# A Real Mosaic of Solutions to Respond to Loss and Damage from Climate Change

## Anticipatory Action

The Loss & Damage Collaboration

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## Introduction

This publication is part of a series of briefs unpacking the pieces of a fit for purpose "mosaic of solutions" to respond to loss and damage from climate change. This series expands on our earlier work which presented a five-year vision for Loss and Damage under the United Nations Framework Convention on Climate Change (UNFCCC) to look beyond the international climate regime at catalysing a wider mosaic of solutions.

In the flagship paper of the series, we unpack the pieces of the mosaic. In these thematic briefs we dive deeper into existing solutions and how they can be strengthened. We also consider any reforms needed and explore emerging solutions.

This brief unpacks the role that anticipatory action can play in loss and damage response. It provides a short introduction to what anticipatory action entails, highlights a number of the challenges that developing countries face in implementing anticipatory action, and how these challenges can be addressed.

## What is anticipatory action?

Anticipatory action involves acting ahead of a predicted hazardous event.[1] In the context of climate change, it helps prevent and reduce loss and damage, preserve the dignity of those affected[2], and protect development gains by enhancing resilience.[3] It also fills a critical gap between actions to reduce loss and damage, including adaptation and disaster risk reduction, and immediate response by humanitarian actors.

Examples of anticipatory action include providing cash transfers to vulnerable households, micro-insurance programs, setting up and/or reinforcing temporary shelters, safeguarding livelihoods (e.g. by moving livestock to safety), and/or distributing emergency water, food, and other essential supplies.[4]

Anticipatory action is informed by impact-based forecasting, which merges hazard forecasts (e.g. rainfall and disease data) with vulnerability data (e.g. social and environmental factors) to predict specific impacts before they occur.[5] Effective implementation of anticipatory action ideally requires three elements:[6]

- **A pre-agreed trigger:** This consists of thresholds and decision-making rules for a specific hazard that will release financing and set actions underway (e.g. days without rain).[7] [8]
- **Pre-agreed activities:** These are activities implemented to support vulnerable communities facing a specific hazard in the window of opportunity between the trigger moment (e.g. early warning of a heatwave) and the full impact of the event (the heatwave itself).[9] [10] For example, setting up community cooling centres and distributing cash to outdoor workers to compensate for lost days of work.[11]
- **Pre-arranged financing:** This consists of funding that is guaranteed and available to be released based on the pre-agreed trigger towards the pre-agreed activities. Key sources of pre-arranged financing include the World Bank, the United Nations' Central Emergency Fund (CERF), and the International Federation of Red Cross and Red Crescent Society's (IFRC) Disaster Response Emergency Fund (DREF). Pre-arranged finance is also provided by global risk pools such as the Global Shield Against Climate Risk (Global Shield) and regional risk pools such as the Caribbean Catastrophe Risk Insurance Facility (CCRIF), the African Risk Capacity (ARC), the Pacific Catastrophe Risk Insurance Company (PCRIC), and the Southeast Asia Disaster Risk Insurance Facility (SEADRIF).

Across each of these elements, locally led planning and implementation is crucial to ensure effective anticipatory action, by helping to foster greater participation through plans that are inclusive and appropriate to local contexts.[12]

## What is the problem?

Despite pre-arranged finance reaching a record 9.4 billion USD in 2024,[13] emerging trends suggest there is a significant finance gap,[14] particularly in low-income countries.[15] Of the pre-arranged finance that is flowing, the majority is provided as loans, risking exacerbating existing debt crises in developing countries.[16]

Instruments, such as catastrophe bonds (Cat Bonds) and global and regional risk pools, require developing countries to pay premiums at the risk of receiving no payout at all when strict parametric triggers (e.g. wind speed) are not reached.[17] The World Bank's catastrophe deferred drawdown option (Cat DDO) and other instruments may come with conditionalities (e.g. implementing disaster risk reduction policy actions defined by the lender) that may not align with country priorities.[18]

Other challenges include fragmented data and weak forecasting systems, the technical and timing constraints of extremely short windows for action, exclusion of at-risk groups from planning and implementation, and the need for enhanced coordination between actors.[19] There is also a need to shift leadership mindsets from reacting to disasters to ensure readiness for disasters.[20]

## What do we need to see?

Grant based pre-arranged finance at the scale of the needs, must be available to support anticipatory action in every developing country. Developed countries must ensure the DREF is funded to at least 253 million USD by 2030[21] and the UN's CERF exceeds its 1 billion USD a year funding target.[22]

Cat Bonds and risk pool premiums must be covered by developed countries, increased tax revenues brought about by a fit for purpose UN Tax Convention[23], and innovative sources (e.g. a Climate Damages Tax, windfall tax on fossil fuel profits, as well as plastic polymer and bunker fuel levies, etc).[24]

Micro-insurance programs must be scaled up and developed countries must significantly increase funding to enable the development and implementation of these initiatives, such as the R4 Rural Resilience Initiative (R4) Initiative implemented by the World Food Programme (WFP). Data, forecasting, and early warning gaps must be closed. Communities must drive planning and implementation of anticipatory action. Coordination between relevant actors must also increase. Table 1 unpacks existing anticipatory action solutions to prevent and reduce loss and damage and how they should be strengthened.

Table 1: **Strengthening existing anticipatory action solutions to prevent and reduce loss and damage.**

| FINANCIAL INSTRUMENT | HOW DOES IT WORK? | WHAT ARE THE ISSUES? | WHAT CHANGES ARE NEEDED? |
|---|---|---|---|
| **Global and Regional Risk Pools** | Risk pools are financial mechanisms where countries contribute premiums into a shared fund to cover potential disasters. They typically use parametric insurance, which releases payments based on pre-defined triggers (e.g., hurricane wind speed). | The uninsurability of slow onset climatic processes and many types of non-economic loss and damage, makes risk pools largely unsuited to address most loss and damage. Developing countries are finding that risk pools are not paying out when strict parametric triggers are not met despite significant loss and damage occurring.[25] When payouts are made, they frequently cover just a fraction of costs despite high premiums being paid.[26] | Global and regional risk pools can continue to play an important role in rapidly disbursing funds after an extreme weather event. To do so, they must avoid strict parametric triggers and significantly increase the size of payouts while ensuring premiums remain affordable. Developed countries must cover the cost of premiums for developing countries. Developing countries may also consider utilising increased tax revenues brought about by a fit for purpose UN Tax Convention[27] and innovative sources (e.g. a Climate Damages Tax, windfall tax on fossil fuel profits, and plastic polymer and bunker fuel levies, etc)[28] to pay for premiums. |

| FINANCIAL INSTRUMENT | HOW DOES IT WORK? | WHAT ARE THE ISSUES? | WHAT CHANGES ARE NEEDED? |
|---|---|---|---|
| **World Bank's Catastrophe Deferred Drawdown Option (Cat DDO)** | A World Bank Development Policy Loan with Cat DDO is a contingent credit line that provides immediate liquidity to International Bank for Reconstruction and Development (IBRD) member countries in the aftermath of a what the World Bank categorises as a catastrophic natural disaster (e.g. earthquake or hurricane) or a public health emergency (e.g. cholera outbreak). Cat DDOs are agreed in advance and can be drawn down quickly. Before approval of a Cat DDO, the recipient country must agree to a set of policy actions. Often, these are related to maintaining disaster risk management frameworks, disaster risk reduction, or other forms of resilience-building.[29] | Most Cat DDO's are loans that increase the debt burden of developing countries. [30]<br><br>The maximum amount for a Cat DDO is generally the lower of 250 million USD or 0.5 percent of GDP.[31] Agreed policy actions may be inflexible and not inline with national priorities. Failure to maintain policy actions may result in the suspension of drawdowns.[32] Funds are only accessible upon the declaration of a state of emergency. This means that smaller high-frequency extreme weather events (e.g. floods) and slowonset climatic processes may not be covered.[33] | Cat DDO's would not be required if the Fund for Responding to Loss and Damage (FRLD) was capitalised by developed countries to the scale of the needs of developing countries— at least 400 billion USD a year by 2035.[34] Until the Fund is capitalised at scale, the World Bank must prioritise grant based Cat DDO's and increase the amount that can be paid out into the billions to meet the scale of loss and damage needs. |
| **Catastrophe Bonds (Cat Bonds)** | Cat Bonds transfer financial risk connected with exposure to disasters to capital markets. Cat Bonds frequently use a parametric trigger to release non-repayable funds following a disaster. For example, in November 2025, the Government of Jamaica received a 100 percent payout of its 150 million USD Cat Bond arranged by the World Bank as a result of the loss and damage caused by Hurricane Melissa.[35] | Developing countries use their own money to pay premiums for Cat Bonds. Jamaica's annual payments were 10.5 million USD[36] for the Cat Bond it renewed in 2024.[37] Payments are too small. The 150 million USD payout is just 1.7 percent of the estimated 8.8 billion USD in loss and damage caused by Hurricane Melisa.[38] Strict parametric triggers can result in no payout. In 2024, Hurricane Beryl cost Jamaica between 85 to 200 million USD[39] in economic loss and damage. However, its Cat Bond did not payout because wind speeds were not high enough.[40] | Cat Bonds can play a small role in addressing loss and damage, but should be paid for by developed countries, increased tax revenues brought about by a fit for purpose UN Tax Convention[41] and innovative sources (e.g. a Climate Damages Tax, windfall tax on fossil fuel profits, plastic polymer and bunker fuel levies etc)[42]. |

| FINANCIAL INSTRUMENT | HOW DOES IT WORK? | WHAT ARE THE ISSUES? | WHAT CHANGES ARE NEEDED? |
|---|---|---|---|
| **IFRC: Disaster Response Emergency Fund (DREF) — Anticipatory Pillar** | The DREF is a rapid-release funding mechanism established to provide immediate financial support to National Red Cross/ Red Crescent Societies for emergency response.[43]The DREF supports anticipatory action through its dedicated Anticipatory Pillar, which automatically releases pre-agreed funding to National Societies when specific hazard triggers are reached.[44] | The DREF has scaled up anticipatory action to approximately 15.39 million USD.[45] However, funding is not enough.[46] | The DREF aims to scale up anticipatory action allocations to at least 25 percent by 2030.[47] The IFRC also plans to double the size of the DREF from its current 130 million USD to 253 million USD by 2030.[48] Developed countries must increase commitments to ensure the DREF can scale up anticipatory action. |
| **Central Emergency Response Fund (CERF)** | CERF is the UN's global emergency fund established to provide rapid, life-saving assistance to people affected by what the UN categorises as natural disasters (e.g. tsunamis and droughts), armed conflicts, or underfunded crises.[49] CERF-funded anticipatory action frameworks cover both climate-related events and disease outbreaks.[50] | In November 2025, CERF's level of commitment to anticipatory action reached just 124.7 million USD.[51] While the CERF aims to provide 1 billion USD annually, only allocated 435 million USD in 2025 (as of 9 December).[52] | Developed countries must increase commitments to the CERF to meet the 1 billion USD annual target. This will allow the CERF to scale up anticipatory action. |

| FINANCIAL INSTRUMENT | HOW DOES IT WORK? | WHAT ARE THE ISSUES? | WHAT CHANGES ARE NEEDED? |
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| **Micro-Insurance** | Examples of micro insurance include the R4 Rural Resilience Initiative (R4) and UN Capital Development Fund (UNCDF) micro-insurance product launched in Vanuatu.[53] R4 is a strategic partnership between the UN World Food Programme and Oxfam America that equips smallholder farmers to manage climate risks. It combines improved natural resource management, microinsurance, savings and credit —to enhance food security and build long-term resilience against loss and damage.[54] Vanuatu's micro-insurance product was developed by the Pacific Insurance and Climate Adaptation Programme (PICAP). It provides a quick injection of relief funds within 10-14 days following a disaster, and is aimed at Vanuatu's smallholder farmers, fishers, micro, small, and medium enterprises, and people with disabilities.[55] Funds are transferred directly to the mobile money wallets of policy holders, or to their bank accounts via internet banking.[56] The product is available in two price ranges: one offering a maximum coverage of 400 USD and the other of 800 USD at a premium of 10 percent per annum for both.[57] | R4 requires funding to scale up to reach more households. Certain crop types and loss and damage events (excess rain) were not covered in the past.[58] Key lessons from the evaluation of R4 between 2017 and 2022 suggest ways to improve the initiative.[59]Vanuatu's micro-insurance product builds on the successful implementation of a similar product on Fiji, the use of which has since been expanded with support from UNCDF and the InsuResilience Solutions Fund.[60] In the pilot phase, Vanuatu's micro-insurance product paid out 23.6 thousand USD for tropical cyclones Judy and Kevin in March, 2023 to 84 beneficiaries, out of the 122 that bought the product.[61] To scale up, Vanuatu's micro-insurance product needs a significant increase of funding. | Micro-insurance programs must be scaled up. Developed countries must significantly increase funding directly to developing countries developing micro-insurance products and to programs and funds supporting their development. Micro-insurance premiums must be subsidised to ensure that low-income households, particularly those in frequently marginalised groups (e.g. Indigenous Peoples), are covered.[62] |

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