



PACIFIC ISLANDS  
FORUM SECRETARIAT

# An Overview of Climate and Disaster Risk Financing Options for Pacific Island Countries



Pacific Resilience  
Program

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# FOREWORD



Given the nature of current and future threats to Pacific societies, it is abundantly clear that protecting people, building robust social protection systems, and strengthening public financial management systems, must be at the heart of our efforts to build risk resilience and increase self-reliance.

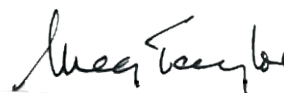
The ability of Pacific island countries to effectively coordinate and prioritise the range of investments and risk reduction activities required to enhance national resilience to health crisis, climate change and disaster events will be largely dependent on national capacity to assess, understand, and anticipate interrelated threats. In the immediate term, this understanding can help Pacific governments, people, and businesses to anticipate changing risks and put in place contingency measures to reduce exposure to shocks. Over the long-term, this understanding will ultimately shape and determine how Pacific island countries prioritise and design public policy and invest in risk management.

Pacific island countries continue to bear the brunt of the devastating impact of climate change-related disaster events reflected in the damage and loss incurred. For example, the 2015 Tropical Cyclone Pam in Vanuatu had estimated damage and losses of about 64% of its 2013 GDP, and Fiji about 31% of its 2014 GDP due to Tropical Cyclone Winston in 2016. These estimates do not capture the full extent of the non-economic losses experienced for the loss of life, or the indirect long-term impacts of such unprecedented events on the communities, ecosystems or economy.

In light of these mounting challenges, the Pacific Islands Forum Secretariat (PIFS), following the request of Pacific leaders, continues to focus our expertise and resources to support Pacific island countries to strengthen their resilience to the implications of a changing climate. PIFS is well placed to act as a convenor and a platform to support the sharing and exchange of knowledge. Our efforts focus on strengthening the coordination between government, civil society and private sector actors in pursuit of their respective resilient development objectives and needs. This report, 'An Overview of Climate and Disaster Risk Financing Options for Pacific Islands Countries', seeks to contribute to the ongoing efforts to improve financial protection in the face of rising risks. This report provides an overview of financial products that are available to Pacific island countries. When paired effectively with policies to support the protection of people and the fundamental reduction of risks, these products can play a role in improving the overall resilience of our Pacific island countries.

While finance alone will not solve the problems we face, it is also clear that financial instruments and products can be an effective means to bridge the gap between vulnerabilities and resilience-building objectives. Contingent financing arrangements, the ability to transfer risk, and the accessibility of finance for increased national risk retention, are the imperative for Pacific governments, communities, and businesses as they seek to offset rising annual costs and losses. The report builds on an initial account of financial protection products that was shared with Forum Economic Ministers at their meeting in 2017.

I commend the report for wide use as a resource to help build the resilience of our region.

A handwritten signature in black ink that reads "Meg Taylor". The signature is fluid and cursive, written over a light blue horizontal line.

**Secretary General  
Pacific Islands Forum  
Meg Taylor, DBE**

## Acknowledgements

This report has been compiled through research conducted by the Pacific Islands Forum Secretariat (PIFS) through the Pacific Resilience Program (PREP). The PREP involves a series of national projects based in the Republic of the Marshall Islands, Samoa, Tonga and Vanuatu as well as regional projects managed by the Pacific Community (SPC) and PIFS. Funding for the PREP project in PIFS is provided by the World Bank through the International Development Association and the Global Environment Facility Special Climate Change Fund.

The report is the result of extensive research and consultation undertaken in 2019 and 2020. We acknowledge with gratitude the enduring effort of Daniel Lund, the author of this report and former Resilient Development Advisor for the PREP project. This report has benefitted from the extensive inputs and support provided by colleagues at the World Bank and we would like to thank Habiba Gitay, Luis Alton, Akosita Drova, Ulle Lohmus and Katherine Baker.

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Finally, sincere gratitude is expressed for the guidance and encouragement provided by Mosese Sikivou, PREP Regional Coordinator, Exsley Taloiburi, PIFS Climate Finance Advisor/Resilience Team Leader, and Zarak Khan, PIFS Director of Programmes & Initiatives.

## Acronyms and Abbreviations

|         |   |
|---------|---|
| ADB     | Asian Development Bank  |
| CAT-DDO | Catastrophe Deferred Drawdown Option  |
| CCRT    | Catastrophe Containment and Relief Trust  |
| CERC    | Contingency Emergency Response Component (IDA)  |
| CERF    | Central Emergency Response Fund (UN)  |
| CDF     | Contingent Disaster Financing (ADB)   |
| CRW     | Crisis Response Window (IDA)  |
| DRCF    | Disaster Rehabilitation and Containment Facility (Fiji)   |
| DREF    | Disaster Relief Emergency Fund (IFRC)   |
| ECAL    | Environment and Climate Change Adaptation Levy (Fiji)   |
| FbA     | Forecast-based Action   |
| FJD     | Fiji Dollars  |
| FRDP    | Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management 2017 – 2030 |
| GDP     | Gross Domestic Product  |
| GFDRR   | Global Facility for Disaster Reduction and Recovery   |
| IBRD    | International Bank for Reconstruction & Development (part of the World Bank)  |
| IDA     | International Development Association (part of the World Bank)  |
| IMF     | International Monetary Fund   |
| IOM     | International Organization for Migration  |
| IRM     | Immediate Response Mechanism  |
| NDRF    | Natural Disaster Rehabilitation Facility (Fiji)   |
| PCRAFI  | Pacific Catastrophe Risk Assessment and Financing Initiative  |
| PCRIC   | Pacific Catastrophe Risk Insurance Company  |
| PICs    | Pacific island countries  |
| PIFS    | Pacific Islands Forum Secretariat   |
| PREP    | Pacific Resilience Program  |
| PRGT    | Poverty Reduction and Growth Trust (IMF)  |
| RCF     | Rapid Credit Facility (IMF)   |
| RFI     | Rapid Financing Instrument (IMF)  |
| SPC     | Pacific Community   |
| TC      | Tropical Cyclone  |
| UFE     | Underfunded Emergency   |
| UN      | United Nations  |
| UNESCAP | United Nations Economic and Social Commission for Asia and the Pacific  |
| UNISDR  | United Nations Office for Disaster Risk Reduction (renamed as UNDRR in 2019)  |
| UNOCHA  | United Nations Office for the Coordination of Humanitarian Affairs  |
| USD     | United States Dollars   |



## Executive Summary

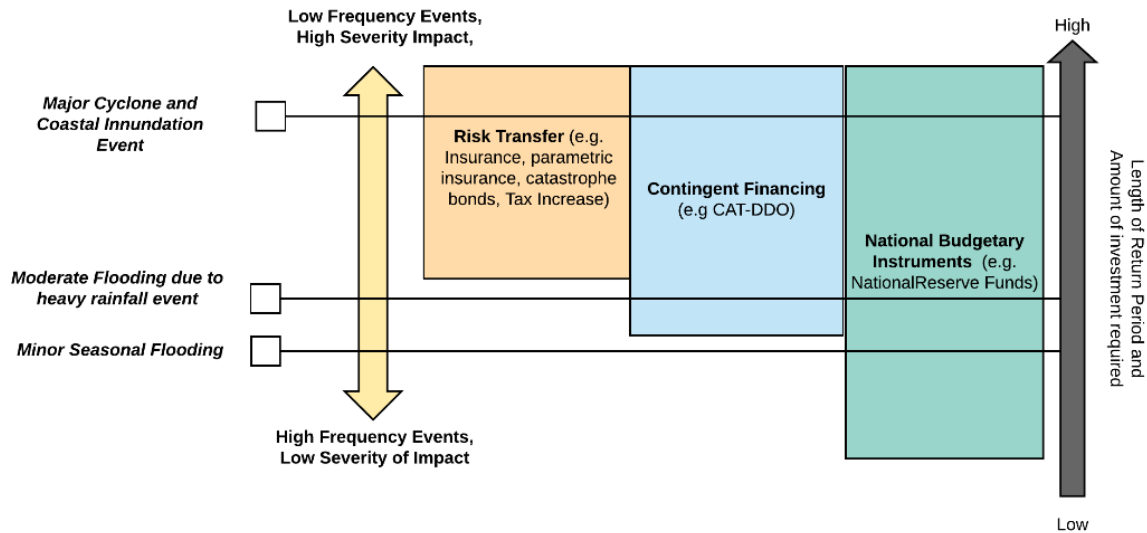
For Pacific island countries (PICs), the impacts and implications of climate change and disaster events threaten the wellbeing and livelihoods of Pacific people, continue to erode national development gains, and present long-term risks to the foundations of Pacific economies. Current trends and climate change projections suggest that the interactions between the dynamics of climate change and hazard events in the Pacific will continue to increase the likelihood of disaster events occurring and drive up the potential for more extreme slow onset risks, such as drought. As a result, PICs are increasingly required to consider short and immediate strategies for addressing their risk exposure alongside longer-term resilience-building efforts such as infrastructure hardening. The confluence of environmental changes and hazards with other transboundary threats such as pandemics, localised health crises, and economic volatility, further increase the rationale for small vulnerable economies to put in place pre-emptive financing arrangements to manage increasing risks. Climate and disaster risk financing instruments are now being employed and developed by PICs to help buffer shocks and complement existing risk reduction efforts. This report summarises the types of financial instruments as well as specific products and arrangements that are available to support climate and disaster risk management objectives in PICs.

### ***Regional Trends***

To strategically address climate and disaster risks, PICs are using a variety of financial instruments and arrangements to help pre-empt and offset the rising costs, damages and losses associated with climate change and disaster events. The ability of PICs to manage the costs of increasingly destructive disaster events through national contingency funds and reserves is limited across the region. Only a few PICs have dedicated disaster response funds that receive systematic annual replenishment. Most PICs have used the range of contingent financing instruments and options available through international development banks and the overall uptake of these instruments is rising in the region. Historically, PICs have relied heavily on ad hoc international emergency finance to support emergency responses when major disasters occur. Though this remains the case, over the last ten years, PICs have recognised the need to increase access to reliable methods of risk transfer. As a result, there has been growth in the number of initiatives and activities focused on increasing access to micro-insurance and improving insurance penetration. The availability of new products, such as sovereign-level parametric insurance, has improved the ability of PIC governments to access rapid financial liquidity when pre-agreed triggers are met.

Most PICs have cited an intention to engage more products to help address current and emerging financing gaps. With these options available to PICs, and a greater emphasis on anticipatory approaches to risk management across national and regional policies, efforts to better use available instruments have increased. To address different hazard events and their varying impacts, PICs require a range of different types of financial instruments. By layering these products and instruments, users can ensure there are arrangements in place to address a full range of risks – from low-frequency high-impact events to frequent low-impact events.

**Risk Layering: Applicable combinations of risk finance instruments in relation to the severity and frequency of hazard events**



Pacific island countries have the opportunity to further protect people, businesses and economies from climate change and disaster risks by strategising their national approaches to climate and disaster risk finance. By considering different types of instruments, time frames and scales of risk, there is potential to develop a strategic and optimal combination of products. The figure above shows national approaches to climate and disaster risk financing are most effective when they combine products and instruments that help to increase preparedness and risk retention, while also providing a facility to transfer risk.

Existing national disaster management systems and disaster response capacity must be considered when assessing different approaches to climate and disaster risk financing to help ensure there are adequate arrangements for dispersing and programming finance effectively. PICs continue to prioritise climate and disaster risk financing instruments and approaches that complement their national policies and risk context. In addition to offsetting and buffering financial risks, innovative risk financing products can also promote livelihood adaptation and prevent losses to development gains.

The following lessons may assist policy-makers to capitalise on the benefits of climate and disaster risk finance:

- 1) **A strong analytical basis is required to support the further development of appropriate climate and disaster risk financing arrangements in the Pacific:** Further analysis of current and potential climate and disaster risks is required to produce the breadth of data and models needed to design new risk financing instruments and products. With more information on how different risks and hazards are likely to interact, there is more potential to design financing arrangements that respond directly to national needs. Without a sufficient and dynamic analytical basis from which to design financing approaches there is potential that financing arrangements could become inadequate, inefficient, or inappropriate as climate and disaster risks evolve.
- 2) **A layered approach to climate and disaster risk financing instruments is required to address the range of risks and financial protection gaps that Pacific island countries face:** Due to the range of different risks faced by PICs and the differing severity, scale and coverage involved with specific events, it is increasingly important to layer instruments and products to increase the coverage. This will help to address gaps in protection.

- 3) **Increasing the availability and uptake of low-cost livelihood protection insurance is crucial for building socio-economic resilience in Pacific island countries:** Climate change impacts and disaster events are a distinct threat to human wellbeing and livelihoods in the Pacific. Due to the high vulnerability of many PICs, there is a need to increase the ability of these communities, groups and individuals to access low-cost insurance and increase their access to rapid and predictable support. National approaches to disaster risk management are increasingly required to address the need for greater social safety nets and many PICs are in the process of researching or developing products and financial options aimed at supporting vulnerable communities. International best practice suggests that low-cost insurance mechanisms which deploy finance to remote communities are an effective way to help shield vulnerable groups from risks and shocks that may exacerbate their vulnerability.
  
- 4) **Pacific island countries have begun to improve their capacity to use, access and navigate available products and instruments through the development of national climate and disaster risk finance strategies:** To effectively address and consider the above recommendations, PICs will benefit from developing national strategies to guide the use, combination and implementation of climate and disaster risk financing instruments. These strategic frameworks can guide the effective combination of financing instruments and help direct the efforts of the various national and international stakeholders involved with climate and disaster risk finance product development.



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## Introduction

**This report provides a snapshot of the risk financing instruments, products and options that are in use or accessible to Pacific island countries in 2020.**

**The Pacific Islands Forum Secretariat, through the World Bank-funded Pacific Resilience Program, has developed this knowledge product for the benefit of Pacific island countries to support the ongoing use and development of appropriate climate and disaster risk financing tools. Such tools are increasingly required as a means to complement and support existing efforts to manage climate and disaster risks and build socio-economic resilience in the Pacific. This report has been developed in support of the *Framework for Resilient Development in the Pacific (FRDP)* and its core goals to ‘*promote integrated adaptation and risk reduction*’ and ‘*strengthen disaster preparedness, response and recovery*’.<sup>1</sup>**

*Climate and Disaster Risk Finance* is an umbrella term for the range of financial instruments that are designed to assist individuals, communities, private sector stakeholders and governments to respond to potential future threats or recent disaster events. Specialised financing instruments are increasingly important as anticipatory tools for managing climate change and disaster-related events and impacts. These financial instruments can serve to complement existing national risk reduction efforts aimed at reducing and offsetting the risks faced by vulnerable people, communities, businesses and governments.

### **The Global Policy Context**

The *Sendai Framework for Disaster Risk Reduction 2015-2030* recognises the need to increase the use of risk finance and specifically promotes ‘*mechanisms for disaster risk transfer and insurance, risk-sharing and retention and financial protection*’.<sup>2</sup> The *Paris Agreement* recognises risk insurance facilities, climate risk pooling, and other insurance solutions as key areas for advancing the ‘*cooperation and facilitation*’ needed to help address loss and damage’.<sup>3</sup> These global frameworks and agreements have helped to increase the recognition of the need to develop and advance new and innovative financial instruments for managing and preventing losses from disaster events and climate change impacts.

Under the *United Nations Framework Convention on Climate Change*, loss and damage associated with the impacts of climate change is characterised in terms of both *economic* and *non-economic* losses. Climate-driven or exacerbated slow onset events and phenomena such as ocean acidification, soil salinisation, sea-level rise, prolonged drought, desertification, average temperature rise, land degradation, biodiversity loss and glacial retreat, are increasingly being

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<sup>1</sup> Pacific Community, Secretariat of the Pacific Regional Environment Programme, Pacific Islands Forum Secretariat, UNDP, UNISDR, University of the South Pacific n.d.)

<sup>2</sup> Sendai Framework 30(b)

<sup>3</sup> Paris Agreement (2015), Article 8, (4F).

assessed and considered in relation to the *micro, meso, and macro*-level impacts these processes and events will have on our societies and economies.

Climate and Disaster risk financing instruments can complement national efforts to reduce both losses in income and damage to physical assets as well as reduce non-economic losses (for instance, through financial mechanisms to help reduce disruption to health care provision, or finance to enable pre-emptive measures to reduce risk to individuals).

## The Pacific Context

Over the last decade, the frequency and severity of disaster events experienced in the Pacific region have increased.<sup>4</sup> This trend is expected to continue in the Pacific over the coming decade as climate change-induced temperature rise, ocean warming, and accelerating sea-level rise increase the potential severity of disaster events.<sup>5</sup>

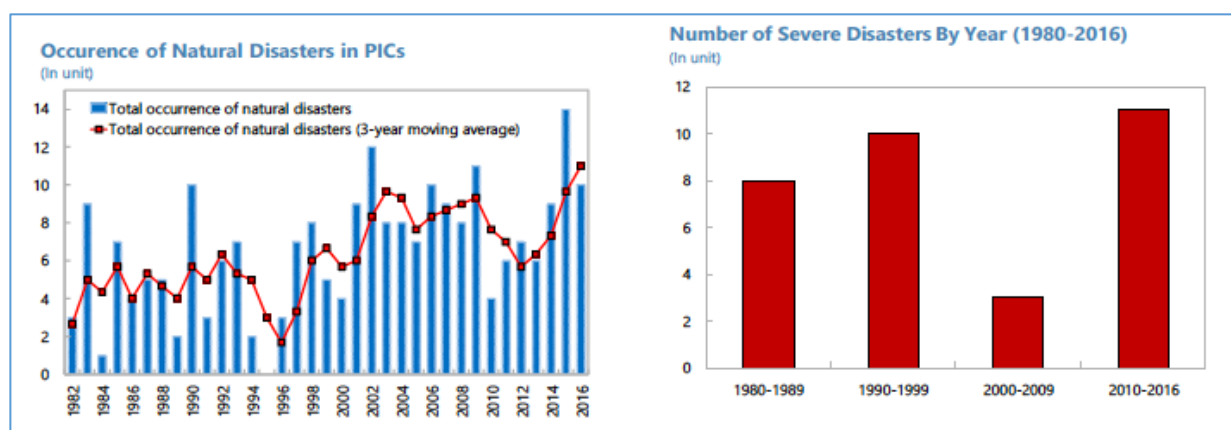


Figure 1: Occurrence of Disasters in PICs 1982-2016, EM-DAT, IMF, 2019

The Pacific region continues to experience a low regional average GDP growth rate.<sup>6</sup> This is linked to the impacts of disaster events which generate annual losses for both the public and private sectors and are estimated to reduce GDP growth in the Pacific region by an average of 1.8 percentage points.<sup>7</sup> Severe disaster events have contributed to high donor dependency in the region, reduced debt sustainability and, in some cases, eroded national fiscal and trade balances.<sup>8</sup>

The financial losses experienced by governments and individuals in the Pacific in recent years have been significant and, in some cases, resulted in long-term damage to economic productivity, livelihoods and social welfare. For example, in 2015 Tropical Cyclone Pam caused widespread damage to Vanuatu, displacing an estimated 65,000 people and negatively impacting the

<sup>4</sup> (Nishizawa, Roger and Zhang 2019) and (Asian Development Bank 2019)

<sup>5</sup> (World Meteorological Organisation 2019), (IPCC, 2019), (Kulp and Strauss 2019)

<sup>6</sup> (Le Borgne and Medas 2007) (Lee and Nguyen 2018)

<sup>7</sup> (Lee and Nguyen 2018)

<sup>8</sup> (Lee and Nguyen 2018)

livelihoods of over 80% of Vanuatu’s rural population.<sup>9</sup> The 2015-2016 drought in the Republic of the Marshall Islands caused significant disruptions to national production, with a loss of 3.4% of RMI’s GDP. In 2016, Cyclone Winston struck Fiji and caused damage and losses equivalent to 31% of Fiji’s GDP.<sup>10</sup> In each case, long term impacts on human health, education and welfare, as well as significant long term damage to the environment, illustrated the importance of increasing national preparation for severe and unprecedented environmental hazards.<sup>11</sup> Table 1 shows recent disasters that eroded both GDP and hard-won development gains in recent years.

*Table 1: GDP impacts of recent disaster events in the Pacific. Adapted from (Asian Development Bank 2019)*

| Country | Year | Disaster Type          | Estimated Impact of Disaster as % of GDP loss |
|---------|------|------------------------|---|
| Samoa   | 2009 | Earthquake and Tsunami | 22%   |
| Samoa   | 2012 | Cyclone Evan           | 28%   |
| Fiji    | 2012 | Cyclone Evan           | 2.6%  |
| Vanuatu | 2015 | Cyclone Pam            | 64.1%   |
| Fiji    | 2016 | Cyclone Winston        | 31% <sup>12</sup>                             |
| Tonga   | 2018 | Cyclone Gita           | 38%   |

The projected intensification of hazard events due to climate change<sup>13</sup> requires targeted efforts to improve financial, structural, social, and economic resilience.

Table 2 shows Pacific island countries face both the high likelihood of disaster events occurring annually as well as a high probability of significant or even catastrophic impacts on Pacific people as well as to GDP. Across Melanesia, the likelihood of a disaster occurring in any given year is very high (50-80%). There are several PICs in which disaster events may affect 80-100% of the population due to the limited geographical spread of the population. Many Pacific island economies may experience singular events with damages that significantly exceed national GDP.

<sup>9</sup> (Government of Vanuatu 2015)

<sup>10</sup> Government of Fiji, World Bank, 2016

<sup>11</sup> (Lal, Singh and Holland 2009) (Nishizawa, Roger and Zhang 2019)

<sup>13</sup> IPCC, 2018

Table 2: Projected annual likelihood and impacts of disaster events in the Pacific. Source EM-DAT 2018 and table adapted from (Lee and Nguyen 2018)

| Country                | Annual likelihood of disaster occurring (% chance) | Damage (%GDP median estimate) | Damage (%GDP maximum est.) | Population affected (median est. %) | Population affected (maximum est. %) |
|------------------------|--|-------------------------------|----------------------------|-------------------------------------|--------------------------------------|
| Fed. States Micronesia | 24.3   | 1.8                           | 3.5                        | 5.7                                 | 97.8                                 |
| Fiji                   | 70.3   | 1.3                           | 10.1                       | 0.8                                 | 39.7                                 |
| Kiribati               | 10.8   | n/a                           | n/a                        | 0.8                                 | 100                                  |
| Marshall Is.           | 16.2   | n/a                           | n/a                        | 1.1                                 | 38.3                                 |
| Palau                  | 2.7  | n/a                           | n/a                        | n/a                                 | n/a                                  |
| Papua New Guinea       | 81.1   | 0.1                           | 1.3                        | 0.4                                 | 32.7                                 |
| Samoa                  | 27   | 21                            | 161.8                      | 1.6                                 | 6.7                                  |
| Solomon Is.            | 51.4   | 8                             | 14                         | 1.1                                 | 53.8                                 |
| Tonga                  | 29.7   | 4.9                           | 28.2                       | 3.4                                 | 100                                  |
| Tuvalu                 | 16.2   | n/a                           | n/a                        | 42                                  | 42.6                                 |
| Vanuatu                | 56.8   | 18                            | 131.2                      | 5.3                                 | 87                                   |

Post-disaster needs assessments conducted over the last two decades show that Pacific governments continue to face significant financing gaps post-disaster and that the process of managing financial liabilities can deteriorate the government’s fiscal position and increase public debt as well as the cost of borrowing.<sup>14</sup> In some cases, there is potential for these circumstances to decrease national credit ratings and raise the cost of finance.<sup>15</sup> The overall economic impact of climate change and disaster events on PICs is significant<sup>16</sup> and increasing.<sup>17</sup>

Pacific governments are exploring ways to lessen national exposure and vulnerability to risks through a mixture of financing instruments, holistic adaptation measures, and increased investment in the resilience of critical infrastructure.

In addition to the major infrastructure investments and disaster risk reduction activities required across the region to mitigate climate and disaster risks, there is also a need to anticipate potential damage and losses.<sup>18</sup> Pacific island countries have progressed national and regional efforts to integrate both disaster risk management and climate change adaptation into national development processes through the *Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management 2017-2030*

<sup>14</sup> (Asian Development Bank 2018)

<sup>15</sup> (Lal, Singh and Holland 2009)

<sup>16</sup> (Asian Development Bank 2013), (Asian Development Bank 2018) (GFDRR 2015)

<sup>17</sup> (Masson-Delmotte, Zhai and Et. Al. 2018) (Nishizawa, Roger and Zhang 2019) (Asian Development Bank 2013)

<sup>18</sup> (Lucas 2015)



(FRDP). In reducing the delineation between climate change adaptation, disaster risk management and economic development agendas, the Pacific has sought to better integrate social and economic development goals and risk reduction objectives. The FRDP recognises the need to create complementarity between financial instruments, national investments, and international finance streams to protect and improve socio-economic outcomes. In addition to the need to consider the fiscal buffers and financial capacity of governments to respond to climate and disaster-related events, impacts and shocks, it is important that the full burden of financing disaster response, recovery and reconstruction is shared. Individual homeowners, farmers, small to medium enterprises, financial institutions and pension funds are highly exposed to physical risks, investment uncertainty, supply chain disruptions and infrastructure damage. They will require greater access to both risk financing<sup>19</sup> and resilience-building interventions. Due to the high average annual losses from disaster events experienced by PICs the need to introduce specialised financial instruments to offset financial risks and support preparedness and response is increasingly urgent.

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<sup>19</sup> (Asian Development Bank 2013)



*Damage to a village in Viti Levu following severe tropical cyclone Winston in 2016*

*(Daniel Lund)*

## Climate and Disaster Risk Financing Typologies

Climate and disaster risk financing tools can help to reduce the financial burden of disaster and climate-related risks in vulnerable countries when combined with robust national risk management efforts.<sup>20</sup> Risk financing instruments reduce the burden of environmental and economic shocks on sovereign governments, private companies, communities and individuals. The range of financial instruments under the umbrella of risk finance include, but are not limited to, grants, bonds, contingent finance, insurance products, national reserve funds, regional funds and risk pools, taxes, loans and debt relief schemes. These instruments, products and mechanisms can improve financial resilience through the additional financial liquidity needed to help absorb financial losses, or by pooling shared resources to manage climate and disaster risks. Some risk financing instruments are designed to quickly increase the available financial liquidity required to fund a pre-disaster or post-disaster response whilst others are designed to help recoup or cover costs over a longer-term time frame. Through insurance mechanisms and insurance-linked securities, there is potential to transfer financial risk and reduce financial burdens. Rapidly deployed financing and protocols can be used to trigger early anticipatory actions that prevent and reduce risk.

One of the most important defining characteristics in relation to risk finance is the **timeframe and mode** in which funds are disbursed. The effectiveness of risk finance is highly dependent on timeliness as finance is required for different purposes during different phases in the traditional disaster cycle (risk reduction, response/relief, recovery, reconstruction).



Figure 2: Timeframe versus resource requirements in relation to the different disaster phases of the disaster cycle (World Bank 2017)

Climate and disaster risk finance is further differentiated in relation to the ultimate function of the product or instrument and whether it is designed to **reduce, help retain, or transfer risk**. Drawing on these different functions, the following categories are used to structure this report:

<sup>20</sup> (GFDRR 2014)

1. **Specialised financial instruments to support risk reduction and preparedness** are instruments that support pre-emptive actions designed to help minimise the potential for losses before an event occurs (ex-ante). Forecast-based financing, for instance, refers to finance which is triggered by risk forecasts or early warning systems. Forecast-based finance is deployed ahead of an event and used to help people prepare for and avoid risk before or during a hazard event. A further example is pre-emptive cash transfers to individuals to help support human mobility and resilience before or during hazard events.
2. **Risk Retention products and instruments** help users to absorb the cost of risks. Examples of risk retention instruments are national reserve funds, contingency budgets, dedicated disaster funds, and externally arranged contingent financing instruments.
3. **Risk Transfer products** are market-based financial arrangements designed to share or transfer risk burdens to a wider pool of stakeholders or investors. These products help to provide additional financial liquidity in the event of a disaster. The most common examples of risk transfer are indemnity-based insurance policies, parametric insurance products, and catastrophe bonds. These types of risk transfer instruments reduce the financial burden shouldered by policyholders or bond issuers by helping to ensure that, should a pre-agreed event or set of circumstances occur, a certain proportion of economic losses are transferred to external financial institutions and investors.
4. **International Emergency Financing** refers to the existing international funds, financing window, credit lines and grants that can be accessed following a disaster event should specific criteria or donor requirements be met. The ability to access these types of finance is uncertain. Internationally derived finance can help to support and increase national risk retention.
5. **Post-Event Policy Options** are ways in which governments can seek to repurpose and raise funds after an event has occurred. For instance, through new taxes or other revenue creating policies. These reactive options are usually less favourable to pre-emptive and standing policy arrangements and are not covered in detail by this report.



Figure 3 shows how risk finance instruments can be organised in relation to the typologies above and the timeframe in which they are arranged

## Climate and Disaster Risk Finance: A Typology

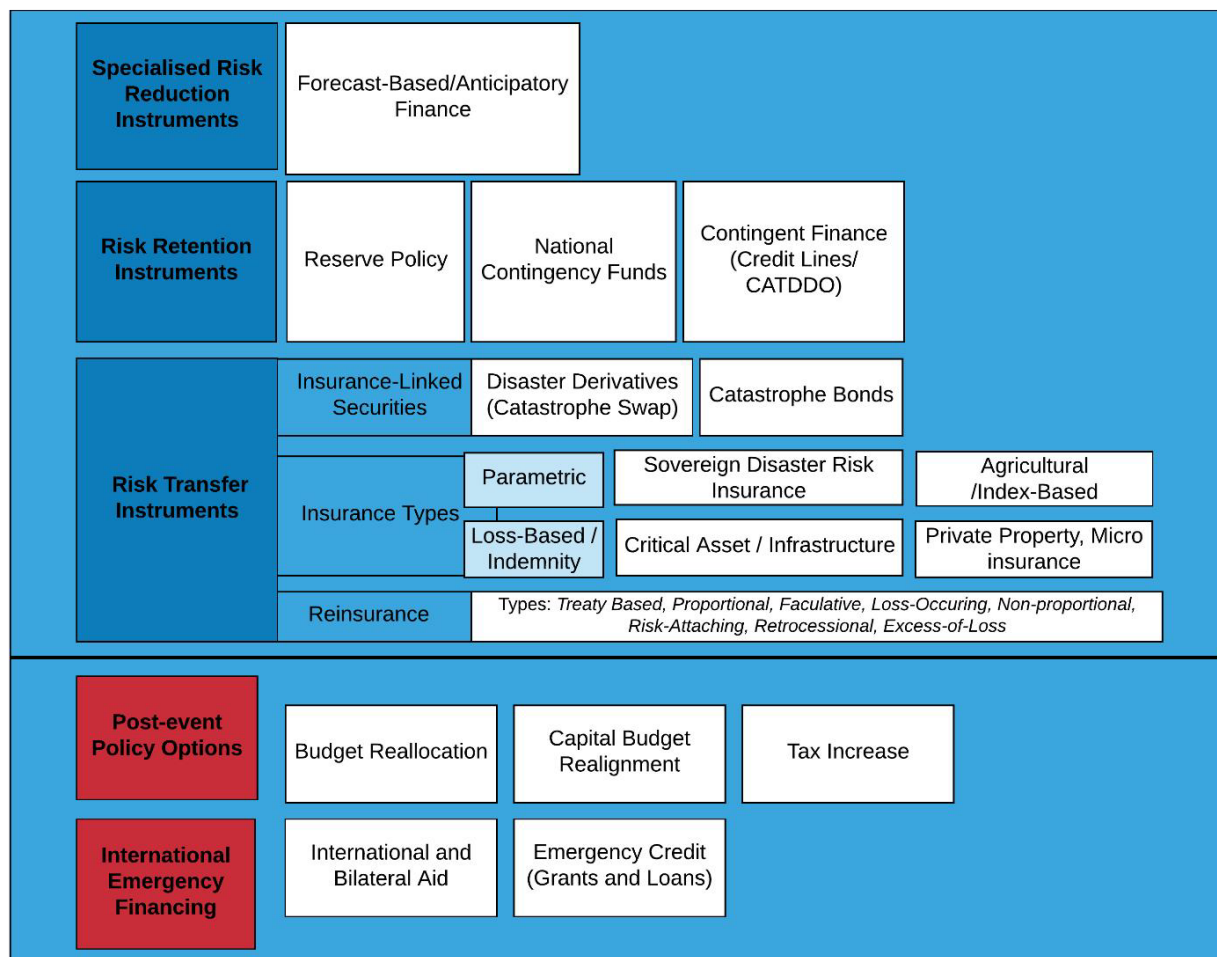


Figure 3: Risk finance products and instruments organised by classification and type. Descriptions adapted from (GFDRR 2014) (GFDRR 2015) (World Bank 2017) (UNFCCC 2018) (UNESCAP 2015)

Strengthening financial resilience and preparedness for disasters and slow-onset hazard events requires a strategic approach to risk financing. This approach must consider both the potential frequency and severity of different events and risks. The effectiveness of risk financing instruments in relation to different risks can be significantly improved when different types of instruments are combined strategically to help maximise coverage and reduce gaps in protection. **A strategic approach to combining financial instruments to cover a range of hazard types and risk scenarios is known as ‘risk layering’.**

Risk layering can expand the breadth of coverage in response to the existing and projected impacts of climate change and disaster events (such as floods, cyclones and storm surges). As climate change increases the potential intensity of the hazards experienced in the Pacific there is a strong rationale to diversify and combine risk financing instruments to increase protection to a growing range of potential impacts.

As depicted in Figure 4 below, different combinations of instruments can be applied to suit different circumstances. For instance, minor seasonal flooding may have minimal cost implications that can be fully covered by government reserve funds and small public investments. However, if moderate flooding occurs during a *La Nina* year, for example, flooding damage may surpass budget reserves and require governments to reallocate funds from elsewhere in the budget while also requiring small business owners to make insurance claims to offset damages. Should a much more extreme event occur, such as a major cyclone, various types of contingent finance, risk transfer and insurance, and use of public funds may need to be combined to reduce the financial burden.

The benefits of layering risk financing instruments to optimise protection has been articulated by the World Bank. For example, in Fiji, the World Bank estimates that the strategic combination of national reserve funds, contingent credit arrangements and catastrophe insurance could save USD1.03m (FJD2.2m) annually<sup>21</sup> and significantly reduce year on year economic exposure to hazard events. These concepts are critical for identifying national risk financing options and defining national financial protection strategies.

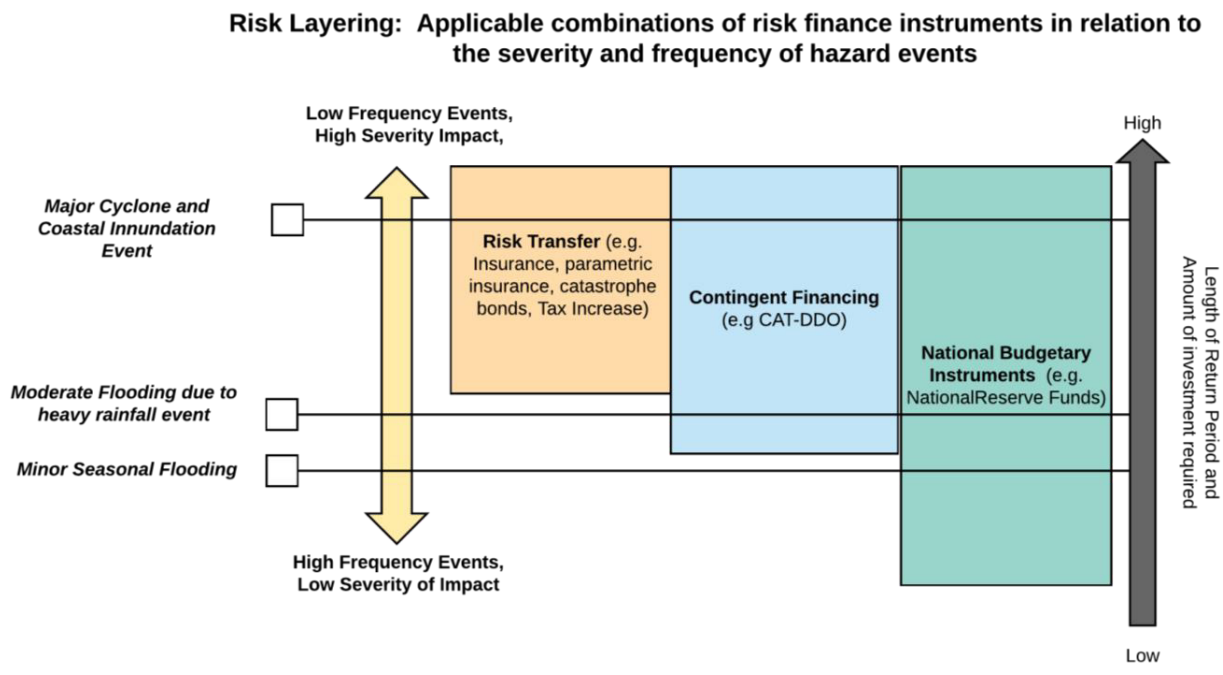


Figure 4: Risk Layering Principle, Concept adapted from (GFDRR 2014)

<sup>21</sup> (Government of the Republic of Fiji and World Bank 2018)



## Climate and Disaster Risk Financing in the Pacific

The increased stresses and risks that people, environments, and infrastructure must endure due to climate change impacts, intensified hydro-meteorological events, and geological hazards can quickly rollback and undermine development gains in the Pacific. The high exposure of PICs to a range of evolving climate and disaster risks can make the analysis of risk, and ability to amass the data needed to respond strategically to risk, more complex.<sup>22</sup> **Efforts to improve risk assessment information in the Pacific is often hampered** by capacity constraints, a lack of public asset registers<sup>23</sup>, limited availability of localised and historical climate data,<sup>24</sup> and the highly variable nature of ocean-climate dynamics.<sup>25</sup>

Though national contingency funds and budget reserves have been created by many PICs, and some have arrangements to increase financial liquidity following a disaster event (through contingent finance arrangements or parametric insurance), these arrangements offer **insufficient liquidity**<sup>26</sup> when considering the recent and likely annual average costs of moderate to high severity climate and disaster events. The level of aid dependence across the Pacific is also often identified as a disincentive to the development of robust national risk financing strategies and the diversification of risk financing options, due to the expectation of ad hoc assistance being made available following disaster events.<sup>27</sup> However, various reports have documented the often detrimental outcomes involved with reliance on uncertain and volatile in-kind assistance, and the significant additional costs involved with depending on donor timelines and priorities to resource an appropriate national response.<sup>28</sup>

**Market-based financial solutions to transfer risk remain limited in the Pacific.** The general lack of insurance penetration in PICs is due in part to the challenge of developing products with affordable premiums and the fact that investment in pre-emptive financial protection measures is not a commonplace and familiar practice in many Pacific countries which, in some cases, has been evidenced through a perceived general lack of trust in risk transfer concepts and products.<sup>29</sup> A further challenge to the development of risk transfer products and the diversification and expansion of the Pacific insurance market is the difficulty involved with developing products that can adequately cover the range of risks that many islands are exposed to. In some cases, there is a risk that the eventualities covered by a specific product may differ from the actual impacts experienced in a given year, meaning that the policyholder may have invested in one type of protection only to require another form of cover. This high potential for 'basis risk', is a complicated barrier in highly vulnerable small island states.<sup>30</sup> Furthermore, the availability of adequate models for assessing and identifying key risks and developing products and pay-out systems to suit needs while also protecting the insurance market from excessive claims is a challenging dynamic to navigate in a region with high aid dependence, limited population and overall market capacity, and high

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<sup>22</sup> (UNISDR 2013) (Government of the Republic of Fiji and World Bank 2018)

<sup>23</sup> (GFDRR 2015) (Lucas 2015) (Government of the Republic of Fiji and World Bank 2018) (Asian Development Bank 2019) (Asian Development Bank 2018)

<sup>24</sup> (Pacific Climate Change Science Program 2011)

<sup>25</sup> (Government of the Republic of Fiji and World Bank 2018) (Pacific Climate Change Science Program 2011)

<sup>26</sup> (Asian Development Bank 2018)

<sup>27</sup> (UNESCAP 2015)

<sup>28</sup> (GFDRR 2014) (Lucas 2015) (Ramachandran and Masood 2019) (Nishizawa, Roger and Zhang 2019) (UNFCCC 2018)

<sup>29</sup> (GFDRR 2015)

<sup>30</sup> (Ramachandran and Masood 2019)

annual climate and disaster-related losses. These factors have contributed to, informed and shaped the national enabling environment for insurance, or lack thereof, in PICs and contributed to the region's limited access to global reinsurance markets.<sup>31</sup>

The Asian Development Bank has identified specific parameters that contribute to the overall **enabling environment for climate and disaster risk financing** that should be taken into account when assessing the capacity of countries to access and use insurance, reinsurance and capital markets to support disaster risk financing. This 'enabling environment' has been assessed by evaluating *existing policy, trust/credibility, the status of social protection, existing product attractiveness, current economic conditions, and the level of unlicensed competition* that exists in a given country context.<sup>32</sup> These factors and their interactions must be considered when assessing new risk financing options and are key indicators to take into account when considering challenges experienced in the Pacific.

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<sup>31</sup> (Ramachandran and Masood 2019)

<sup>32</sup> (Asian Development Bank 2019)

## Overview - Existing National Instruments and Externally Sourced Products available to Pacific Island Countries

The following sections summarise the risk financing instruments available to PICs as of April 2020. The sections have been organised under the four main typologies highlighted above: 1) *Specialised instruments to support risk reduction and preparedness*, 2) *Risk retention instruments and products*, 3) *Risk Transfer Products*, 4) *International emergency financing*.

### 1) Risk Reduction and Preparedness

#### Forecast-based or Anticipatory Crisis Finance and Action

Forecast-based/Anticipatory finance is triggered '*post-forecast, pre-emergency*'. These concepts refer to financing arrangements that use available climate and weather information and forecasts to trigger financing for pre-planned actions designed to prevent risks and reduce the potential for harm to people and property *before an event occurs*.

#### Funding for Imminent Crisis through the Disaster Relief Emergency Fund

(International Federation of the Red Cross and Red Crescent Societies)

The Disaster Relief Emergency Fund (DREF) was established in 1985 to provide immediate financial support to National Red Cross and Red Crescent Societies. The DREF includes a financing window for an imminent crisis which allows National Societies to access financial resources to fund specific preparedness actions and rapid response activities.

**Eligibility:** All Red Cross / Red Crescent National Societies

**Criteria:** Assistance must be requested through National Red Cross Societies.

**Additional Information:** <https://media.ifrc.org/ifrc/dref>

#### Forecast-based Action by the Disaster Relief Emergency Fund

(International Federation of the Red Cross and Red Crescent Societies)

The Forecast-based Action (FbA) programme was launched in 2018 to support *early action* to reduce risk and is integrated into the International Federation of the Red Cross's (IFRC) broader *Disaster Relief Emergency Fund* (DREF). A key element of the FbA is the guaranteed allocation of funds to National Red Cross Societies to enable and implement early action once an emergency action plan is approved. National Societies work with their governments, meteorological agencies and other stakeholders to define forecast-based triggers (for instance wind-speed or rainfall levels) which indicate potential risks for vulnerable people and communities. Forecasts are then monitored and if pre-specified criteria and triggers are met financial allocations are automatically made and action plans implemented. In each case,

FbA funding supports the implementation of pre-agreed early actions to mitigate risks and/or reduce impacts from a specific hazard.

**Eligibility:** All Red Cross / Red Crescent National Societies

**Criteria:** Assistance is provided to National Red Cross Red Crescent Societies who have developed triggers and early action protocols based on forecast and risk data.

**Additional information:** [https://media.ifrc.org/ifrc/wp-content/uploads/sites/5/2019/03/0097\\_19\\_003\\_Broschuere\\_National-Society\\_210x297\\_EN.pdf](https://media.ifrc.org/ifrc/wp-content/uploads/sites/5/2019/03/0097_19_003_Broschuere_National-Society_210x297_EN.pdf)

***Blended Finance Sources and Objectives: Fiji's Climate Relocation and Displaced Peoples Trust Fund***

In 2019, the Fiji Government launched a dedicated trust fund intended to finance the pre-emptive relocation of communities and infrastructure deemed to be at severe risk due to climate and disaster-related risks. This fund is also designed to act as a source of immediate finance to support the protection and care of people displaced unexpectedly following a disaster event. This fund is resourced through a blend of domestically derived revenue and external donor support. The Fiji Government will deposit 3% of all revenue raised through *Fiji's Environment and Climate Adaptation Levy* (ECAL) while also seeking to increase trust fund resources through bilateral and multilateral sources of finance.

***Cash Transfers using block-chain to help boost social protection: An Example from Vanuatu***

Vanuatu is highly vulnerable to the impacts of climate change and environmental hazard events. Remote disaster-prone communities in Vanuatu often face difficulty accessing assistance during hazard events which can exacerbate transport challenges and affect government service delivery. In 2019, Oxfam in partnership with ConsenSys and Sempo developed a digital payment solution using block chain technology. This system enables the instantaneous transfer of financial aid to disaster-prone individuals, ensuring that assistance can be quickly and equitably distributed before or after a hazard event.

## 2) Risk Retention

### National Budgetary Instruments

Many Pacific governments must manage the cost of disasters using available public funds, especially in the aftermath of recurrent low-severity events. Countries such as Tonga<sup>33</sup>, Tuvalu<sup>34</sup> and Kiribati<sup>35</sup> have established long-term dedicated national funds to help improve national financial capacity to absorb the financial costs of climate change and disaster-related losses. In other cases, Pacific countries have more general sovereign wealth funds that can be drawn upon in the event of an emergency.<sup>36</sup> The benefit of national dedicated funds is the ability to closely align the management of the fund with national objectives and national disaster legislation. Such funds usually have low operational fees and can help ensure emergency liquidity is readily available following a disaster event. This can help reduce the need for emergency budget reallocations which can have a negative effect on existing budgets and plans. However, national funds require investment capital and can be quickly diminished if ongoing investments or regulation allocations from the budget are not made. Also, there are opportunity costs involved with holding larger reserve funds in low-interest accounts. In general, national disaster funds can be successful in reducing financial risk if efficiently managed and supplemented by additional financing mechanisms to help offset the financial burden on such funds in the wake of a major disaster event. In some cases where a dedicated disaster fund does not exist, in the wake of a major disaster event, supplementary national funds have been established (ex-post) and used as a means to amass funding from a variety of sources.<sup>37</sup>

### National Concessional Credit Facilities

The impact of disaster events on people and businesses in the Pacific often involve a protracted period of economic recovery. In some cases, central banks and national financial institutions in the Pacific have offered loans at concessional rates to businesses and homeowners. These forms of contingent credit have been introduced temporarily following specific disaster events or in some cases have been arranged as a standing and long-term facility. In most cases, these facilities have had a limited 'pot' of concessional funding to distribute and concessional loan terms are restricted to a pre-specified term.

#### **Concessional Loans for Businesses: The Evolution of Fiji's 'Disaster Rehabilitation and Containment Facility'**

In 2009, Fiji experienced severe flooding due to a major tropical depression which killed 11 people and displaced over 6,000. Businesses suffered major losses and to help assist business recovery the Reserve Bank of Fiji established a *Flood Rehabilitation Facility* to help provide small business with emergency credit at concessional rates of interest. This facility was reintroduced in 2012 following the Nadi Floods and in 2013 was renamed the Natural Disaster Rehabilitation Facility (NDRF). The NDRF was activated to support businesses following Cyclone Evan and then reactivated following TC Winston in 2016 and flooding experienced in 2018. In April 2020 the NDRF was expanded in response to COVID-19 and renamed the Disaster Rehabilitation and Containment Facility (DRCF). The DRCF is now positioned to provide concessional credit to business affected by health epidemics, pandemics and disaster events. The facility can be accessed through commercial banks and licensed credit institutions. Lenders can access funds from the Reserve Bank through this facility at a rate of 1% per annum and lend to eligible business at a maximum interest rate of 5% per annum for a period of six months and possible extension up to five years. The maximum loan available to business is FJD500,000.

## Contingent Financing

Contingent financing is most often arranged pre-emptively (ex-ante). Financing arrangements can disburse funds to help minimise the impact of hazard events (ex-ante) or be disbursed following an event or during a crisis situation to support a response (ex-post).

## Catastrophe Deferred Draw Down Option

(World Bank)

Catastrophe Deferred Draw Down options (CAT-DDO) are contingent financing agreements designed to provide countries with the additional financial liquidity required to address disaster events and emergencies. CAT-DDO are arranged ex-ante and are designed to disburse quickly once a specified event occurs and the pre-agreed draw down trigger is met. Typically, CAT-DDO are triggered by the declaration of a state of emergency or another pre-specified trigger. IDA countries can fund 50% of the CAT-DDO through concessional IDA allocations with the balance funded through global IDA resources. IDA countries with limits below USD20 million may request a CAT-DDO up to a maximum of USD20 million.

**Eligibility:** All IBRD and IDA-eligible World Bank Members

**Criteria:** Eligible countries must have an adequate macroeconomic policy framework and a satisfactory national disaster risk management programme.

**Additional information:** <http://pubdocs.worldbank.org/en/563361507314948638/product-note-cat-ddo-ida-english-2018.pdf>

### Pacific Island Countries and CAT-DDO

An increasing number of Pacific island countries have set up CAT-DDO as a means to increase emergency liquidity following a disaster event. CAT-DDO provide predictable and rapidly accessible finance for disaster response. This contingent financing option is accessible to all IDA members. Samoa and Tonga have both drawn down on CAT-DDO to help finance disaster responses. At the time of writing five Pacific island countries were in the process of securing CAT-DDO through the World Bank.

## Immediate Response Mechanism

(World Bank, IDA Crisis Toolkit)

The Immediate Response Mechanism (IRM) is a further crisis response mechanism accessible to IDA countries. This mechanism enables IDA countries to rapidly access un-disbursed IDA investment following a crisis event, complementing longer-term emergency response tools such as the *IDA Crisis Response Window* (CRW). All IDA operations encourage the inclusion of *Contingent Emergency Response*



*Component* (CERC). CERC is an arrangement within IDA projects that allow IDA funds to be quickly reallocated to emergency recovery activities in the event of a disaster. Inclusion of a CERC in IDA projects enables countries to use IDA funds without the need for time-consuming project restructuring. Up to 5% of un-disbursed IDA funds can be drawn upon through the CERC budget line.

**Eligibility:** All IDA countries are in principle eligible to access IDA resources through the IRM. Use of the IRM is voluntary. In order to have the option to use the IRM to respond to a natural or man-made crisis or disaster event, recipients must have included CERCs in their selected IDA projects and adopted an IRM Operations Manual prior to the event in question.

**Criteria:** The IRM may be accessed by IDA eligible countries following a crisis that has caused or is likely to cause a major adverse economic or social impact.

**Additional Information:** [http://siteresources.worldbank.org/PROJECTS/Resources/40940-1365611011935/Guidance\\_Note\\_IRM.pdf](http://siteresources.worldbank.org/PROJECTS/Resources/40940-1365611011935/Guidance_Note_IRM.pdf)

<http://documents.worldbank.org/curated/en/857351468325152844/Including-contingent-emergency-response-components-in-standard-investment-projects-guidance-note-to-staff>

#### Contingent Emergency Response Components in Pacific Financing Arrangements

The inclusion of CERCs within World Bank projects is increasingly recommended for all IDA eligible countries. For example, Federated States of Micronesia, Marshall Islands, Samoa and Tonga have either used or have access to CERC financing arrangements. CERCs can be triggered to provide additional liquidity for IDA countries when disasters occur. In April 2020, Samoa accessed additional finance of USD0.5m via pre-arranged CERC arrangements to support the emergency health response to COVID-19.

### Policy-based Contingent Financing

(Asian Development Bank, Pacific Disaster Resilience Program)

This financing arrangement is designed to provide a predictable source of funding which can be quickly disbursed in the form of both loans and grants following a disaster event. Finance secured through this arrangement is designed to enable central government agencies to support disaster responses and early recovery efforts to mitigate the immediate economic and social impact of a disaster event.

**Eligibility:** To establish eligibility to access these contingent financing arrangements, ADB developing member countries must have completed prior agreed policy actions to strengthen institutional arrangements for disaster and climate risk management.

**Criteria:** Terms are bilaterally negotiated with ADB. Financing arrangements under this programme vary by country. Funds are released following a pre-agreed 'soft trigger' such as a 'state of emergency' declaration.

**Additional Information:** <https://www.adb.org/documents/contingent-disaster-financing-natural-hazards-policy-paper>  
<https://www.adb.org/projects/50028-001/main>  
<https://www.adb.org/projects/50028-002/main>  
<https://www.adb.org/projects/50212-001/main>  
<https://www.adb.org/projects/50212-002/main>  
<https://www.adb.org/projects/52018-001/main>

### **ADB's Policy-Based Contingent Disaster Financing in the Pacific**

On February 12, 2018, the Kingdom of Tonga was struck by severe Tropical Cyclone Gita. This Category 4 cyclone caused widespread devastation, damaging over 2000 homes, leaving two people dead, and injuring over 400 people. Following the declaration of a national emergency in the aftermath of Cyclone Gita, the ADB policy-based contingent disaster financing (CDF) agreement with Tonga, through the Pacific Disaster Resilience Program, enabled the government to access USD6m to support response and early recovery activities. ADB released the funds within 24 hours and this was used to help support urgent disaster response activities.

Similar CDF programmes with the ADB were also set up with the Cook Islands, FSM, Marshall Islands, Palau, Solomon Islands, Samoa and Tuvalu. To access the financing, the governments have undertaken prior actions to strengthen policy and institutional arrangements for disaster risk management, and the disbursement is triggered by a declaration of a state of emergency or disaster. Tuvalu accessed respective CDF financing in February 2020 following Cyclone Tino. In light of the major economic impacts of COVID-19 on PICs, funding available under ADB's CDF programmes was released in early 2020 to member countries in order to support response and recovery efforts.

| Country                        | Pacific Disaster Resilience Program Grants/Loans for COVID-19 Response |
|--------------------------------|--|
| Cook Islands                   | USD10m (loan)  |
| Federated States of Micronesia | USD6m (Grant)  |
| Marshall Islands               | USD6m (Grant)  |
| Palau                          | USD15m (Policy-based Loan)   |
| Solomon Islands                | USD3m (Grant) + \$3m (concessional loan)                               |
| Samoa                          | USD2.9m (Grant)  |
| Tonga                          | USD6m (Grant)  |

### Rapid Credit Facility

(International Monetary Fund)

The Rapid Credit Facility (RCF) provides concessional finance in the form of loans to low-income countries when urgent financial support is required. Though focused more on supporting macro-economic stability, this facility may also serve as a relevant source of support following a disaster event.

**Eligibility:** (PRGT Eligible IMF Members) Federated States of Micronesia, Kiribati, Marshall Islands, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu.

**Criteria:** Requests are assessed on a case by case basis.

**Additional Information:**

<https://www.imf.org/en/About/Factsheets/Sheets/2016/08/02/21/08/Rapid-Credit-Facility>

### 3) Risk Transfer

#### Catastrophe Risk Insurance for Sovereigns

Catastrophe risk insurance products are financial instruments designed to provide emergency financial liquidity following a disaster event. Insurance products provide an ex-ante means to finance unforeseen losses. Catastrophe-related insurance products generally make a pay-out to a policyholder based on pre-agreed terms or parametric triggers. Indemnity-based insurance schemes make payments based on the assessment of damage whereas parametric insurance makes a pre-agreed pay-out if a specified type of event occurs. Parametric insurance can be activated by triggers agreed with the insurer. For instance, a sovereign government could arrange parametric insurance that would be triggered and release a pay-out if wind speeds surpassed 120 km/hour or if excess rainfall above an agreed threshold fell over a specified timeframe (for example 200mm of rain over 15 hours). These pre-agreed parametric triggers help to guarantee that there is additional financial assistance available in the event of an extreme hazard event.

#### Pacific Catastrophe Risk Insurance Company

##### *Sovereign Wind Speed and Seismic Peril Parametric Cover for Pacific Island Countries*

The Pacific Catastrophe Risk Insurance Company (PCRIC)<sup>38</sup> is a regional catastrophe insurance platform dedicated to providing sovereign parametric climate and disaster insurance to Pacific island governments, for coverage (as of today) against tropical cyclones, earthquakes and tsunami risk. PCRIC products have been developed based on data from the *Pacific Risk Information System* (PacRIS), an exposure database that was developed under the Technical Assistance component of the PCRAFI project under the management of the Pacific Community (SPC). When pre-agreed parametric triggers are met, PCRIC initiates a rapid pay-out to the national policyholder to provide financial liquidity to support the national disaster response. Catastrophe insurance products such as those offered by PCRIC are typically designed to provide coverage against events with low frequency but high impacts.

**Eligibility:** All Pacific Island Countries

**Criteria:** Countries must pay an annual premium to take out a policy and be eligible for pay-outs. Potential pay-out levels and parametric triggers are pre-determined and designed on a case-by-case basis according to country needs and the level of agreed annual premium.

**Additional Information:** <https://financialprotectionforum.org/pcrafi-program>

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<sup>38</sup> The PCRIC is a captive insurance company and was established following support channelled to the region through the *Pacific Catastrophe Risk Assessment and Financing Initiative* (PCRAFI). PCRAFI pilot projects helped to establish the regional risk pool. PCRIC has been supported through contributions made by the PCRAFI Multi-Donor Trust Fund (MDTF) for both capitalisation and operational expenses.

### Parametric Sovereign Risk Insurance: Pacific Experiences

The Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) laid the foundation for a sovereign catastrophe risk pool to issue affordable parametric insurance. As part of the initiative, the PCRAFI Insurance Pilot (2013-15) issued parametric insurance policies to six participating countries, covering tropical cyclones, earthquakes and tsunamis. After the PCRAFI pilot in 2016, the Pacific Catastrophe Risk Insurance Company (PCRIC) was formed which is owned by the Pacific Catastrophe Risk Insurance Foundation. Current members of the Foundation include Germany, Japan, United Kingdom and USA (all four provided grant funding to establish PCRIC) and the following PICs: Cook Islands, Fiji, Republic of Marshall Islands, Samoa, Tonga and Vanuatu. The Pacific Resilience Program (PREP) launched in 2016 has covered premium payments for participating PICs using IDA funds.

Since the start of PCRAFI, four insurance pay-outs were made, totalling USD11.2m. The first two pay-outs were made via PCRAFI while the last two payments have been executed by PCRIC.

1. Tonga received a USD1.3m pay-out in 2014 after Cyclone Ian
2. Vanuatu received a USD1.9m pay-out in 2015 following Cyclone Pam
3. Tonga received a USD3.5m pay-out in 2018 following Cyclone Gita
4. Tonga received a USD4.5m pay-out in 2020 following Cyclone Harold

### Sovereign Risk Transfer through Catastrophe Bonds

Catastrophe Bonds are debt instruments that enable sovereign governments to raise finance, through capital markets, that can be accessed if a specific type of catastrophe event occurs during a particular time period. These instruments are a type of insurance-linked security which relies on the willingness of investors to bet against the likelihood of a disaster event. If an event does not occur during the investment period, investors benefit from high returns on their investment. If an event does occur and it meets a pre-agreed parametric trigger, the issuing government receives a quickly disbursed pay-out, transferring the risk to the investors.

**Eligibility:** Any government can issue a catastrophe bond in collaboration with a multilateral bank.

**Criteria:** A pay-out to the issuing government is contingent on a specific type of catastrophe and pre-agreed parametric trigger occurring during the specified period.

**Additional Information:** <https://www.worldbank.org/en/news/press-release/2009/10/19/world-bank-launches-multicat-program>

## Insurance for Critical Public Infrastructure

All countries have specific pieces of public infrastructure that are vital to public safety, economic stability, mobility and wellbeing. In PICs, there is often little infrastructure redundancy, increasing the risk of single-point vulnerability. For example, many PICs have only one international airport which, if damaged, could significantly impact the movement of people and services from the country. Many smaller island states are heavily reliant on limited key public service infrastructure (a single power station, water pumping facility or hospital). As a result, there is a need to explore options to insure specific high-value public infrastructure to help transfer risk and increase access to resources needed to restore services following damage from a disaster event. However, due to high exposure, low insurance penetration and inadequate building codes, accessing asset-specific coverage is difficult in the Pacific<sup>39</sup>.

## Micro Insurance for Homes, Individuals, Families, Communities and Businesses

Access to micro-insurance schemes for individuals, households and communities can help to reduce the risk burden on individuals and increase financial resilience. Fiji Care's community-based insurance product offers a low cost bundled insurance inclusive of life insurance, medical coverage and fire protection.<sup>40</sup> This product is currently available in Fiji, Solomon Islands and Vanuatu. At the time of writing, efforts were underway to launch Fiji Care's Livelihood Protection Policy, a weather-based index insurance instrument designed to help offset the financial impacts of climate and disaster-related events on communities. Commercial insurance companies, such as Sun Insurance, offer low-cost cyclone insurance cover for roofing for up to FJD30,000 without an engineer's certificate.<sup>41</sup> In addition to these types of protection, there is also interest in the Pacific to develop agricultural insurance to enable farmers to insure their crops against hazard events and climatic anomalies, such as extended droughts or unseasonable rainfall events, that significantly reduce expected crop yields.

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<sup>39</sup> (Lucas 2015)

<sup>40</sup> (Pacific Financial Inclusion Program 2019)

<sup>41</sup> (Sun Insurance 2019)



### ***National Building Codes and Insurability***

Context-appropriate and enforceable building codes can help to enable the development of adequate indemnity-based insurance products. In countries where building codes are enforced there is greater ability to evaluate and price risks based on the code requirements. Where building codes are not enforced, there is less potential to develop adequate and affordable insurance products at the household level as there are no standard structural requirements and prerequisites that the insurer can assess in relation to potential risks. As is the case in some countries in the Pacific, in areas or regions where building codes are not enforced, there is potential to insure a private home if the structure is assessed by an independent engineer. With appropriate and enforceable building codes and higher insurance availability and penetration as a result, not only will insurance for private homes be more affordable, there is also potential to attract private sector investment. Countries that enforce building codes for all public infrastructure have higher potential to attract institutional investments as investors have greater incentive to invest if they have the ability to adequately insure and de-risk their investments.



*Damage to households on the eastern coast of Viti Levu in Fiji following Cyclone Winston*

*(Daniel Lund)*

## 4) International Emergency Financing

There are various modalities of externally sourced emergency finance in addition to ad hoc donor aid that can be arranged and disbursed during or after a disaster event. Administrative requirements vary and the level of contingent credit or grant amounts available will in some cases depend on eligibility pre-conditions and/or the severity of the disaster event.

### Asia-Pacific Disaster Response Fund

(Asian Development Bank)

Quickly disbursed grants (of up to USD3m) to support ADB development member countries to fund responses following a declared disaster. The level of funding disbursed will be in part based on the recommendation and advice provided by the relevant United Nations resident coordinator.

**Eligibility:** All ADB development member countries are eligible.

**Criteria:** A statement of national emergency must be declared following a disaster event.

**Additional information:** <https://www.adb.org/site/funds/funds/asia-pacific-disaster-response-fund-apdrf>

#### Asia-Pacific Disaster Response Fund Grants and COVID-19

In order to support national health sector responses and prevent the spread of COVID-19, ADB allocated USD1.53m in small grants through the APDRF in March 2020. Small grants of USD0.3-0.4m were secured by the Federated States of Micronesia, Marshall Islands, Nauru, Tonga and Tuvalu. In each case, a state of emergency had been declared and funding was used to enhance preventative measures in partnership with Ministries of Health.

### Catastrophe Containment and Relief Trust

(International Monetary Fund)

The Catastrophe Containment and Relief Trust (CCRT) provides debt relief to vulnerable countries that have been affected by catastrophic events (disasters and public health emergencies). Debt relief is intended to enable countries to focus resources for disaster response, public health emergency containment, and national recovery.

**Eligibility:** Pacific SIDS eligible for Poverty Reduction and Growth Trust (PRGT) borrowing (and with populations below 1.5m and a per capita income below twice the IDA cut off).

**Criteria:**

*Post-Catastrophe Relief Window:* IMF members affected by a catastrophic disaster that has directly affected at least 1/3 of the national population and destroyed more than ¼ of the productive capacity of the country (or caused damage that exceeds 100% of GDP) would qualify



for either debt flow relief (on debt service to the IMF falling due in the two years following the event) or in very severe instances debt stock relief (full cancellation of national debt stock to IMF).

*Catastrophe Containment Window:* Members affected by a life-threatening public health disaster with highly disruptive implications (and the cumulative loss of at least 10% of real GDP, or an increase in an equivalent level of additional expenditure) qualify to receive up-front grants to pay off debt (see additional information for detail on grant limits)

**Additional Information:** <https://www.imf.org/external/np/exr/facts/pdf/ccr.pdf>

## Central Emergency Response Fund

(United Nations)

### *Rapid Response Window*

The CERF via the Rapid Response Window provides quickly disbursed grants to support three types of emergency situations: *a) sudden onset emergencies b) the deterioration of an existing humanitarian situation c) time-critical interventions*. In most cases, a maximum of USD30m can be applied for by UN organisations to support national responses. Applications must be submitted through UN regional coordinators.

### *Underfunded Emergencies*

Underfunded Emergency (UFE) grants target crises which have been underfunded and exhibit significant humanitarian needs. Countries are selected to receive UFE grants based on quantitative data analysis.

**Eligibility:** All UN organisations (excluding UNOCHA) and IOM.

**Criteria:** *See additional information*

**Additional Information:** <https://cerf.un.org/partner-resources/guidance-and-templates>

[https://cerf.un.org/sites/default/files/resources/CERF\\_Rapid\\_Response\\_Window\\_September\\_2011.pdf](https://cerf.un.org/sites/default/files/resources/CERF_Rapid_Response_Window_September_2011.pdf)

### **Pacific Beneficiaries of the United Nations Central Emergency Response Fund**

Between 2013-2018, Pacific island countries have received USD29.4m from the UN CERF following major disaster events.

2013: Republic of the Marshall Islands, Drought, USD1m

2014: Solomon Islands, Flooding, USD1.7m

2015: Vanuatu, Cyclone Pam, USD5m

2016: Papua New Guinea, Drought, USD4.7m

2016: Fiji, Cyclone Winston, USD8m

2018: Papua New Guinea, Earthquake, USD9m

## Crisis Response Window

(World Bank, IDA Crisis Toolkit)

The Crisis Response Window is made accessible to IDA countries to help buffer the impact of crises (economic shocks, natural disasters, health emergencies, etc.) that are expected to have a major fiscal impact on the economy of IDA eligible countries. Should a given country meet the access criteria, emergency resources would then be deployed in two stages with spending prioritised to protect core spending priorities (i.e. health, education, social protection, agriculture and infrastructure) as required. In relation to disaster events, support through CRW would only be considered if the disaster event was deemed to be exceptionally severe in comparison to historical events and existing data.

**Eligibility:** All IDA countries are in principle eligible to access financial support via the IDA Crisis Response Window (CRW).

**Criteria:** CRW support is triggered when there is evidence of a crisis that is expected to result in a year-on-year reduction of GDP by 3% or more. This risk will be assessed using data from the IMF's World Economic Outlook database. CRW support will also be considered if a severe price shock occurs which is expected to have a major fiscal impact, requires an international response, and is deemed to require additional resources beyond existing IDA allocations.

**Additional information:** <http://ida.worldbank.org/financing/crisis-response-window>

## Disaster Relief Emergency Fund

(International Federation of the Red Cross and Red Crescent Societies)

The Disaster Relief Emergency Fund (DREF) was established in 1985 to provide immediate financial support to National Red Cross and Red Crescent Societies. The DREF is managed by the IFRC Secretariat as a central fund and requests are reviewed on a case-by-case basis. Funds can be allocated in as little as 24 hours. Grants can be provided for small to medium scale disasters and health emergencies that do not always attract the attention and interest of media or the international community. Funding can also be accessed in the form of loans for Emergency Appeal to kick start operations in large-scale disasters.

**Eligibility:** All Red Cross / Red Crescent National Societies

**Criteria:** Assistance must be requested through National Red Cross Societies

**Additional information:** <https://media.ifrc.org/ifrc/dref/>

### Supporting Vanuatu before and after the landfall of Cyclone Harold

Before TC Harold hit Vanuatu in April 2020, the DREF released CHF51,381 to assist the Vanuatu Red Cross Society to implement early actions to reduce the risk posed by the cyclone. These actions included the deployment of staff and volunteers to assist with evacuations, the dissemination of information to communities, the movement of prepositioned stocks closer to areas most likely to be affected, and coordination with authorities and relevant stakeholders. Subsequently, in the aftermath of the cyclone a revision was made to the Emergency Plan of Action to increase the total amount dispersed by the DRF to CHF698,060, based on the assessed needs and scale of impact. DREF funding complemented other sources of financial assistance and donor support and provided much needed funds before the disaster hit to help mitigate risks. This form of rapidly deployed emergency assistance uses the National Red Cross Societies in their auxiliary role to governments, as a means to reach the most vulnerable segments of the population. It also aligns with commitments under the Grand Bargain agreement reached in 2016 between some of the world's largest donors and humanitarian organisations to ensure local actors, particularly those with limited cash reserves, can access financing directly to anticipate and respond quickly to humanitarian needs, as first responders.

### Rapid Financing Instrument

(International Monetary Fund)

The IMF's Rapid Financing Instrument (RFI) provides rapid finance to all countries facing an urgent balance of payments need as the result of a financial crisis, disaster event, or other major sources of economic disruption.

**Eligibility:** All IMF Members (most relevant for non-PRGT eligible countries: Fiji, Nauru, Palau)

**Access Criteria:** Requests are assessed on a case by case basis.

**Additional Information:**

<https://www.imf.org/en/About/Factsheets/Sheets/2016/08/02/19/55/Rapid-Financing-Instrument>



*Funafuti Lagoon*

*(Daniel Lund)*

## Reflections - Scaling up Climate and Disaster Risk Financing Arrangements in the Pacific

Across the available literature and documentation on Pacific experiences with climate and disaster risk management there is consensus around the challenges involved with managing major systemic risks in small resource-constrained contexts.<sup>42</sup> It is important to strengthen the ability to assess and pre-empt risks and the capacity to design and implement the necessary financial and institutional arrangements to manage, reduce and offset such risks on an ongoing basis. This will enable countries to effectively build resilience. The process of ‘mainstreaming’ both the awareness and responses to climate and disaster risk management within the planning processes of governments, private sector organisations and communities is an ongoing challenge. However, many PICs have the potential to improve financial protection and performance by ensuring national financial protection arrangements are strategically designed and greater efforts are undertaken to account for the impact of climate and disaster events in economic planning processes.

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<sup>42</sup> (Ramachandran and Masood 2019) (Lucas 2015) (Nishizawa, Roger and Zhang 2019)

No single investment or risk financing product will provide comprehensive protection from the range of risks and impacts associated with climate change and disaster events. However, by strategically 'layering' risk reduction, risk retention, and risk transfer approaches and instruments there is greater potential to reduce the social and economic impacts of climate change and disaster events. It is also clear that the effectiveness of these financial instruments will be greatly diminished if they are not combined with, and complemented by, robust risk management policies, sound financial planning and borrowing, appropriate capacity to assess and model risks, large scale investment in resilient infrastructure, and a strong public policy emphasis on social protection.

Due to the scale of risks faced by many PICs, the practicality of factoring in and relying upon in-kind, ad hoc, solidarity-based, external donor finance following crisis events is diminishing. As risks increase, this type of finance is unreliable and difficult to programme into strategic and effective national responses.<sup>43</sup>

Following a significant literature review and the assessment of the available instruments and options the following key messages and recommendations are evident in relation to the Pacific context and its risk financing needs:

### ***1) Invest in the data and analysis needed to understand risk and increase foresight***

*Increasing long term risk foresight is the backbone of effective risk management.* National capacity to assess, evaluate and cost long-term risks is the foundation of any effective risk management approach. This foundation is increasingly important in climate-vulnerable PICs where the short to long-term implications of climate change will have a significant impact on the practicality and feasibility of many investment decisions. Catastrophe modelling and long-term risk assessment capacity is vital to enabling PICs to strategise and justify risk management investments. However, managing uncertainty and downscaling global projections into localised projections is complex and additional capacity and technology transfer will be required to enhance risk foresight. Centrally held data on public assets, demographic information and standardised localised risk assessments are increasingly required to help design risk finance options. For instance, to design effective parametric insurance products and risk transfer options, greater localised data and information to assist risk projections must be gathered and used to inform long-term modelling. While new financing options are immediately required to cover a growing array of risk types, the development of new instruments and products at the sovereign level will ultimately yield less effective and fit for purpose results without additional primary investment in the risk assessments and risk projection capacity needed to define these products. Greater access to the information required to assess risk will ensure that an evidence-based approach can be used to identify, and influence investment priorities needed to manage increasingly dynamic and interrelated climate and disaster risks.

### ***2) Increase the understanding of the co-benefits involved with layering and blending finance types, instruments, and development objectives***

Pacific governments have long been required to manage public affairs using a mix of revenue types and funding sources. Since 2009, PICs have accessed approximately USD2.5 billion in climate



finance from a range of bilateral and multilateral sources<sup>44</sup>. While a large proportion of this finance has contributed towards building resilience to climate change, risk reduction gains have been outpaced by the increasing intensity of recent Category 5 cyclones, extreme rainfall events and extended drought periods.<sup>45</sup> As a result, managing, reducing and offsetting losses remains an inevitable element of risk management in the Pacific. This requires Pacific countries to also engage, invest in, and combine different types and layers of risk finance alongside longer-term investments in resilience building (e.g. infrastructure adaptation, capacity building, behaviour change). Examples of how climate finance and risk finance investments can be deployed and applied in a complementary manner are demonstrated in Table 3 below. For example, through the development of insurance for critical public assets and infrastructure and stronger national linkages to the re-insurance markets, there is potential to de-risk and incentivise additional private sector investments in resilience which can be blended with public and international funds.<sup>46</sup> In this way, risk transfer mechanisms and insurance-based products have the potential to increase the mobilisation of climate finance and improve the conditions required to enable resilient development outcomes. By investing in resilience and complementary activities and products that together reduce risks and losses, protect and bolster economic opportunities, and unlock co-benefits, countries can benefit from what has been termed the '*triple dividend of resilience*'.<sup>47</sup>

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<sup>44</sup> (Pacific Islands Forum Secretariat 2019)

<sup>45</sup> (Pacific Islands Forum Secretariat 2019) (Lee and Nguyen 2018) (Nishizawa, Roger and Zhang 2019) (Kulp and Strauss 2019)

<sup>46</sup> (Centre for Global Disaster Protection and Lloyd's of London 2018)

<sup>47</sup> (Overseas Development Institute and The World Bank 2015)

| Policy area                        | Climate Finance  | Climate and Disaster Risk Finance   |
|------------------------------------|--|---|
| Public Services                    | A New Solar Array is funded. The concessional finance arrangements offer incentives to the recipient if comprehensive insurance for the investment is taken out.   | Asset Insurance is secured to cover cyclone damage, reducing the interest on the concessional loan and protecting the investment.   |
| Infrastructure                     | Climate Finance is used to retrofit a public building to withstand high wind speeds.   | Flood insurance is taken out to cover potential damage to the building's ground floor.  |
| Private Property and Public Safety | Government invests in climate adaptation measures to reduce community vulnerability. Climate finance continues to fund critical development projects.  | 1) The community as a group invests in low-cost insurance to cover losses from extreme events. 2) The government joins a sovereign risk pool to increase liquidity required to manage national responses, increasing financial capacity to support communities. |
| Food Security                      | Farmers invest in drought-resistant crops and adjust growing methodology through technical assistance provided by an international NGO.  | Recognising that extreme droughts could occur; farmers take out index-based crop insurance to insure their investment and reduce the risk of major losses due to a 1 in 10-year drought event.  |
| Private Sector                     | A business owner receives training to improve the preparedness of her staff and increase the business's capacity to withstand disaster events. The risk assessments conducted, and training identify that the business is highly exposed to losses from flooding.  | The business owner takes out flood protection insurance. The premium rate is reduced because a comprehensive flood risk management plan is in place.  |
| Localised Risk                     | A particular community is at risk of coastal inundation during a specific time of year. Climate finance has been used to help the community to improve the resilience of physical structures and increase coastal protection. However, it is clear that in ten years this particular piece of land will not be habitable. In the meantime, the community is not willing or prepared to move. | Government designs a costed evacuation protocol which is triggered and funded following a particular forecast-based trigger. This ensures there is a speedy pre-emptive measure for preventing the risk of a loss of life due to an inundation event.           |

*Table 3: Risk financing instruments can help improve and protect climate finance investments complementing efforts to increase resilience and reduce financial risk. This table highlights examples of how climate finance and risk finance can relate and interact to mitigate and reduce socio-economic loss and damage. Risk financing instruments and option can improve investor confidence through the ability of these instruments to help protect investments made in vulnerable countries where risk exposure is high.*

Building financial resilience to climate change impacts and disaster events requires not only the layering of different risk financing instruments but also an understanding of the relationship between risk financing instruments and existing development investments. For instance, the scale of investment required to offset flood risk for a particular population centre using insurance instruments may be reduced following the completion of a major coastal protection project. Similarly, investment in risk transfer instruments may need to be increased as new risks transpire that are yet to be effectively managed by long term public, bilateral, and multilateral investments. Figure 5 shows the relevance of different financial instruments and modalities in relation to traditional disaster investment phases to demonstrate the

specific timeframes in which different risk financing products and layers are relevant. Though climate adaptation focused multilateral finance would most likely not be used to support response activities, it is important to consider the way in which these investments have increased resilience, and in so doing, the way in which these investments may reduce the impact of a given disaster event and the subsequent level of response-related financing required post-event.

**The relevance of different financial instruments and modalities in relation to traditional disaster investment phases**

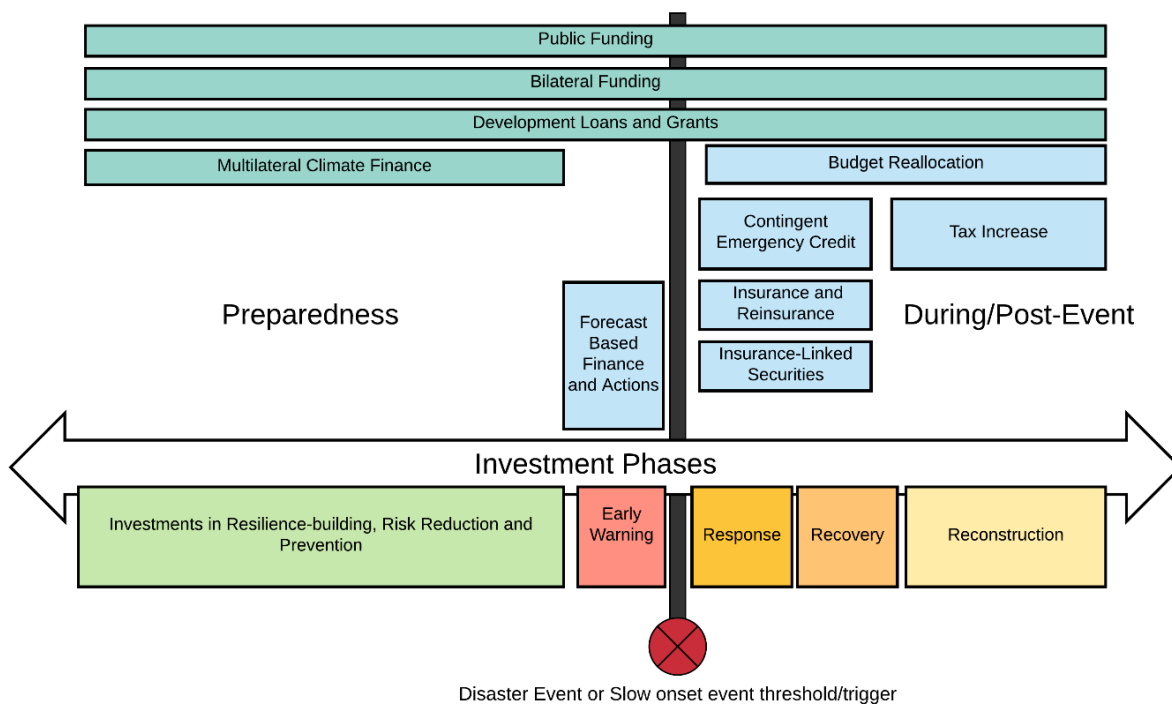


Figure 5: A visualisation of different types of finance and financial instruments in relation to investment phases pre and post a disaster event.

### 3) Putting Social Protection First

Public expenditure on social protection (excluding health) in most Pacific island countries as a proportion of GDP is well below global averages.<sup>48</sup> The deficit of expenditure on social protection has negative implications for people when disaster events occur. Pacific governments require additional resources and are exploring new types of fiscal buffers to effectively manage the direct and indirect impacts of hazard events on human welfare, public services and critical infrastructure.<sup>49</sup> Despite these efforts, specific social protection measures are increasingly required by uninsured communities and individuals to improve the reliability, consistency and accessibility to timely support both before and after hazard events occur.<sup>50</sup> Ensuring that risk financing mechanisms have clear linkages to social protection outcomes, and incorporate mechanisms that help ensure that support flows to the most vulnerable and remote populations, is a key priority for PICs where small, dispersed and isolated populations can challenge the capacity of government service delivery.<sup>51</sup> Micro-insurance schemes and anticipatory financing tools can help reduce the burden on government resources, response capacity and service delivery infrastructure. Forecast-based financing and innovative methods of disbursing funds to communities and individuals can help to overcome logistical barriers and enable communities to play an active role in their own protection and loss and damage minimisation. Low-cost micro-insurance schemes and state-sponsored products can help to expand social protection in a cost-effective manner when combined with risk reduction measures and awareness building.



(Daniel Lund)

<sup>48</sup> (United Nations Economic and Social Commission for Asia and the Pacific , International Labour Organisation 2020)

<sup>49</sup> (GFDRR 2015)

<sup>50</sup> (Burton 2015)

<sup>51</sup> (Secretariat for the Pacific Community, Secretariat of the Pacific Regional Environment Programme, Pacific Islands Forum Secretariat, UNDP, UNISDR, University of the South Pacific n.d.)

#### 4) National Strategies for Climate and Disaster Risk Financing

To increase the efficiency and complementarity of different risk financing instruments and design a combination of instruments best suited to a given risk profile, there is great value in developing national financial protection strategies and plans. It is increasingly important to strategise the use and combination of instruments to assess protection gaps and identify priorities for increasing coverage. Such plans can help to improve the systems and coordination involved with both the implementation and administration of risk financing instruments. Financial protection strategies help to formalise the linkages between risk finance and national risk management systems and can be vital to ensuring that risk finance can be disbursed and implemented efficiently and effectively.

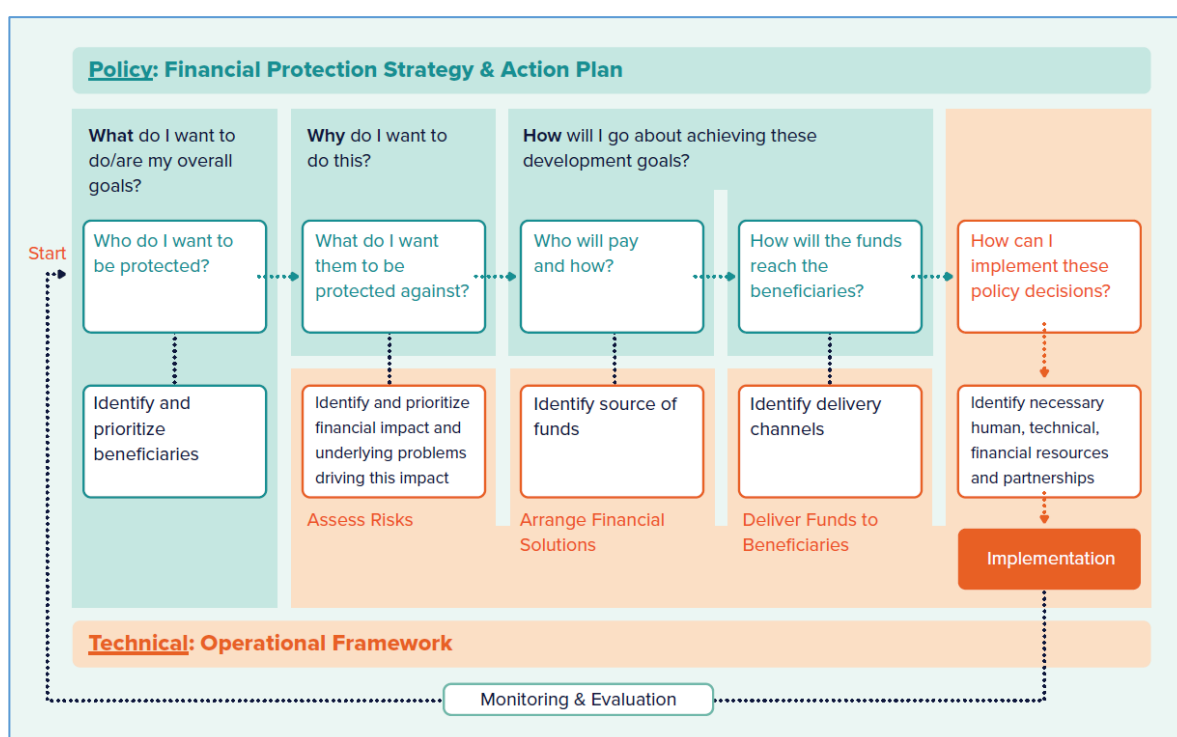


Figure 6: Overview of the benefits and elements of Financial Protection Strategies (World Bank 2017)

#### Samoa’s National Disaster Risk Financing Strategic Plan

In 2018 the Government of Samoa launched a *National Disaster Risk Financing Strategic Plan* as a means to improve the effective use of the different sources of funding available following a disaster event. The plan articulates the way in which a range of different funding sources will be used to help finance a national disaster response, recovery and rehabilitation, and in so doing, reduce costs on limited public resources. Samoa’s strategic approach to disaster risk financing is a strong example of the way in which different sources of funding must be pre-emptively coordinated and ‘layered’ to produce an effective financial protection strategy. This initiative by Samoa illustrates an important departure from a more ad hoc historical approach to disaster risk financing.



## Conclusion

Increasing the effectiveness and access to climate and disaster risk finance has become a heightened priority for Pacific island countries in light of recent disaster events. The COVID-19 pandemic has further illustrated the need to strategically use a range of financial tools to increase financial protection against shocks and protracted disruptions. While efforts to improve risk information and develop evidence-based national climate and disaster risk financing strategies will help Pacific island countries to address protection gaps and increase complementarity between different sources and types of finance, these strategies must be anchored in efforts to increase protection for people and vulnerable communities.



*(Daniel Lund)*

*Pacific Ministers of Finance discuss risk financing challenges and opportunities at the Pacific 'Understanding Risk Forum' in Vanuatu in 2018*

## Annexe 1: Regional and International Product Development Initiatives

Though the enabling environment and regulatory frameworks required to incentivise the development of innovative insurance products is often lacking in small island states, there are dedicated initiatives in place to support country efforts. Risk finance mechanisms and market-based solutions can be expanded through improved cooperation within and across governments, private sector actors, insurers, regional and international actors. Greater private sector engagement and regional collaboration to increase the size of insurance pools is key to increasing the potential market penetration of risk insurance products and incentivise the development of a greater diversity of risk transfer products.

There are several ongoing product development and technical support initiatives which have been established to help progress product development, build capacity, and increase access to risk assessments and loss and damage data.

### International Technical Assistance and Financing Support Facilities

Key Examples:

- Global Facility for Disaster Reduction and Recovery: <https://www.gfdrr.org/en>
- The Global Index Insurance Facility (GIIF)  
[https://www.ifc.org/wps/wcm/connect/industry\\_ext\\_content/ifc\\_external\\_corporate\\_site/financial+institutions/priorities/access\\_essential+financial+services/global+index+insurance+facility](https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/access_essential+financial+services/global+index+insurance+facility)
- Global Risk Financing Facility  
(<https://www.worldbank.org/en/topic/disasterriskmanagement/brief/global-risk-financing-facility>) –
- UK Centre for Disaster Protection <https://www.disasterprotection.org/>

### Knowledge Networks and Coordination Tools

- InsuResilience <https://www.insuresilience.org/>
- Fiji Clearing House for Risk Transfer <http://unfccc-clearinghouse.org/>
- Understanding Risk <https://understandrisk.org/>
- Small Island States Resilience Initiative <https://www.gfdrr.org/en/sisri>
- The Insurance Development Forum <https://www.insdevforum.org/>

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