

# 1 The challenges of extending climate risk insurance to fisheries

## 2 *Author's final draft version*

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14 **To the editor** – As the frequency and intensity of storms alter in a changing climate<sup>1,2</sup>, fisheries food  
15 production systems must adapt to protect global food security and livelihoods. July 2019 saw the  
16 launch of the world's first fisheries index insurance scheme to protect against extreme weather  
17 events. Highly innovative climate risk insurance of this type offers the promise of increasing the  
18 resilience of billions of people around the world to climate-driven changes in storminess<sup>3</sup>.

19 Whilst index insurance schemes have become widespread in terrestrial agriculture for protection  
20 against extreme weather events<sup>4</sup>, the Caribbean Oceans and Aquaculture Sustainability facility  
21 (COAST) is the first for fisheries. Initially launched in St Lucia and Grenada, COAST is funded by the  
22 US State Department and relies on the specialist capabilities of the Caribbean Catastrophe Risk  
23 Insurance Facility (CCRIF SPC) and The World Bank<sup>5</sup>. COAST operates at the national, as opposed to  
24 the individual 'micro-insurance' level. Pre-defined benefits are calculated to reflect the likely  
25 national financial loss from damage to fishing vessels, gear and infrastructure caused by a hurricane.  
26 The specific trigger indices used in COAST are wave height, rainfall, wind and storm surge. Payments  
27 will reach the national finance ministries within 14 days of an index-triggering event and will be  
28 rapidly channelled to a list of pre-determined fisheries actors including individual fishers, vessel  
29 owners, fish vendors and fish processors<sup>5</sup>.

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31 While it is too early to evaluate the impacts of COAST, wider insights from agricultural index  
32 insurance and fisheries governance highlight several challenges of extending weather index  
33 insurance schemes to fisheries.

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35 Unlike agriculture, fishing is a daily pursuit with immediate outcomes. Storms do not only threaten  
36 fishing industry assets and infrastructure, but also daily production and fishers' lives. Even if financial  
37 payments for damaged or lost assets reach fishery actors quickly, lags in production may be  
38 experienced whilst vessels, engines, gear and infrastructure are repaired or replaced and market  
39 chains are re-established. A compensatory element for lost income in the short to medium term  
40 following a storm would further support recovery. It may encourage fishers to avoid the risks of  
41 fishing in extreme weather conditions. This would be dependent on fishers having access to  
42 frequently updated, locally relevant and reliable weather forecasts at sea and on land. Even with  
43 such risk mitigations, fisheries weather index insurance payments should provide for disability and  
44 loss of life to enhance the resilience of fishers and their families.

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Maladaptation is a significant concern for climate risk instruments in the agricultural domain<sup>6</sup>. In a fisheries context, the distribution of insurance payments among fishing actors is key. Disproportionately higher payments to larger vessels and insufficient provision of funds to small-scale fleets could risk negative socio-economic outcomes for small-scale fishers, and may rebalance fishing fleets towards larger vessels that have greater fishing capacity. While larger vessels may be less vulnerable to extreme weather, costs to social and environmental sustainability could place the fishery on a maladaptive path<sup>7</sup>.

Weather index insurance must not become a substitute for fisheries adaptation action or storm preparedness, as a failure to adapt threatens the long-term acceptability of extreme weather risks to underwriters<sup>8</sup>. Adaptation measures that reduce vulnerability to weather events, such as restoring mangroves<sup>9</sup>, establishing pre-storm preparation plans<sup>10</sup>, and investing in more resilient fishing vessels and gear, could be incentivised through reduced premiums. Such approaches also mitigate the risk of moral hazard. The COAST scheme seeks to incentivise sustainable fishing outcomes and improve climate resilience by making it a prerequisite for insured nations to implement the Caribbean Community Common Fisheries Policy.

Issues of equity and justice must be considered in the design of fisheries weather index insurance to avoid the risk of increasing social inequality<sup>11</sup>. This is particularly important where coastal communities are reliant on small-scale fisheries for livelihoods and nutrition<sup>12</sup>. The division of payments within a fishing community must be carefully considered to avoid more marginalised actors losing out to those who are better organized. If insurance payments are dispersed to government ministries, as is the case for COAST, national processes of governing the further dispersal of funds will be critically important in determining outcomes. The institutional rules and processes by which beneficiaries are identified, payment levels to individuals are set, and funds are dispersed will influence the equity of outcomes. These rules and processes will need to reflect individuals exiting and entering fisheries. This will be especially challenging in data-poor tropical fisheries, where small-scale and part-time fishery actors are less likely to be formally registered. Applying a gender lens to fisheries weather index insurance design will also be necessary to ensure that women's important but less visible roles in fisheries are not forgotten<sup>13</sup>.

The continued expansion of weather index insurance is supported by the 2017 launch of the InsuResilience partnership initiative between the G20 and V20, which aims to provide climate insurance protection to 400 million vulnerable and uninsured people by 2020<sup>14</sup>. Ensuring that climate adaptation, equity, justice and sustainability issues are reflected in the design and delivery of fisheries weather index insurance schemes is critical if improved resilience and desirable socio-ecological outcomes are to be achieved.

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