

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^{1,2}, 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 storminess³.

19 Whilst index insurance schemes have become widespread in terrestrial agriculture for protection
20 against extreme weather events⁴, 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 Bank⁵. 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 processors⁵.

30
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.

34
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.

45

46 Maladaptation is a significant concern for climate risk instruments in the agricultural domain⁶. In a
47 fisheries context, the distribution of insurance payments among fishing actors is key.
48 Disproportionately higher payments to larger vessels and insufficient provision of funds to small-
49 scale fleets could risk negative socio-economic outcomes for small-scale fishers, and may rebalance
50 fishing fleets towards larger vessels that have greater fishing capacity. While larger vessels may be
51 less vulnerable to extreme weather, costs to social and environmental sustainability could place the
52 fishery on a maladaptive path⁷.

53

54 Weather index insurance must not become a substitute for fisheries adaptation action or storm
55 preparedness, as a failure to adapt threatens the long-term acceptability of extreme weather risks to
56 underwriters⁸. Adaptation measures that reduce vulnerability to weather events, such as restoring
57 mangroves⁹, establishing pre-storm preparation plans¹⁰, and investing in more resilient fishing
58 vessels and gear, could be incentivised through reduced premiums. Such approaches also mitigate
59 the risk of moral hazard. The COAST scheme seeks to incentivise sustainable fishing outcomes and
60 improve climate resilience by making it a prerequisite for insured nations to implement the
61 Caribbean Community Common Fisheries Policy.

62

63 Issues of equity and justice must be considered in the design of fisheries weather index insurance to
64 avoid the risk of increasing social inequality¹¹. This is particularly important where coastal
65 communities are reliant on small-scale fisheries for livelihoods and nutrition¹². The division of
66 payments within a fishing community must be carefully considered to avoid more marginalised
67 actors losing out to those who are better organized. If insurance payments are dispersed to
68 government ministries, as is the case for COAST, national processes of governing the further
69 dispersal of funds will be critically important in determining outcomes. The institutional rules and
70 processes by which beneficiaries are identified, payment levels to individuals are set, and funds are
71 dispersed will influence the equity of outcomes. These rules and processes will need to reflect
72 individuals exiting and entering fisheries. This will be especially challenging in data-poor tropical
73 fisheries, where small-scale and part-time fishery actors are less likely to be formally registered.
74 Applying a gender lens to fisheries weather index insurance design will also be necessary to ensure
75 that women's important but less visible roles in fisheries are not forgotten¹³.

76

77 The continued expansion of weather index insurance is supported by the 2017 launch of the
78 InsuResilience partnership initiative between the G20 and V20, which aims to provide climate
79 insurance protection to 400 million vulnerable and uninsured people by 2020¹⁴. Ensuring that
80 climate adaptation, equity, justice and sustainability issues are reflected in the design and delivery of
81 fisheries weather index insurance schemes is critical if improved resilience and desirable socio-
82 ecological outcomes are to be achieved.

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