount of capital risk-takers need to allocate to cover the extreme years which, in turn, reduces the premium price
- ✓ Minimise frictional costs with a single insurance policy placement and administration process
- ✓ Maximise operational efficiency with a coherent regional pay-out governance and distribution process, which increases the predictability of post-event response funding and incentivises more robust contingency planning
- ✓ Streamline implementation of reef response by maximising collaborative action and peer learning, contributing to stronger regional conservation outcomes
- ✓ Enable a regional premium financing strategy that recognises the MAR as a global public good

Beyond Hurricanes: Exploring the possibilities for coral reef insurance

- We recently worked with The Nature Conservancy to assess the feasibility of insuring coral reefs from a range of hazards in Florida and Hawaii, including:

Insurable	Uninsurable
Hurricanes (wind speed)	Coastal construction, overfishing, wastewater discharge, damage from diving etc
Marine heatwaves and cold-water abnormalities (SST)	Oil spills and ship grounding
Stormwater runoff (precipitation)	Coral disease
Tsunami (wave height)	Ocean acidification



- In the study, potential ways of funding insurance premiums were also explored: for example, vessel registration fees, a coral reef protection act, tourist development taxes, local government taxes, and an interlocal entity

Beyond Reefs: Protection for business model of Marine Managed Area (MMA)

Building the resilience of blue businesses, with applications across the blue economy

- Fill a hole in revenue from user fees if a major hurricane impacts significantly on tourism arrivals
 - Experience from the Caribbean demonstrates that impacts on tourism can be very significant (e.g., Granvorka & Strobl, 2013; Hurricane Maria in Puerto Rico in 2017)
- MMA user-fees are particularly vulnerable to hurricane impacts, as storm conditions may impact marine activities more heavily than net tourism
 - Fill a hole in revenue from user fees if a major hurricane impacts significantly on the ecosystem services provided by the MMA so that visitors are not willing to pay fees to dive or visit offshore areas by boat
 - Provide additional financing required for rapid reef clean up, protecting conservation outcomes
 - Provide financing to cover additional medium- to long-term conservation efforts required as a result of hurricane impacts
 - Cover physical damage or destruction of capital assets such as boats, docks, buoys etc.

