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# Feasibility of anticipatory action in the Pacific Islands region



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# Feasibility of anticipatory action in the Pacific Islands region

**Federico Davila**

University of Technology Sydney, Australia

**Catherine Jones**

Food and Agriculture Organization of the United Nations, Bangkok, Thailand

**Kara Jenkinson and Malia Talakai**

Food and Agriculture Organization of the United Nations, Apia, Samoa

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# Foreword

This timely report aims to enhance our understanding of anticipatory action in Small Island Developing States (SIDS). It is much needed. Climate change and extreme weather are becoming ever increasing threats to millions of people in the region.

Pacific Island governments and communities are all too familiar with the consequences of more frequent intense weather events. These events inflict substantial damage and losses, especially on the agricultural sector. Nearly half of the Pacific population was affected by a major disaster between 2011 and 2020 alone. As we confront this crisis, it becomes imperative to adopt innovative approaches.

Growing evidence underscores the cost-effectiveness and impact of anticipatory action. Instead of rebuilding what has been lost, anticipatory action empowers governments and communities to safeguard their hard-won achievements whilst mitigating losses. For every dollar invested in anticipatory action, families stand to gain a return of more than seven dollars. This evidence, however, is primarily from other regions. That is why this report is so needed.

It provides insights and recommendations following extensive engagement with national and regional stakeholders, civil society groups, and community leaders at the forefront of anticipatory action.

A key recommendation is to establish a dedicated fund to coordinate anticipatory action. It is imperative that anticipatory action is underpinned by long-term efforts and investments, seamlessly integrated into key strategic frameworks such as the [Pacific Framework for Resilient Development](#) and the [2050 Strategy for Blue Pacific](#).

I trust that this report will serve as a valuable resource for policymakers, practitioners, and stakeholders involved in disaster management and resilience-building efforts across the Pacific Islands. I am confident that it will boost our collective efforts to scale-up anticipatory action in this region.



**Xiangjun Yao**

FAO Representative and Sub-regional Coordinator for the Pacific Islands  
Food and Agriculture Organization of the United Nations



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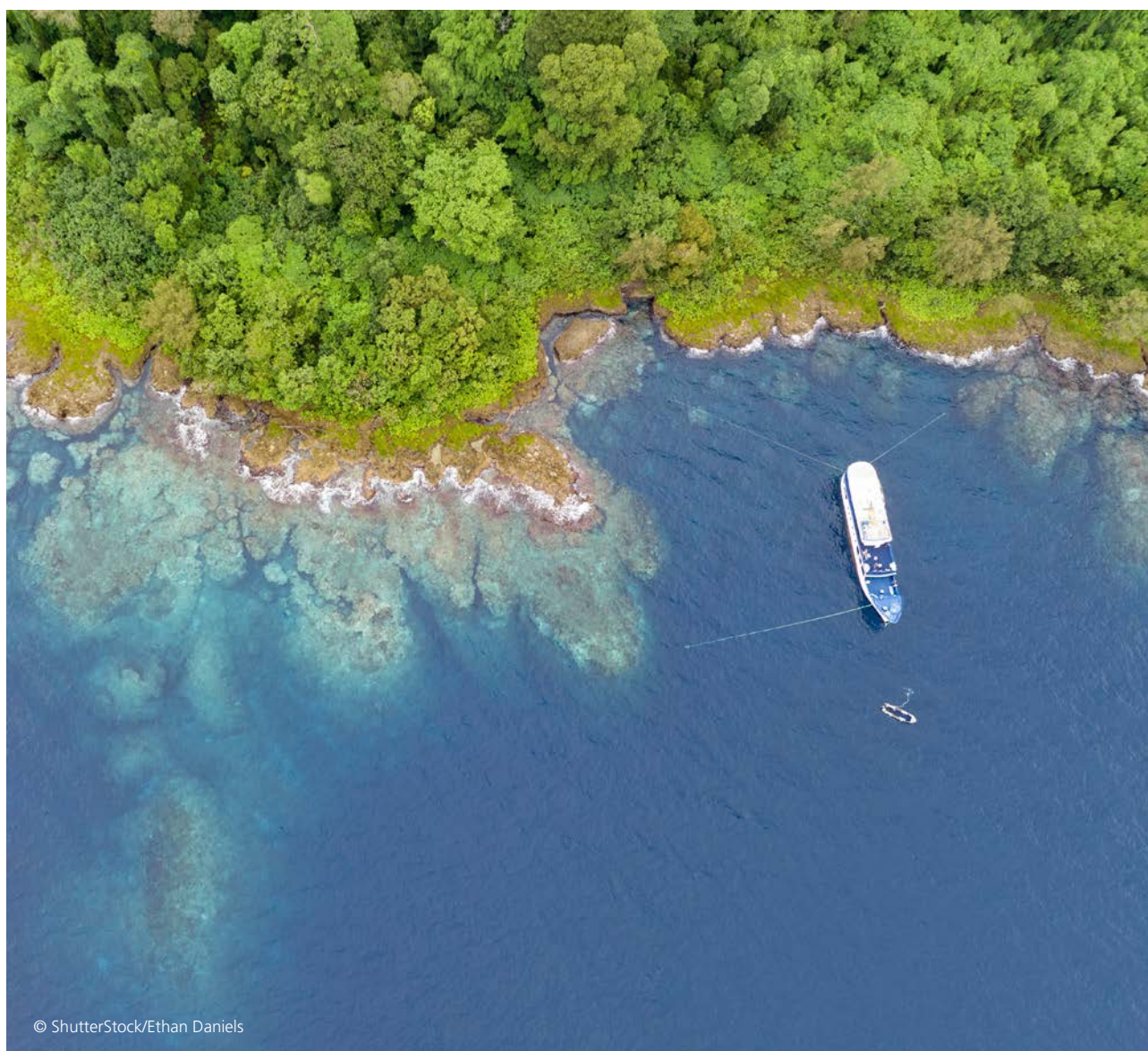




# Abbreviations

<b>APMCDRR</b>	Asia-Pacific Ministerial Conference on Disaster Risk Reduction
<b>CBDRM Toolkit</b>	Palau Community Based Disaster Risk Reduction Toolkit
<b>CCA</b>	Fiji Climate Change Act (2021)
<b>CERF</b>	Central Emergency Response Fund
<b>COSPPac</b>	Climate and Oceans Support Program in the Pacific
<b>CREWS</b>	Solomon Islands Climate Risk and Early Warning Systems Initiative
<b>DRM</b>	Disaster risk management
<b>DRF</b>	Disaster risk finance
<b>DRR</b>	Disaster risk reduction
<b>EWS</b>	Early warning systems
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FbA</b>	Forecast-based Action
<b>FbF</b>	Forecast-based Finance
<b>FNCCP</b>	Fiji National Climate Change Policy 2018-2030
<b>FNDMO</b>	Fiji National Disaster Management Office
<b>FRDP</b>	Framework for Resilient Development in the Pacific 2017-2030
<b>IASC</b>	Inter-Agency Standing Committee
<b>IFRC</b>	International Federation of the Red Cross and Red Crescent Societies
<b>MECDM</b>	Solomon Islands Ministry of Environment Climate Change Disaster Management and Meteorology
<b>NAP</b>	Fiji National Adaptation Plan
<b>NDMA</b>	National Disaster Risk Management Act
<b>NDCA</b>	Solomon Islands National Disaster Council Act (1989)
<b>NDC</b>	Solomon Islands National Disaster Council
<b>SNCCP</b>	Solomon Islands National Climate Change Policy 2012-2017
<b>SNDMO</b>	Solomon Islands National Disaster Management Office
<b>NDMP</b>	Solomon Islands National Disaster Management Plan (2018)
<b>NDRRP</b>	Fiji National Disaster Risk Reduction Policy 2018-2030
<b>NDS</b>	Solomon Islands National Development Strategy 2016-2035
<b>NEC</b>	Palau National Emergency Committee
<b>NEMO</b>	National Emergency Management Office of Palau
<b>NEOC</b>	Solomon Islands National Emergency Operations Centre
<b>NIWA</b>	National Institute of Water and Atmospheric Research
<b>OCHA</b>	United Nations Office for Humanitarian Affairs

<b>ODI</b>	Overseas Development Institute
<b>PCRAFI</b>	Pacific Catastrophe Risk Assessment and Financing Initiative
<b>PICT</b>	Pacific Island Countries and Territories
<b>PIFS</b>	Pacific Islands Forum Secretariat
<b>PNDRMF</b>	Palau National Disaster Risk Management Framework (2016)
<b>RCCC</b>	Red Cross Red Crescent Climate Centre
<b>REAP</b>	Risk Informed Early Action Partnership
<b>SIDS</b>	Small island developing states
<b>SIMS</b>	Solomon Islands Meteorological Service Division
<b>SOPs</b>	Standard Operating Procedures
<b>TWGAA</b>	Asia-Pacific Regional Technical Working Group on Anticipatory Action
<b>UNDRR</b>	United Nations Office for Disaster Risk Reduction
<b>WFP</b>	World Food Programme



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# Executive summary

This report seeks to expand the understanding of anticipatory action in Small Island Developing States (SIDS), with a focus on the geographic and socio-institutional aspects of independent Pacific Island Countries in the South-West Pacific Ocean. This report provides a summary of regional and selected national contexts and approaches to the building blocks of anticipatory action in the Pacific Island Countries region.

Through a combination of workshops and interviews with government agencies, regional organisations, international non-governmental organizations (NGOs), multilateral groups, and country-based participants, the report provides a synthesised context for anticipatory action in the region. A case study sections presents the anticipatory action context for Palau, Solomon Islands, and Fiji. The discussion and conclusions point towards the feasibility of advancing anticipatory action and the broad governance that will need to be facilitated to formalise anticipatory actions.

The overall framework of analysis was centred on understanding how the following three building blocks of anticipatory action exist and can be expanded on in the Pacific region:

- **Building Block 1:**  
Risk information, Early Warning Systems, and forecasts
- **Building Block 2:**  
Design, planning, and delivery of anticipatory actions
- **Building Block 3:**  
Pre-arranged financing

A total of 41 people were involved in either workshops or interviews for this study. This study was conducted in two phases. Phase 1 (2022) focused on regional stakeholders working in the Pacific, including experts working in humanitarian development, science and technology, regional policy, and civil society. Phase 2 (late 2022-mid-2023) focused on understanding the underlying systems that exist for the three building blocks of anticipatory action in different countries. This was done through a Regional Sensitization Workshop held in March 2023, and three field missions to Palau (December 2022), Solomon Islands (April 2023), and Fiji (May 2022, June 2023).

## Phase 1: Regional stakeholder recommendations

Engagement with regional stakeholders and civil society groups led to the following results and areas of action for regional anticipatory action development:

1. **Establishing a discrete fund to coordinate anticipatory action development and advocacy.** Participants indicated that a coordination group could leverage from existing Working Groups, such as Technical Working Group on Disaster Risk Financing (DRF) established in 2019 and the Pacific Humanitarian Country Team. However, an anticipatory action focus needs to follow the clear Three Building Blocks approach and bring stakeholders with expertise in all building blocks. The Pacific Resilience Partnership, under Pacific Islands Forum Secretariat (PIFS), as of 2023 is the main 'community of practice' body linking stakeholders.
2. **Frame anticipation as core to long-term resilience, not just a short mitigation measure.** Participants noted the need to 'focus on the long-term nature of anticipation' and how it supports the capacity of institutions and people to respond to shocks. Anticipatory thinking is inherently about preparing for future scenarios by drawing on previous experience, traditional knowledge, and current knowledge.
3. **Enable regional and country level deliberation on anticipatory action.** Most conversations to date have been held at a regional level, however more in-depth discussions, tailored to the needs and political economy and financial system of each country, needs to be done. Such action further needs to ensure future evidence base collection and needs are done through government and community lens to work towards a sustainable approach from the outset.



4. **Understand roles, responsibility, and levels of influence.** This includes the power that donors hold in setting narratives and directing funding, the influence of traditional knowledge and rural decision-making processes, and the varied levels of power different ministries have in each country. Similarly, this includes ensuring sovereignty and ownership by national governments is not eroded at the risk of donors 'driving' the agenda.
5. **Study the intersections of anticipatory action and traditional knowledge and experiences in planning for disasters.** The accelerated impacts of climate change are likely to influence and adapt traditional planning mechanisms. For example, in Fiji, communities would previously store yams and taro in preparation for a large cyclone which can keep up to a year if stored correctly or bury their boats underneath the sand to ensure they do not get damaged by the winds. However, as cash has now become a key tool, such measures are being increasingly abandoned as such support will cover their immediate needs instead.
6. **Crystallise specific actions for the North, Southwest, and South Pacific, given diversity of geography and politics.** This relates to the very different geographic climatic context, agricultural and fisheries context, and political economy of climate finance and humanitarian work in the regions. This was also highlighted in the North Pacific case study (next chapter). Anticipatory action strategies, while they may offer a 'regional vision', are likely to be most impactful with country level strategies.

## Phase 2: Palau, Solomon Islands, and Fiji case studies

Field trips to Palau, Solomon Islands, and Fiji were carried out to interview locally based practitioners and experts in anticipatory action. The interviews were complemented by comprehensive desktop analysis of the disaster risk and anticipatory action context for each of the countries. A summary of recommendations for each of the countries, and the feasibility of anticipatory action, is summarised in Table 1.

Operationalising country specific anticipatory action plans and finance will require continued coordination and improvements in data quality, monitoring and evaluating pilots, and improving

political understandings of the value of anticipatory action. The results points towards areas of opportunity for advancing anticipatory action in the Pacific as follows:

**Approach anticipatory action with an understanding of different knowledge systems and approaches to anticipating and managing disasters.** The experiences of disasters in the Pacific points towards both formal and informal ways of managing shocks. As such, it is imperative that anticipatory action in the Pacific acknowledges the existing regional and national policy environments that exist, and strongly draws from the in-built experiences and knowledges of shocks that communities in urban and rural areas hold.

**Conduct country level detailed sensitization and analysis of locally led anticipatory action design.** While regional coordination bodies remain salient in advocacy, coordination, and research dissemination, the practicalities of anticipatory action are best targeted to country level policy and legal conditions. Future pilots and funding ought to consider these local public policy architectures to make anticipatory action relevant to the development pathway of target countries.

**Develop Technical Standards for specific Pacific countries and their geography and institutional capacities.** Technical Standards may be most suitable at country level, or cross-country levels. The Asia-Pacific Technical Standards already exist and provide a current and strong baseline for developing anticipatory action systems. Embedding and contextualizing these in country levels would help clarify the specific hazards, roles and responsibilities, and data, planning, and finance mechanisms needed for the country.

**Develop Sector specific impact based forecasting.** The Pacific has abundant post-disaster assessments, and while these likely have different methodologies, a synthesis activity could provide an overview of scenarios of possible impacts based on historical data and linking this to future forecasts. Work in this area is already being cornerstone by the World Meteorological Organization and sectoral agencies with government counterparts could further boost efforts. Focusing on impact forecast for major sector impacting livelihoods and health (such as infrastructure, agriculture, and water services) could be a strong starting point.

**TABLE 1: SUMMARY OF RESULTS AND ANTICIPATORY ACTION FEASIBILITY FOR PALAU, SOLOMON ISLANDS, AND FIJI**

Country	Summary of results and anticipatory action feasibility
Palau	<p>There is a strong basis to start anticipatory action development. This is largely due to the strong presence of State Management Plans that have been socialised and embedded into the local governance context. The de-centralised governance system for DRM in Palau enables humanitarian actors to work directly with the state management committees and reduce the transaction costs of operating at national levels. Data and forecasts are relatively robust for rapid onset hazards and pushing for some sector-specific impact-based forecasts could help formalize anticipatory action. Finance is unlikely to be from the public budget right away, so an anticipatory humanitarian fund pool is needed.</p> <p>Palau faces relatively moderate natural disaster risk and mainly experiences tropical storms, drought, and tidal surges. Cyclone intensity and/or drought are the most relevant hazards that are likely to impact Palau, with more rainfall intensity predicted (CFE-DM, 2023).</p>
Solomon Islands	<p>The country has an enabling environment for anticipatory action, however the centralised approach to governing disasters and geographic spread of the country will pose challenges for formal anticipatory actions reaching remote communities.</p> <p>Using rural community action plans and traditional anticipatory mechanisms is critical for community ownership and understanding of anticipatory actions and its benefits.</p> <p>National institutions which oversee the governance of disasters will need to play a role in linking triggers to formal actions and finance. Piloting anticipatory action in rural and coastal communities (who may face flooding and storm surges) could be done by building on the Community Disaster Management Plans.</p> <p>Importantly, informal approaches to anticipatory action that use traditional knowledge could be strengthen and developed where needed. Civil society organisations (e.g., World Vision, Save the Children) have worked with communities to develop these plans. There is limited clear finance options to enable anticipatory actions, including clear responsibility of who would administer the finance mechanisms.</p> <p>Drought, floods, and cyclones are the main hazards posing risks to Solomon Islands’ livelihoods and development (UNDRR, 2023).</p>
Fiji	<p>There is high feasibility in Fiji to build from extensive experience in disaster preparedness, a strong Cluster System, and ongoing work to develop impact-based forecasts specially for the agricultural sector.</p> <p>The extensive post-cyclone assessments and growing skills in the Ministry of Agriculture, present an excellent opportunity to start developing models on the potential impacts of cyclones in crops and livestock sectors, and use this to develop anticipatory plans. Fiji, in collaboration with the World Food Programme and the Department of Social Welfare, have been further refining social protection measures, making Fiji a suitable candidate to roll out social protection based anticipatory actions and action planned for the upcoming joint UN effort Pilot on Cyclones.</p> <p>However, some work is still needed to advance public and private finance coordination that is anticipatory rather than only reactive to shocks. While cyclones are now the most prominent risk being addressed, floods and droughts are also priorities.</p>

**SOURCES:** Center for Excellence in Disaster Management and Humanitarian Assistance. 2023. Palau: Disaster Management Reference Handbook. CFE-DM. UNDRR. 2023. Disaster Risk Reduction in the Solomon Islands. Suva, UNDRR, Sub-Regional Office for the Pacific.

**Develop finance mechanisms that are anticipatory by design.** Most of the existing finance systems described in this study focus on post-shock experiences. Some small examples of parametric insurance exist, but this is not suitable for low-income vulnerable communities given the costs and the requirements for eligibility. Furthermore, insurance by definition is not anticipatory, it is paid out post-shock. Public budgets are limited, and while some allocation exists for disasters in public budgets, this is often for post-event. Anticipatory finance needs to consider the scenarios and likelihood of events and be comfortable with the uncertainty that exists in any predictions.

**Research and monitoring of pilots.** The Pacific region has highly skilled professionals with experience working across science, research, and policy for development. It is crucial for any pilots that are developed, notably through large funding partners, to have strong monitoring, evaluation, and research components to understand how interventions can be improved in the future. The gathering of such information should be tailored to align with the specific requirements and preferences of the respective governments.





“ This report provides a summary of regional and selected national contexts and approaches to the building blocks of anticipatory action in the Pacific Island Countries region. ”

# Introduction

At its broadest level, anticipation relates to attempting to understand and imagine the future and is a constant feature of human behaviour. Anticipatory practices – such as thinking about the future, and taking action on that thinking – helps sensitize societies to the decisions that are made in the present in order to prepare for the future (Poli, 2010).

Anticipatory action has evolved from extensive experiences in disaster risk management (DRM) and preparedness, along with advances in climate forecasting and finance. Anticipatory action offers an integrated framework for linking science, traditional knowledge, disaster planning, and finance mechanisms as a system to proactively prepare for future shocks.

Anticipatory action refers to actions triggered before a crisis in order to mitigate the worst effects of the crisis, or even avoid crisis altogether (Levine *et al.*, 2020). Anticipatory actions come in many forms, but they are typically based on early warnings, always come before the shock has impacted people, and are matched with pre-allocated and flexible financing. Anticipatory actions are highly time-sensitive and connected to forecasts and associated pre-agreed triggers for taking action, and often have a finance and/or social protection based response to protect lives and infrastructure (ASEAN, 2022) (Figure 1).

While there has been accelerated implementation of anticipatory actions in Africa and Asia, largely by the Food and Agriculture Organization of the United Nations (FAO), the International Federation for the Red Cross (IFRC), and the World Food Programme (WFP), START Network and Office for Humanitarian Affairs and Coordination (OCHA), there is a lack of explicit use of anticipatory action design, planning and implementation for Small Island Developing States (SIDS). SIDS are among the world's most vulnerable states to climate impacts, which are accelerating food insecurity, water and food-borne disease, and human displacement (Hayward *et al.*, 2020).

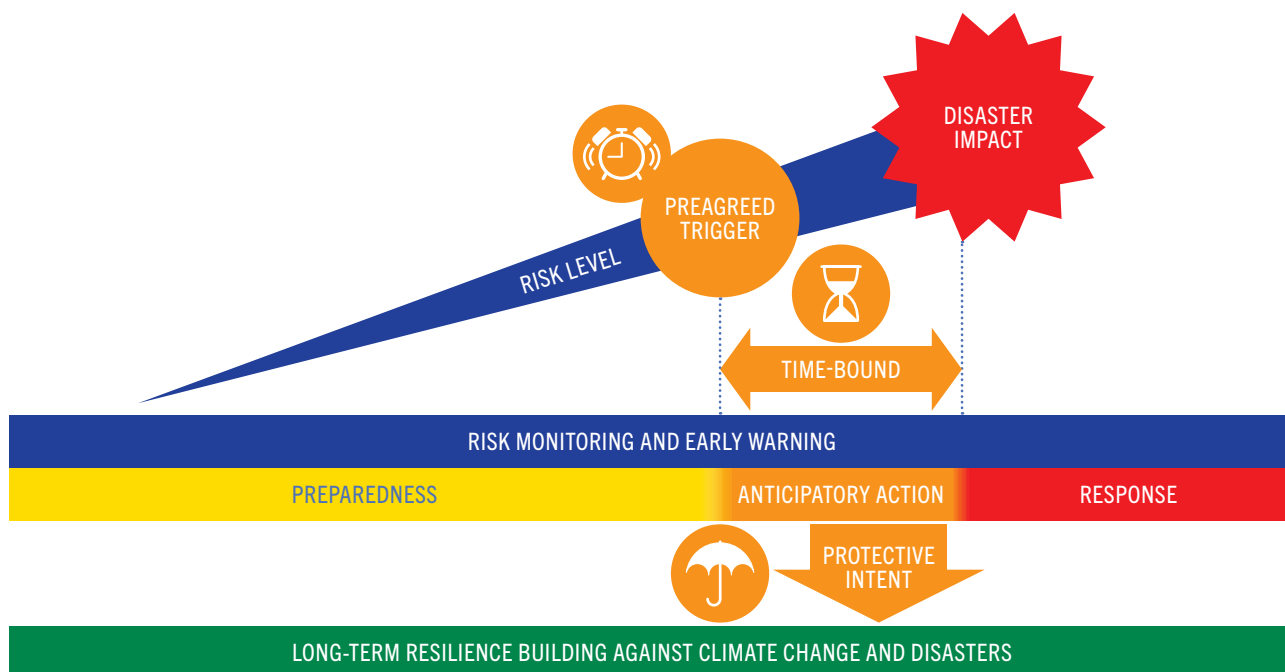
A recent global review of anticipatory action points to over seven million people across 35 countries being covered by formal anticipatory action plans, with USD 138 million of pre-agreed financing (Anticipation Hub, 2022). The only island nations to have anticipatory action plans are Timor-Leste (drought), the Philippines (cyclone, drought, riverine flood, and disease outbreak), the Dominican Republic (cyclone) and Madagascar (cyclones, drought).

At the time of writing, there are no formal anticipatory action plans for any SIDS beyond Timor-Leste (Anticipation Hub, 2022). Besides a recent study into the potential of anticipatory action for Caribbean Islands (Wilkinson *et al.*, 2021c), and an investigation into anticipatory action for Pacific Islands' water, energy, and transport sectors (Wilkinson, 2021), there has been limited studies into the potential of anticipatory action for the Pacific Island Countries region. The gap for linking anticipatory action with the Pacific Islands' expertise in managing disasters is clear and one with immense potential to advance knowledge and support future development investments.

In light of this, this report seeks to expand the understanding of anticipatory action in SIDS, with a focus on the geographic and socio-institutional aspects of independent Pacific Island Countries in the South-west Pacific Ocean.

**This report provides a summary of regional and selected national contexts and approaches to the building blocks of anticipatory action in the Pacific Island Countries region.** Through a combination of workshops and interviews with international NGOs, regional governance and science agencies, multilateral groups, and country-based participants, the report provides a synthesised context for anticipatory action in the region. A case study section presents the anticipatory action context for Palau, Solomon Islands, and Fiji. The discussion and conclusions point towards the feasibility of advancing anticipatory action and the broad governance that will need to be facilitated to formalise anticipatory actions.

**FIGURE 1: KEY TIMING OF ANTICIPATORY ACTION WITHIN THE WIDER DISASTER RISK MANAGEMENT SYSTEM**



**SOURCE:** ASEAN. 2022. *ASEAN Framework on Anticipatory Action in Disaster Management*. ASEAN Committee on Disaster Management. <https://asean.org/wp-content/uploads/2022/06/ASEAN-Framework-on-Anticipatory-Action-in-Disaster-Management.pdf>

## Framework of enquiry

At a theoretical level, the questioning of institutions, governance, and levels of influence for anticipatory action falls within the study of governance architectures for sustainability. This theoretical lens focuses on the interlocking web of widely shared principles, institutions and practices that shape decisions at all levels (Biermann, 2007). In analysing the architecture of sustainability challenges, attention is paid to fragmentation, complexity, and the multi-scale interactions of institutions and actors (Burch *et al.*, 2019). These thematic areas are suitable for the topic of anticipatory action, as it is a field that draws from institutions at multiple scales, with varying priorities and levels of influence, that ultimately seek to support and manage the impacts of climate change and uncertainty on society.

Within this theoretical framing, we used the Building Blocks of anticipatory action to organise our methodological activities. While there are different humanitarian and multilateral agencies involved in delivering anticipatory actions, they all follow an approach around three common characteristics: the pre-agreed triggers and forecasts for allocation, pre-agreed actions, and allocated and guaranteed funding for the actions before a disaster strikes (Tozier de la Poterie *et al.*, 2023).

### Building Block 1: Risk information, Early Warning Systems, and forecasts

This building block involves the dissemination of risk information via early warning systems (EWS) and the determination of pre-agreed triggers. The IPCC summarises EWS as integrated systems of hazard monitoring, forecasting and prediction, disaster risk assessment, communication, and preparedness activities systems to enable individuals, communities, governments, businesses to take timely action to reduce disaster risks in advance of hazardous events (Coughlan de Perez *et al.*, 2022). EWS provide an overview of the risk to people and infrastructure, and include weather forecasts, seasonal outlooks, sector specific impact analysis, and pre-disaster risk assessments. EWS require adequate communication channels and do not only provide information, but also what the implications of the warning are for people and infrastructure.

An important point of difference between anticipatory action and other disaster preparedness is the use of pre-agreed triggers. Trigger mechanisms are the type of information to be used when anticipatory actions are to be provided – for example, the forecasts, lead time, and responsibility for monitoring activation.



A threshold is the specific point on a spectrum that is used to release and commence activities (Asia-Pacific Technical Working Group on Anticipatory Action, 2023).

For rapid onset hazards (such as cyclones, floods, or cascading hazards after an initial shock), the window of opportunity to act is extremely short, often 5-10 days, and based on short-time forecasts. Triggers may include short-term forecasts, cyclone projected speed and direction, amount of rainfall, and associated impact forecasts.

For slow-onset hazards such as drought, sea level rise, ocean acidification, loss of biodiversity, desertification, and increasing temperatures different data can be used. These include seasonal and monthly forecasts, combined with historical impact data, can be used. Here, the lead time is often 1-3 months but can be longer depending on the quality of data. It is also critical to link climate and weather information to seasonal calendars. Actions can include the distribution of drought-resistant seeds or water management support.

## Building Block 2: Design, planning, and delivery of anticipatory actions

The primary objective of this building block encompasses two key elements. First, it involves the careful selection of activities for implementation, guided by predetermined triggers. Second, it centres on the development of collaborative action plans in line with anticipatory action principles. These plans facilitate the comprehensive integration of essential inputs from humanitarian aid, donors, government stakeholders, and community involvement in shaping the response to shocks. General characteristics of selecting anticipatory actions are summarised in Table 2.

## Building Block 3: Pre-arranged financing

This building block relates to specifically allocated funds by donors, humanitarian agencies, and/or governments to directly fund anticipatory action; both to support planning and to activate actions. This relates directly to climate or disaster risk financing and requires clear agreement on risk tolerance and willingness to finance anticipatory action considering the inevitable uncertainty of sudden and slow onset events. Finance can be defined broadly, and may include social protection cash measures, or parametric insurance systems (UNICEF, 2023)

TABLE 2: CHARACTERISTICS FOR SELECTING ANTICIPATORY ACTIONS

Characteristic	Overview
<b>Timebound</b>	Anticipatory actions occur in the window of opportunity between an early warning, forecast or pre-disaster risk assessment, and when a hazard occurs. These time frames vary widely depending on the quality of forecasts and the type of hazards. This time constraint requires pre-existing finance mechanisms to be set aside to allow finance to flow rapidly upon a trigger and for activities to be implemented within a set period of time before the impact.
<b>Protective intent</b>	Rather than responding to needs that developed after a disaster has hit, anticipatory actions take place before an event and intend to protect people and assets that are likely to be affected. Multi-purpose cash, in-kind assistance, and the delivery of services for anticipated needs should be based on an analysis of risk and past disaster losses to ensure that anticipatory action is mitigating likely impacts and reducing costs for response and recovery.
<b>Technically reviewed</b>	In the process of choosing anticipatory actions for implementation triggered by specific events, it is essential to obtain technical validation from experts. This validation might involve the assessment of various aspects, such as the suitability of drought-resistant seeds, the specifications of shelter kits, or the determination of the cash value associated with a minimum expenditure basket. Expertise in this context can be sourced from government technical personnel or collaborating partners who endorse this approach. Moreover, this expertise extends to the local community, particularly those with firsthand experience of the specific hazard in question. Their valuable insights and guidance play a pivotal role in determining the most effective and appropriate actions to take.
<b>Accessible</b>	It is of paramount importance to guarantee that aid reaches the most vulnerable individuals, and that the identified goods, cash, or services can be transported from point A to point B swiftly and efficiently.
<b>Do no harm and no regrets</b>	Anticipatory actions are designed to minimize potential harm and are often implemented on a "no regrets" basis. This is to ensure that they have a positive impact or, at the very least, do not exacerbate existing vulnerabilities or risks.

SOURCE: AUTHORS' OWN ELABORATION.

There are established examples of finance systems for anticipatory action. The majority continue to be ‘housed’ within the humanitarian and bi-lateral aid sector (Scott, 2019), with national governments globally often unable to have specific budget lines allocated for anticipatory finance.

Once the three building blocks are completed, this often leads to the development of an Anticipatory Action Protocols, which specify the geographic location, tasks, responsibilities, timeframe, funding allocation, and types of actions to be taken upon a trigger being met. Anticipatory Action Protocols exist throughout the world in over 60 countries, often developed with national governments for sudden onset hazards such as floods, cyclones, cold waves and volcanic ashfall (Thalheimer *et al.*, 2022).

## Methodology

Data collection for this project was iterative, relying on a combination of networks, snowball sampling, and cold invites for participation in interviews and workshops. Given the speed at which anticipatory action knowledge is developing, both conceptually and with evidence of practice, the literature review focused on major global literature coupled with emerging insights from stakeholders on Pacific-relevant literature and examples. Regional stakeholders included science and research agencies, consultants, civil society groups, and humanitarian groups involved in supporting anticipatory action in at least one of the building blocks of the framework. The country selection was based on the logistical ability to travel to countries where in-country institutions were able to meet government counterparts. Three countries were explored in detail to understand how the building blocks for anticipatory action exist in each country: Fiji, Palau, and Solomon Islands. Like all Pacific nations, countries are highly heterogenous and

lessons are not necessarily replicable between them. Rather, the country analysis focuses on the local institutional and historical experiences with the building blocks of the framework, and the existing enabling environment for up-scaling anticipatory action.

This study was conducted in two phases. Phase 1 (2022) focused on regional stakeholders working in the Pacific, including experts working in humanitarian development, science and technology, regional policy, and civil society. Phase 2 (late 2022- mid-2023) focused on understanding the underlying systems that exist for the three building blocks of anticipatory action in different countries. This was done through a Regional Sensitization Workshop held in March 2023, and three field missions to Palau (December 2022), Solomon Islands (April 2023), and Fiji (May 2022, June 2023). An overview of participants engaged is in Table 3.

**TABLE 3: SUMMARY OF PARTICIPANTS ENGAGED**

Type of participant	Method	Number
Regional stakeholders working in more than Pacific country	Semi-structured interviews (May-September 2022)	8
Australia based civil society groups	Sensitization and concept discussion workshop (July 2022)	9
Country based public agencies, multilateral agencies, local leaders, and non-government agencies	December 2022 – June 2023	11 (Palau) 7 (Solomon Islands) 6 (Fiji)
<b>Total people involved in interviews and workshops</b>		<b>41</b>

SOURCE: AUTHORS' OWN ELABORATION.





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## Overview and contributions of this study

As a scoping feasibility study, and given the diversity in culture, language, institutions, and capacities related to anticipatory action, this study focuses on regional approaches and country level framings of anticipatory action. This report provides an overview of the current state of

literature in anticipatory action and the urgency to include Pacific Island voices and opportunities, and a summary of how regional development agencies and national stakeholders from Fiji, Solomon Islands, and Palau are working within the building blocks of anticipatory action.

### Note on language

While the terminology and systematic planning of anticipatory action is relatively new, acting ahead of a disaster when a forecast is issued to prevent or mitigate expected impacts is not new for the region.

Anticipatory action can also be called: anticipatory humanitarian action, forecast-based financing, forecast-based action, early action, early warning early action, or risk informed early action.

This study used 'anticipatory action' as the overarching concept, building from OCHA's 2021 commitment to use the term for humanitarian responses. For a detailed glossary, see de Wit (2019) and [the Asia Pacific Technical Standards](#) (Asia-Pacific Technical Working Group on Anticipatory Action, 2023).

# Contextualizing anticipatory action for Pacific Island Countries

## The global context of anticipatory action

The Sendai Framework for Disaster Risk Reduction Target G (the Sendai Framework) points towards a need to ‘substantially increase the availability of, and access to, multi-hazard EWS and disaster risk information and assessments’ (United Nations, 2015, p35). The Sendai Framework offers the highest-level international vision for understanding disaster risk, governing and managing disasters, and planning preparedness and responses. Formalized in 2015, the Sendai Framework offers a global context for advancing anticipatory action.

The momentum behind anticipatory action stems from multi-decadal experience in disaster risk reduction and preparedness and associated international finance for disasters and climate impacts. These two substantial fields of work have provided agencies championing anticipatory action with a history of experience on what could be done before shocks hit communities. This experience, combined with advances in EWS, growing acknowledgement of localised and traditional knowledge used for disaster management, and accelerated climate crises (such as famines, severe droughts, and cyclones) has led to a coordinated focus on anticipatory action. A combination of experiences from the IFRC in the late 2000s, FAO in 2016–17, and increasing focus on anticipating rather than reacting to shocks led to growing high-level momentum in anticipatory action.

In 2018, following growing momentum on financing disasters in a way that prevents lives lost, the World Bank and the OCHA sought to pilot ‘anticipatory action’ as a new way of reducing the impact of disasters. Building on decades of experience from the disaster risk reduction development, humanitarian and scholarly community (Lentz and Maxwell, 2022). In 2018, the Disaster Risk Emergency Fund of the IFRC was launched to guarantee allocation of funds to Red Cross National Societies that have approved Anticipatory Action Protocols. In parallel to efforts by the Red Cross, the FAO,

WFP, and the START Network have also developed Anticipatory Action Protocols with national governments, humanitarian, and development and science agencies (FAO, 2018).

The year 2021 was a watershed moment for anticipatory action discussions and financing. In June 2021, during the G7 meeting in the United Kingdom, USD 300 million of new financing was committed for pre-arranged disaster risk finance (DRF) (Taylor, 2022). In September of 2021 officials from 75 UN Member States and leaders from 60 non-government organisations and financial and private institutions met during the High-Level Humanitarian Event on Anticipatory Action in New York, which outlined current work and strategies for making the humanitarian system more anticipatory, and less reactive. Here, a number of international donors indicated an increase of contributions to anticipatory action. For example, the Government of Germany committed to doubling their commitments, and the Government of Ireland to directing 25 percent of humanitarian aid to anticipatory action funding (OCHA, 2021). This accelerated interest has led to a highly dynamic and fast-moving policy and funding environment for anticipatory action, accompanied by implementation by humanitarian agencies, and disaster risk financing, often related to financing after a disaster (Taylor, 2022). In March 2022, the UN Secretary-General launched the Early Warnings for All Initiative linking disaster risk knowledge, warning systems, communication, and preparedness plans with a target investment of USD 3.1 billion between 2023 and 2027.

## Anticipatory action in the global literature

**There has been substantial grey and academic literature related to anticipatory action since 2015<sup>1</sup>**

Much of the global literature on anticipatory action has been advanced by key agencies involved in the research and/or practice of anticipatory action: the Overseas Development Institute (ODI), which has had an explicit focus on

<sup>1</sup> 2015 was used as the baseline year for the literature review given Paris Agreement climate finance commitments, and starting point for the SDGs, and the Sendai Framework agreement.



the research-development nexus, the IFRC, with a strong humanitarian development focus, have published both grey literature and academic articles on anticipatory action (Tozier De La Poterie *et al.*, 2022). A more recent body of grey literature in the agriculture and climate change context has emerged from the FAO, the START Network, the OCHA, and the WFP, who have been involved in both theoretical and empirical testing of anticipatory action. This section summarises the common results from the four bodies of literature in anticipatory action in two clusters: theory and evidence synthesis, modalities and upscaling anticipatory action. This review did not investigate specific technical documents related to the specific building blocks (for example, the use of EWS or specific finance mechanisms in specific case studies), given each of the building blocks have extensive scientific and policy associated literature which are beyond the scope of this specific study.

#### **Theory and evidence synthesis cluster**

ODI has produced a series of reports looking at anticipatory action initiatives (Weingärtner and Wilkinson, 2019), financing and targets in early action (Montier *et al.*, 2022), contributions to rural livelihoods (Levine *et al.*, 2020), up-scaling pathways (Wilkinson *et al.*, 2018), and a series of country studies analysing the approach and benefits (Levine *et al.*, 2023). ODI has also conducted a series of studies into countries in Asia and Africa (Tanner *et al.*, 2019), and the Caribbean region (Wilkinson *et al.*, 2021c), building the evidence base of anticipatory action.

In a review by Levine *et al.*, (2020), the authors argue that for anticipatory action, a combination of barriers need to be continuously addressed in context-specific ways. One of these is the primary need for humanitarian aid's mandate to protect lives in the short term, and the requirement to target those with greatest need and urgency. Coupled with this are the challenges of being timely during an emergency, and the tensions that exist between institutions in agreeing on triggers and risk thresholds associated with financing responses. Political disagreements (in national governments and between humanitarian agencies) on whether a situation requires action, and the internal bureaucracies hindering 'speedy' action conflate with the challenges of 'doing' anticipatory action.

While there is increased policy and humanitarian development focus on anticipatory actions, the analytical evidence base has been building slowly, and much of the work is produced by authors from within the implementing agencies (Weingärtner and Wilkinson, 2019). A challenge in conducting these studies is the speed in which anticipatory action takes place (often with days of warning for rapid-onset shocks), and the lack of baselines and counterfactual measurements (Gros *et al.*, 2019). The challenges of conducting rigorous studies in humanitarian and disaster contexts means that external agencies cannot document change, and thus rely on implementing agencies to report on outcomes.

Despite these challenges, studies have started to emerge documenting lessons from trying to implement anticipatory action. One study explored anticipatory actions for heatwaves in Viet Nam, where cooling centres were opened in the summer of 2019 upon triggers being reached twice. During two activation events, over 2000 people from vulnerable demographics were able to access cooling centres, and overall they reported an ability to rest and reduce or eliminate symptoms associated with overheating (Dinnissen *et al.*, 2020). A recent synthesis study by Tozier de la Poterie *et al.*, (2023) investigating anticipatory action in 18 countries across three continents found that the process can establish key partnerships for scaling actions. However, ongoing challenges exist relating to climate services development, project ownership, dealing with uncertainty, managing data and monitoring progress. They found that improving ownership of programs, supporting, strengthening local capacities, and improving climate services and data sharing are core areas of development for the future of anticipatory action. There have also been documented positive impacts of providing cash upon activation of triggers as an anticipatory response to a shock (Gros *et al.*, 2019). In a study into drought forecasts and anticipatory actions, Mwangi *et al.*, (2022) found that weak coordination and institutional funding make anticipation practice difficult. Overcoming this challenge for drought requires early deliberation and co-production of decisions and impact forecasts that can lead to ownership of decisions and actions (Mwangi *et al.*, 2022).

There is a complementary body of evidence that articulates the broader characteristics of resilience and adaptive capacity that exists among rural communities, and how this intersects with formal early and anticipatory action activities. In Mongolia, severe winter conditions (dzud) can lead to starvation among cattle, severely impacting the livelihoods of pastoralists in the country. A study by Chadraabal *et al.* (2020) explored this challenge and found that experienced herders managed pasture allocation, moved livestock to huts, moved seasonally, and used plant, climate, and celestial observations to plan their management strategies. The study compared different areas of Mongolia and found that the combination of traditional coping mechanisms, efficiency, and willingness of government agencies to assist in dzud preparedness made major differences in livestock mortality. Another example is in Somalia, where a study pointed towards the existing livelihood support and coping strategies agriculturalists had as part of their management of combined hazards, such as locusts, market price fluctuations, COVID-19, and rainfall variations. While anticipatory action protocols were being developed by OCHA and FAO, rural communities already had some systems in place to manage the hazards (some, for example, had already chosen to relocate their herds) (Levine *et al.*, 2021).

### **Modalities and upscaling anticipatory action cluster**

There is a major body of evidence behind cash-based and social protection-related measures as an anticipatory modality to mitigate the impact of disasters. It must be made clear that these measures are not always linked to forecasts and pre-agreed triggers, but are increasingly part of action plans and therefore a financial response to imminent disasters (Easton-Calabria *et al.*, 2022). Social protection systems are largely based on beneficiary lists of vulnerable populations, and humanitarian response agencies are increasingly using these to support cash as a 'shock-responsive' measure to disasters. Previous studies have indicated the mitigation potential of social protection measures in light of climate risk (Ulrichs *et al.*, 2019). Social protection can also be provided through traditional humanitarian response systems, such as emergency food rations or vouchers to support different aspects of disaster preparedness.

Analysis of upscaling anticipatory thinking and action points towards five different pathways, depending on the hazard and context of the warnings and planned actions. The first is physical scaling, which relates to replicating the processes in new geographic locations and adding new hazards to the response. The second is social and involves increasing the coverage and scope of the people targeted by actions. The third scaling is political, and involves the adoption of policies and budget commitments specifically designed for forecast-based actions (such as the DREF). A fourth conceptual pathway relates to transforming mindsets and administrative systems in different contexts and building capacities to embed anticipatory thinking in everyday planning and responses. A fifth final pathway relates to comprehensive approaches, where multiple modalities of information and response are provided (such as cash transfers and information on livelihood protection). These five up-scaling pathways offer a loose framework for understanding how anticipatory action can be developed and advanced in contexts where elements of the approach exist, but no formal structure around the three building blocks is in place.

IFRC have been one major champion of anticipatory action and associated terms such as Forecast-based Finance (FbF) or Forecast-based Action (FbA). Within this, they use a combination of forecasts to agree on triggers for activation, assigning roles and responsibilities in the plans of action (known as Early Action Protocols), and use those pre-agreed activities to release funding from the IFRC's Disaster Relief Emergency Fund (Tozier De La Poterie *et al.*, 2022). Following ongoing work in the late 2000s, the Red Cross Red Crescent Climate Centre (RCCC) evolved the concept of FbF as an example of how anticipatory action can be done within the DRF landscape – linking pre-arranged financing to pre-established plans of action (Coughlan de Perez *et al.*, 2015).

FAO and WFP have also made substantial contributions to examples of ways of doing anticipatory action and measuring its associated benefits and impacts. For example, WFP has summarised the challenges and approaches to designing and collecting evidence for anticipatory action. They note that given the relative nascency of anticipatory action protocols, there is limited empirical evidence of the impacts of pilots and initiatives (Weingartner, 2020). Improving the documentation of baselines, counterfactuals,

and monitoring frameworks remains an important aspect of anticipatory action pilots. WFP has further developed guidelines for monitoring and evaluating pilots (WFP, 2021). Complementing this, the FAO has had extensive experience developing Anticipatory Action Protocols for slow and rapid onset hazards and have successfully supported anticipatory actions in different countries. Since 2016, FAO has supported extensive country-level work on Anticipatory Action for several slow-onset hazards such as drought (e.g. in Afghanistan, Kenya, Madagascar, Pakistan, the Philippines and the Sudan, among others), cold waves (e.g. *dzud* in Mongolia), and pests and diseases (e.g. desert locusts in the Greater Horn of Africa and Yemen, and West Africa). The FAO have experience in documenting the types of actions needed to protect agricultural systems and livelihoods, including a range of measures such as input provisioning, water management and conservation tools, economic access to food, and livelihood diversification (FAO, 2022).

Globally, the Risk Informed Early Action Partnership (REAP) and Anticipation Hub, coordinated by various Red Cross institutions in partnership with the START Network, OCHA, WFP,

FAO, and Welt Hunger Life, supports global synthesis and advocacy of anticipatory action evidence. In 2022, two major global reports synthesising the state of play were published. These provide a current overview of the multiple approaches to anticipatory action and policy systems that are in place in different regions and across different hazards (Anticipation Hub, 2022). They offer an important starting point for any study or initiative in anticipatory action.

Regionally, the Asia-Pacific Regional Technical Working Group on Anticipatory Action (TWGAA) was created in 2019 to promote regional knowledge sharing and cooperation on anticipatory action. The group is co-led by the IFRC and FAO. As of July 2023, the TWGAA has convened around 80 members from over 25 agencies and has four sub-groups: evidence, triggers, training, and policy. In June 2023, the group was approved to become part of the Inter-Agency Standing Committee (IASC) structure as a key working group endorsed by the Regional Directors. As of 2023, a Community of Practice has also been established in the Pacific which is co-led by the Pacific Islands Forum and the United Nations Office for Disaster Risk Reduction (UNDRR).

## Literature Gap: Pacific Island Countries context and voice

The growing body of grey and academic literature is increasingly providing evidence, critique, and evaluation of anticipatory actions globally. Yet, despite its focus on protecting the most vulnerable from natural hazards, SIDS are notably absent from the literature and evidence. While there has been some progress in advancing anticipatory action thinking for Caribbean Islands (Wilkinson *et al.*, 2021a; Wilkinson *et al.*, 2021b), there is little analysis of how Pacific Island Countries are undertaking anticipatory action.

This is a notable conceptual and evidence gap, given Pacific Island Countries are among the most vulnerable to the impacts of climate change, yet also have comprehensive resilience and climate change policy frameworks, along with extensive localised experiences of managing disasters. Given this lack of linking the Pacific experience to anticipatory action, it is imperative to document the Pacific policy and development context that lays the foundation for formalising anticipatory action systems.

## Pacific Island Countries' anticipatory action context

In September 2022, the Asia-Pacific Ministerial Conference on Disaster Risk Reduction (APMCDRR) emphasised the importance of anticipatory thinking in planning for disasters. The Co-Chair's statement indicated that "investments in preparedness and anticipatory action remain important to address residual risk", and that scaling of finance for anticipatory actions is needed (APMCDRR, 2022). The focus on Asia-Pacific anticipatory action builds from the global momentum indicated earlier.

This has translated to region-based approaches for coordinating and embedding anticipatory action thinking as part of the broader disaster risk reduction (DRR) continuum. For example, in ASEAN, the *2022 Framework on Anticipatory Action in Disaster Management* provides a guidance document on a shared understanding of how to enable anticipatory action in a way that is methodical but responds to country specific needs and institutional capacities.



The enabling environment and political call for anticipatory action is growing stronger in the Pacific, with various DRM commitments which have been endorsed over the past five years, creating a gateway for a regional and national emphasis on anticipatory action. The major foundational political and development frameworks that anticipatory action can support include:

- *The Framework for Resilient Development in the Pacific: Goal 3* – Strengthened disaster preparedness, response and recovery.
- *The Boe Declaration: Strategic Focus Area 2* – Human Security and Humanitarian Assistance (which includes “strengthening and access to climate and disaster risk finance”).
- *2050 Strategy for the Blue Pacific: A long-term vision to secure the future of the Blue Pacific with Climate Change and Disaster key thematic priorities.*
- *The Nadi Declaration: includes a Commitment to Action towards a safer and more resilient region facing disaster risk and climate change.*

*Early Warnings for All:* Launched by the UN Secretary-General in March 2022, the Early Warnings for All initiative aims to ensure every person is protected by early warning systems by 2027. The Pacific region has been identified as a key target region. While the various terms and approaches to anticipatory action are relatively new, the Pacific Islands region has extensive experience and capacities in understanding, monitoring, planning, and responding to disasters. This section summarises the climate and development context (with references that include more extensive technical detail), and the governance and institutional regional context for anticipatory action.

### Climate and development context

Pacific Island Countries comprise more than 2 000 islands and atolls in 22 countries and territories. The total land area of Pacific Island Countries and Territories (PICTs) is approximately only 550 000 km<sup>2</sup>, representing 2 percent of the entire 30 000 000 km<sup>2</sup> of the Pacific region (Barnett, 2011). PICTs are home to 11 million people, of which nearly 50 percent reside within 10 km of the coast and 25 percent are just 1 km from coastlines (Andrew *et al.*, 2019), the majority of which are now living in urban town centres rather than rural areas. Demographically,

over 50 percent of the population is under 50 years of age, and unemployment sits at 23 percent, much higher than the global average of 12 percent (SPC, 2014; Wilson, 2020).

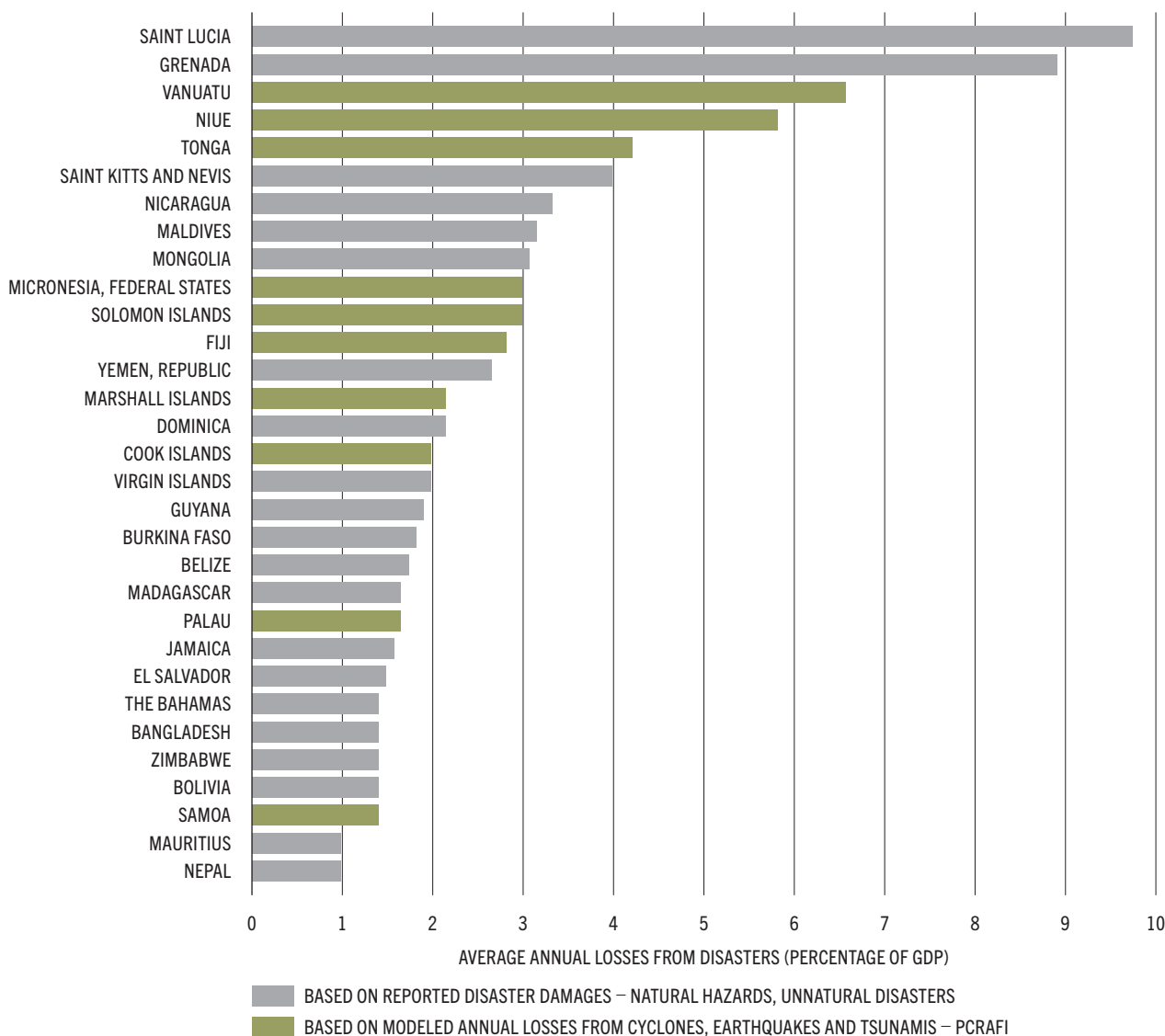
PICTs are among the most vulnerable to the impacts of climate change, with countries like Vanuatu, Solomon Islands, and Tonga frequently among the top 30 most vulnerable countries to climate impacts and World Risk Index rankings (Figure 2). The impacts of climate change are complex and often intersect with other underlying socio-economic conditions, such as poverty, infrastructure and resource access, and livelihood choices. Tropical cyclones frequently impact West Pacific Ocean nations, for example, Cyclone Harold in Vanuatu in 2020, damaged 60 percent of cropland and displaced over 18 000 people (Government of Vanuatu, 2020). Cascading hazards, such as floods, cyclones, and drought, have been intensifying over the last decade and present a combination of human life, economic, and social costs (Table 4). Climate projections for the region indicate that increased severity of floods and cyclones, as well as prolonged droughts in some countries (e.g. Kiribati) have made acting on climate change a top priority for Pacific Island governments and the international donor community.

Geographic diversity in the Pacific means that actions before disasters require place-based understandings and design. The region is agro-climatically diverse, and rainfall varies highly throughout the region. For example, the Port Moresby region of Papua New Guinea has an annual rainfall of 1 125 mm, while East Pohnpei in the Federated States of Micronesia has an average of 4 695 mm per year (Taylor *et al.*, 2016). Water availability also varies greatly throughout the various topographic and geomorphological contexts of different types of islands (Dixon-Jain *et al.*, 2014). For example, volcanic high islands have relatively abundant rainfall and groundwater, providing more stable freshwater for the predominantly rainfed agricultural systems (Weber, 2007). Contrastingly, low-lying atolls that do not generate precipitation are more water scarce, with shallow freshwater lenses and no natural surface water sources (Werner *et al.*, 2017).

Governance and decision making is also varied throughout the region. Politically, some countries developed Western-style parliamentary democratic systems, such as Solomon Islands and

**FIGURE 2: PACIFIC COUNTRY VULNERABILITY**

PACIFIC ISLAND COUNTRIES ARE AMONG THE MOST VULNERABLE IN THE WORLD







SOURCE: PACIFIC CATASTROPHE RISK ASSESSMENT AND FINANCING INITIATIVE (PCRAFI). 2014. *RISK ASSESSMENT SUMMARY REPORT*. AVAILABLE AT: <https://reliefweb.int/report/world/pacific-catastrophe-risk-assessment-and-financing-initiative-pcrafi-risk-assessment>

Vanuatu. Tonga is a constitutional monarchy, and Kiribati a parliamentary representative democracy. Complementing national governments and regional and state-based agencies, traditional decision-making and governance remain influential in managing the day-to-day lives of people throughout the islands (Hassall, 2020). The large biophysical and ecological diversity of the region thus requires strategic planning in linking regional policy and political priorities in managing climate change and working with the traditional knowledge and governance mechanisms that exist at the community level. Issues related to the use of climate forecasts, for example, require a careful understanding of how technical science intersects with traditional understandings of climate change (Magee *et al.*, 2016).

Substantial scientific data synthesis has been produced that points towards the climate context of the Pacific region (for example, BOM and CSIRO, 2014; CSIRO and SPREP, 2021). The detail, uncertainty and associated links to various economic sectors are beyond the scope of this literature context for the study. However, much of this data is the foundation for the regional and national policy leadership in managing climate disasters in the region and forms the underlying basis for developing formal anticipatory action systems in the Pacific. The next section presents a regional overview of the state of activities related to anticipatory action in the PICs region.

**TABLE 4: TYPES OF IMPACTS ASSOCIATED WITH MAJOR HAZARDS IN PACIFIC ISLAND COUNTRIES**

Hazard	Types of impacts
<p><b>Drought</b></p> 	<ul style="list-style-type: none"> <li>• Reduced water availability for human consumption</li> <li>• Reduced agricultural productivity</li> <li>• Increasing costs for alternative water sourcing (notably on atolls)</li> <li>• Possible water-based conflict and social tension</li> </ul>
<p><b>Cyclone</b></p> 	<ul style="list-style-type: none"> <li>• Destruction of infrastructure</li> <li>• Disruption in food value chains, and associated food security impacts</li> <li>• Psychological and mental distress</li> <li>• Possible high loss of human life</li> <li>• Disruption in services (e.g. electricity, water)</li> </ul>
<p><b>Flood</b></p> 	<ul style="list-style-type: none"> <li>• Destruction of agricultural land and infrastructure</li> <li>• Possible high loss of human life</li> <li>• Increased water-borne diseases</li> <li>• Disruption in services (e.g. electricity, water)</li> <li>• Pollution of freshwater ecosystems</li> </ul>
<p><b>Tsunami and volcanic eruptions</b></p> 	<ul style="list-style-type: none"> <li>• Possible high loss of human life</li> <li>• Infrastructure damage</li> <li>• Loss of agriculture land</li> <li>• Pollution and destruction of ecosystems</li> </ul>

SOURCE: AUTHORS' OWN ELABORATION.



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# Regional approaches and framings of anticipatory action

This section draws from material (literature, interviews, workshops) collected and analysed between May 2022 and April 2023. Much of the literature (e.g. policies, previous reports) cited here was sourced through the interviews and meetings held throughout this project with the various stakeholders engaged in the study. This section first presents a summary of the policy and institutional context for anticipatory action in the Pacific, and then an overview of how 'scale and geography' and other important factors determine how anticipatory action is developed in the Pacific region. One major output from this activity is a summary of anticipatory action related initiatives, programs, and projects currently in place in the Pacific region. This is presented in Appendix A.

## Policy and institutional context for anticipatory action in the Pacific region

There are extensive regional frameworks and visions for how the region manages climate change and disasters. The overarching guiding framework for resilient development and disaster management is the *Framework for Resilient Development in the Pacific 2017-2030* (FRDP). This framework draws from the knowledge and experience of multiple Pacific and UN agencies. The framework does not make explicit mention of anticipatory action but has a very strong focus on planning and disaster preparedness, and the use and development of EWS. The FRDP makes clear the need to "protect human rights, such as the right to life, safety, dignity, non-discrimination, and access to basic necessities, to ensure every person has equitable access to humanitarian and development assistance". Complementing this, the Pacific Islands Forum Secretariat (PIFS), as a peak political body in the region, has various frameworks and visions in place where anticipatory action can fit within. The *2020 Kanaki II declaration* emphasises the risks that climate change creates for the region and calls for urgent action to mitigate emissions globally and adapt to climate change. The *Blue Pacific 2050 Strategy* focuses on shaping the future of the region and acting in the present to be

'future-ready', through anticipating, preparing, and responding to climate, geopolitical, and security shocks that will eventuate in the region. Within the disasters financing space, PIFS have help mobilise the concept of 'Forecast Based Finance and Action'. PIFS situates this within the specialised risk reduction instruments way of financing disasters, and outlines financing comes from combination of public, bilateral, and development loans funding.

## There have been limited studies into the potential for anticipatory action in the Pacific region.

In a Red Cross study in 2016 focused on Solomon Islands, Papua New Guinea, and Fiji, the authors found that the geographic diversity of the region leads to a diversity in early warning systems and limits institutional structures capable of implementing FbF (Bailey and RCRCCC, 2016). For example, the challenges of precisely predicting the landfall of cyclones with more than 24 hours notice in very small islands create risks of acting unnecessarily. Flood-based forecasting was also noted as a challenge, as was the modelling linking forecasts to specific impacts.<sup>2</sup>

**Climate and disaster risk finance and insurance are receiving substantial attention in the region (Jain et al., 2022).** PIFS is championing this discourse, for example through the 2023 draft *Roadmap for Disaster Risk Finance* which identifies a strong environment for exploring DRF and its variation in the region but notes a need to **build coherence of DRF with other forms of resilience and climate related finance.**

At a national level, varying levels of climate change planning and disaster preparedness exists. Fiji, for example, has extensive mechanisms to plan for climate change and finance climate responses. Tonga and Vanuatu have several disaster and hazard response plans and mechanisms. However, there is a large variation in levels of institutional structures that support the collection and use of data to plan for a potential disaster throughout the region. Most countries have National Disaster Management Offices responsible for overseeing flooding, climate

<sup>2</sup> Note this report was done in 2016, and the Case Study section of this report points towards an evolution on using forecasts and developing trial anticipatory activities over the last 5 years.



shocks, tsunamis, and earthquake shocks in the region, and work closely with the Meteorological Offices that monitor short- and long-term forecasts for their countries. While capacities, budgets, and risk profiles vary, Pacific leaders continue to be champions of climate action domestically and internationally, pointing towards a rich geographic region where anticipatory action can form part of managing the impacts of future environmental shocks.

**Recent reports and studies have summarised the climate finance context of PICTs, and the role of anticipatory action.** For example, Lund (n.d.) summarises risk financing and insurance contexts through five risk typologies (Table 5). Insurance has also grown in popularity in the Pacific. Fiji Care’s 2017 micro-insurance scheme, jointly implemented by the Pacific Financial Inclusion Program and the Australian Department of Foreign Affairs and Trade, provided products covering the risk of life, accident, health, and funeral expenses. The target audience was primarily sugar cane farmers, and as such was limited in its reach. An assessment of risk insurance in Fiji, Papua New Guinea, Tonga, Samoa, Vanuatu and Solomon Islands found that many small businesses and major agricultural crop sectors are unable to access insurance. with insurance often unaffordable for primary producers and rural people (UNCDF, 2021). The Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI), a multi-agency partnership, is supporting the financial resilience of Pacific Island Countries through the creation of a regional catastrophe risk pool to provide

climate and disaster risk insurance, along with providing technical assistance in disaster risk management and finance. PCRAFI, established in 2013, has paid out USD 6.7 million to various countries in response to various disasters. Payments for major events, such as Cyclone Gita in Tonga in 2018 (USD 3.5 payment), were made within 10 days of the event, enabling rapid financial instruments to support in responding to disasters. While PCRAFI is a substantial initiative supporting disaster management, it is largely focused on capacity building and finance after disasters, reducing its anticipatory intent and thus alignment with anticipatory action (UNICEF, 2023).

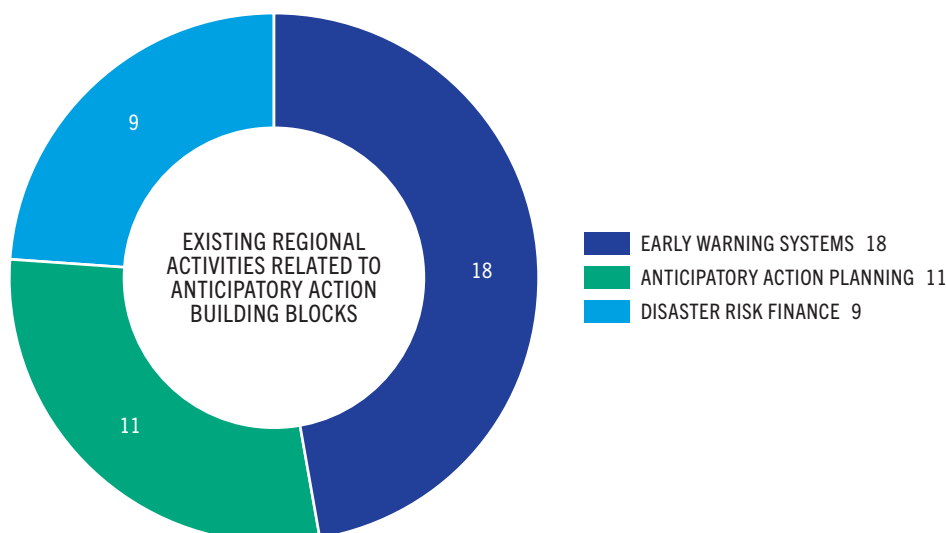
The discussions and workshops with regional agencies indicated that EWS are continuously evolving throughout the region. The combination of work done by NGOs (for example, through the Australian Humanitarian Partnership), extensive scientific efforts and capacity-building support from the Australian Bureau of Meteorology through the Climate and Oceans Support Program in the Pacific (COSPPac), the National Institute of Water and Atmospheric Research (NIWA) Island Climate Updates, and the extensive work by local Meteorology and Natural Disaster Management Offices creates a **growing environment for early warning systems data to be used for formal anticipatory action systems.** The extent to which this data is used for specific impacts on subsectors (e.g. agriculture or aquaculture) and on specific locations remains limited. Triangulating with previous impact studies from previous hazards (some of which can be quite detailed, such as post-cyclone assessments) and using that to

**TABLE 5: RISK FINANCE TYPOLOGIES AND LINKS TO ANTICIPATORY ACTION**

Risk typology	Characteristics	Relevance to anticipatory action development	Status and prevalence in PICTs
<b>Risk reduction and preparedness</b>	Pre-arranged financial instruments that are activated BEFORE a shock, based on triggers and pre-agreed decisions	High – relates to forecast based risk financing.	Limited use of pre-agree forecast based finance mechanisms.
<b>Risk retention instruments</b>	Pre-arranged strategies for increasing national capacity to absorb the financial implications of a disaster event	Limited – while the focus is on pre-arranged plans, the action takes place after a disaster.	Prevalent in most countries, varying from Reserve Funds, concessional loans, etc.
<b>Risk transfer instruments</b>	Largely insurance based, such as parametric insurance, Index-based insurance.	Some – the focus on pre-agreed triggers and associated finance mechanisms relates to AA	There has been increased use and awareness of these over last 10 years
<b>Ex-post policy options</b>	Government actions taken to offset the cost of disasters	Limited – this relates to post-disaster, public budget management.	Budget re-allocations after disasters can occur if cost of recovery is high
<b>International emergency financing</b>	International emergency funds, international aid, and reactive to immediate threats	Some – the emergency funds, such as the IFRC DREF, can be used in an anticipatory way	This is the most common disaster risk finance used in the Pacific.

SOURCE: LUND, D. N.D. *DISASTER RISK FINANCING IN THE PACIFIC*. SUVA, FIJI, GOVERNMENT OF FIJI.

**FIGURE 3:** BREAKDOWN OF ACTIVE REGIONAL ACTIVITIES RELATED TO ANTICIPATORY ACTION BUILDING BLOCKS, AS OF DECEMBER 2022



SOURCE: AUTHORS' OWN ELABORATION.

create a historical impact profile for hazards is important. A challenge remains in translating data (which is often national or sub-national) into specific impacts on economic sectors, and in ways that link warnings with specific impacts for communities. Multiple initiatives funded by bilateral and multilateral donors have created a situation where EWS have substantial investments behind them, but more limited work and funding are going into anticipatory action planning and DRF, and there is a notable gap in projects and activities that explicitly link EWS, action plans, and finance systems (Figure 3). As one stakeholder summarised, “there is a lot of traction, but nobody knows what to do” in regard to formalising anticipatory action.

One area of improvement is related to **socialising and normalising anticipatory action language**. The mixed use of early warning early action, FbF, and now anticipatory action creates a risk of fatigue and/or disengagement by national governments who themselves are championing domestic efforts to manage disasters. Confusion over terminology is not exclusive to the Pacific, with experiences between ASEAN and donors leading to continuous clarification on the overlap and similarity between terms (de Wit, 2019; Scott, 2019). At a regional level, PIFS continues to champion FbF as an umbrella term for linking forecasts to finance. One stakeholder indicated that technical working groups for FbF fluctuate through time in their prevalence. Another stakeholder emphasised the PIFS publication on DRF, which outlines various categories of finance that are linked (or specifically mention) anticipatory action. A number of finance systems

exist throughout the region organised around preparedness and risk reduction, risk retention, and risk transfer (PIFS, 2021). These finance systems are often complex and may face challenges in reaching “the last mile” of communities who are geographically remote from town centres or even communication hubs that can facilitate finance.

**Shock responsive social protection is a tested way of supporting vulnerable populations during a disaster.** This was an issue raised by both civil society and international development agencies as an example of how cash-based systems are in place to support vulnerable communities. There have been recent feasibility assessments and pilot testing between 2018–2022 in Papua New Guinea, Vanuatu, Solomon Islands, and Fiji, led by the AHP. The activities have included:

1. **Cash Readiness Training** and standard operating procedures for staff and organisations across Fiji, Vanuatu, and Solomon Islands.
2. **Establishing agreements with host Government Stakeholders.** For example, Save the Children have signed an agreement with the Fijian Ministry of Women, Children and Poverty Alleviation.
3. **Establishing operational functionality** with financial and other stakeholders. This includes mapping and contracting financial institutions and delivery mechanisms for cash transfer programming. Oxfam have developed ‘blockchain from the bottom up’ process for cash and voucher programming.

4. **Community level consultations:** this has included consultations with community leaders, vendors and establishing mechanisms for feedback.
5. **Collaboration with inclusion partners:** AHP partners have collaborated with key inclusion partners such as Disabled People's Organisations to include them in the cash preparedness work as an active and meaningful participant.
6. **Establishing Cash Working Groups.** These are currently operating in Fiji, Vanuatu and Solomon Islands, with plans to establish one in Papua New Guinea in 2022. The Working Group comprise of Australian Humanitarian Partnership agencies, UN, Red Cross, civil society, and private sector stakeholders.
7. **Undertaking Cash Simulations and Pilots** for training and learning purposes. For example, Oxfam are leading a cash pilot in Solomon Islands as part of their Disaster READY 2022 workplan. Save the Children undertook pilot studies in Papua New Guinea in 2021.

It is important to note that **the cash modality has been used as a response to a sudden shock, and not in an anticipatory (pre-shock) way.** For example, the preparedness work in the various items listed above enabled the Australian and New Zealand Governments to activate NGO partners to deliver cash in response to disasters such as Cyclone Harold (2020, Vanuatu), where Oxfam delivered AUD 250 000 of post-disaster cash. Or the COVID-19 response in Fiji, where Save the Children rolled out a humanitarian cash transfer program of AUD 20 million enabled through the US National Philanthropic Trust. These are all post-disaster responses. Even though they require substantial anticipatory pre-work and form part of disaster preparedness activities, they are not necessarily tied to the triggers, action plans, and financial building blocks of anticipatory action.

There is a broader body of evidence that demonstrates the efficacy of cash based social protection measures as anticipatory action. The most comprehensive analysis of this was conducted by Gros *et al.*, (2019) focusing on the Bangladesh Red Crescent Society Bogra anticipatory action pilot. This study documented how flood forecast-based cash transfers (comparing a sample of 390 recipients with a control that did not receive transfers) supported at-risk communities. The authors found those receiving cash before a flood relied less on loans, had greater access to food, and reported better psychosocial outcomes (Gros *et al.*, 2019). Other experiences from ASEAN point towards efforts to improve the benefits of social protection on gender and social inclusion outcomes by linking cash-based responses to anticipatory actions (ASEAN, 2023). In a synthesis report, UNICEF (2023) documented global experiences of linking existing social protection infrastructure with disaster response. The analysis indicates that using existing databases of vulnerable households and leveraging any existing social protection systems in place can provide dignified options of managing a disaster for low-income populations. In demonstrating foresight, Central Emergency Response Fund funding in the Philippines has been allocated where, if triggered (based on pre-agreed triggers and monitoring), cash top-ups will be provided to 10 000 households three days before predicted landfall (with a benefit of USD 20 per household). The flow of cash has required agreements with the recipient bank (LandBank) which will make the funds accessible upon the triggers being activated (UNICEF, 2023).

It is also important to note that not all social protection measures need to rely on direct cash transfers to recipients. For example, during COVID-19 agricultural inputs and materials were a strong non-cash-based social protection measure provided to rural communities to support their food security. This was done in various Pacific countries and re-invigorated the importance of home gardens for immediate food security. Government in-kind support for materials, agricultural inputs, and other general services can be an important contributor to social protection before a disaster (Robins *et al.*, 2020).

## Regional recommendations and clusters of action

The regional engagements for this activity led to a summary output (Davila *et al.*, 2022) which emphasised the importance of breaking down anticipatory action by scale of engagement. Some stakeholders have a much wider reach within specific communities (notably civil society groups in the Pacific), whereas others may have a

greater capacity to support weather and finance agencies at national levels. Regardless of the structure, enabling anticipatory action in the Pacific requires clarity on responsibilities across scales. The three main scales for anticipatory action, and associated findings from this study, are presented below.

Scale	Recommended actions
<b>Regional</b>	<p>Organise regional technical leadership and coordination, building from the Technical Working Group on Disaster Risk Financing, the Pacific Resilience Partnership and the Pacific Humanitarian Country Team.</p> <p>Develop opportunities for ASEAN-Pacific Conference on anticipatory action and resilience building.</p> <p>Ensure anticipatory action is embedded into ongoing efforts, such as the Early Warning for All and FRDP, to ensure coherence and avoid duplication of systems.</p>
<b>National</b>	<p>Define the anticipatory action approach at the national level. No two systems look the same and the experience at the national level will help build knowledge on the possibilities and challenges of rolling out the initiative in-country.</p> <p>Create examples of how early warning agencies can work with sectorial agencies (e.g. agriculture, urban planning) to develop impact maps.</p> <p>Map and clarify agency roles and responsibilities (government and agencies) and the donors' priorities in anticipatory action.</p> <p>Develop scenarios for the institutional risk-threshold for releasing funds upon an activation trigger.</p> <p>Identify the budgetary requirements for specific anticipatory action modalities (e.g. cash transfer).</p>
<b>Community</b>	<p>Situate any new anticipatory action investments and pilots within existing community preparedness plans.</p> <p>Use the extensive vulnerability mapping done in each country by multiple governments, NGOs, and consultants.</p> <p>Identify provinces within countries where plans can be co-developed with communities to test sector based anticipatory actions (e.g. agriculture).</p> <p>Develop Gender, Diversity and Social Inclusion guidelines for managing the implications for communities of anticipatory actions across different delivery modalities.</p> <p>Identify perspectives from selected communities on their approach to anticipatory action based on customs and traditions.</p>

To act on these items, the insights from regional stakeholders and document analysis led to the following areas of priority:

- 1. Establishing a discrete fund to coordinate anticipatory action development and advocacy.** This emerges from participants indicating the 'speed' at which anticipatory action is being developed in the region, risking the creation of confusion and pressure on governments and communities. Participants indicated that a coordination group could leverage existing Working Groups, such as the Technical Working Group on Disaster Risk Financing (DRF) established in 2019 or the Pacific Humanitarian Country Team. However, an anticipatory action focus needs to follow the clear Three Building Blocks approach and bring stakeholders with expertise in all building blocks. The Pacific Resilience Partnership, under PIFS, as of 2023 is the main 'community of practice' body linking stakeholders.
- 2. Frame anticipation as core to long-term resilience, not just a short mitigation measure.** Participants noted the need to 'focus on the long-term nature of anticipation' and how it supports the capacity of institutions and people to respond to shocks. Anticipatory thinking is inherently about preparing for future scenarios by drawing on previous experience and current knowledge.
- 3. Enable regional and country level deliberation on anticipatory action.** This research activity has begun some of this (See workshop findings, next section), yet much work needs to be done to socialise and deliberate the relevance of anticipatory action at different scales. Most conversations to date have been held at a regional level, however more in-depth discussions, tailored to the needs and political economy and financial system of each country, needs to be done. This holds a special significance in the context of evidence





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generation. It is crucial to secure the active involvement of government, providing a space to express their requirements and information needed for a comprehensive analysis but also to inform long-term sustainability of the approach.

4. **Understand roles, responsibility, and levels of influence.** This includes the power that donors hold in setting narratives and directing funding, the influence of traditional knowledge and rural decision-making processes, and the varied levels of power different ministries have in each country. Similarly, this includes ensuring sovereignty and ownership by national governments is not eroded at the risk of donors ‘driving’ the agenda.
5. **Study the intersections of anticipatory action and traditional knowledge and experiences in planning for disasters.** The accelerated impacts of climate change are likely to influence and adapt traditional planning mechanisms. For example, in Fiji, communities would previously store yams and taro in preparation for a large cyclone which can keep up to a year if stored correctly or bury their boats underneath the sand to ensure they do not get damaged by the winds. However, as cash has now become a key tool,

such measures are being increasingly abandoned as such support will cover their immediate needs instead. Understanding the interplay between traditional knowledge and new technologies to predict natural hazards will also be key.

6. **Crystallise specific actions for the North, Southwest, and South Pacific, given the diversity of geography and politics.** This relates to the very different geographic climatic context, agricultural and fisheries context, and the political economy of climate finance and humanitarian work in the regions. This was also highlighted in the North Pacific case study (next chapter). Anticipatory action strategies, while they may offer a ‘regional vision’, are likely to be most impactful with country-level strategies. Regional visions still have a place, though, and can offer guidance on the anticipatory action framework (as has been done by ASEAN 2022).

#### **Clusters of focus for future anticipatory action in the Pacific Region**

One result from the Australia-based NGO workshop was the ‘clusters’ of action required for advancing anticipatory action. These were generated to guide planning for stakeholders in different sectors (e.g. civil society, research) working in anticipatory action.



Cluster of focus	Recommended actions
<b>Capacity building and community support</b>	<ul style="list-style-type: none"> <li>• Upskilling and training on the basics of the anticipatory action for all stakeholders: donors, country agencies, and regional agencies.</li> <li>• Clarifying within local partners how cash-based social protection and insurance systems can be linked to triggers for anticipatory action.</li> <li>• Up-skilling agencies on the gender and social inclusion implications of anticipatory actions.</li> <li>• Developing communication of early warnings in a credible way that different audiences understand.</li> <li>• Support local champions within institutions and communities to move anticipatory action forward.</li> <li>• Western actors require skills in understanding and using Pacific traditional knowledge in anticipatory action.</li> </ul>
<b>Policy and institutions</b>	<ul style="list-style-type: none"> <li>• Identify how anticipatory action links national action plans with regional frameworks and policies.</li> <li>• Multi-country, rather than a whole of Pacific region approach will likely have best traction, however regional coordination and leadership is needed to align with regional visions.</li> <li>• Anticipatory action needs to fit into existing legislations and policies, not develop new bureaucracies or processes. It is important to link it into ongoing disaster risk management programming.</li> <li>• NGOs and UN agencies have complementary capacities in DRR, and are able to work with communities and governments.</li> <li>• The regional FRDP and Blue Pacific 2050 Strategy are avenues for advocating for anticipatory action. This is also true for the global Early Warning for All initiative.</li> </ul>
<b>Financing</b>	<ul style="list-style-type: none"> <li>• There is a need to understand fiscal space in Pacific countries (insurance, bonds, loss and damages) and how anticipatory action fits into these systems.</li> <li>• There is no clear coherent understand of anticipatory action among donors, partly due to confusing terminology and the multi-hazard and multi-sector focus of anticipatory action.</li> <li>• Agreement on specific triggers, the spectrum of uncertainty within them, and how they relate to finance will help advance anticipatory action.</li> <li>• Piloting application of the building blocks to a shock (e.g., drought) in a specific community can help build evidence.</li> </ul>
<b>Data and knowledge gaps</b>	<ul style="list-style-type: none"> <li>• Collate evidence of what triggers exist and how they inform anticipatory action is fragmented.</li> <li>• Data sharing on forecasts and forecasts for different hazards is a complex area that requires coordination.</li> <li>• Community and household data on how they respond to triggers and benefit from actions is needed, specially for cash based responses.</li> <li>• Understanding of local perceptions of anticipatory action by communities in different sectors (agriculture, WASH) is needed.</li> </ul>

SOURCE: AUTHORS' OWN ELABORATION.



# Anticipatory action: Country case studies

## PALAU



Republic of Palau is an island country in the north-western Pacific with a population of 18 000 people, with the majority living on the main island Koror. The other populous islands are Angaur and Peleliu to the south, and Babeldaob to the north, along with the coral atoll Kayangel. In the southwest are Hatohobei and Sonsorol. Palau consists of about 370 islands covering 466 square kilometres. Palau's free association with the United States has contributed to its relative affluence—its per capita gross domestic product (GDP) of USD 17,096 (FY2017) is one of the highest in the Pacific. However, Palau depends heavily on grants, which accounted for 18.5 percent of GDP and 43.7 percent of total revenue during FY2011–FY2017.<sup>4</sup> The economy is narrowly based, and tourism receipts generally contribute 45 percent–55 percent of annual GDP (ADB, 2018).

Palau is particularly vulnerable to the effects of disaster and is already feeling the acute impacts of climate change. Palau has had a mix of rapid-onset and slow-onset hazardous events impact the country over the last decade, with major typhoons in 2012 and 2013, severe drought in 2016, and Typhoon Surigae in 2021 being one of the largest in the northern hemisphere. The National Disaster Risk Management Framework lists natural hazards such as droughts, typhoons, sea level rise and storm surges as ranked 'high risk', and tsunamis and earthquakes as low risk. Climate change is predicted to increase disaster risk and has implications for disaster preparedness and risk reduction. Climate change and exacerbating rates of disasters are expected to disrupt many aspects of life in Palau. Those who are already vulnerable—including children, the elderly, low-income families, and individuals with disabilities—are at greater risk from extreme weather and climate events (Miles *et al.*, 2020, p. 27).

Palau has several national frameworks in place to support disasters and associated slow and rapid onset shocks, including:

1. *Palau Management Action Plan (MAP) 2013–2017*. This provides a strategic roadmap for the Executive Branch of the Government of Palau.
2. *2020 National Master Development Plan* that was developed in 1996. While this has officially expired it is still relevant for informing policy actions.
3. *Actions for Palau's Future: The Medium-Term Development Strategy 2009–2014*. Options are presently being discussed for the preparation of a Medium-Term Development Strategy and National Master Development Plan.
4. *Palau's Development Plan 2023–2026* (In progress).
5. *Palau's National Disaster and Risk Management Framework (NDRMF) 2010*. This was amended in 2016 with the Palau National Disaster and Risk Management Framework.
6. *Palau Climate Change Policy for Climate and Disaster Resilient Low Emissions Development 2015*.

When thinking of formalising anticipatory action systems in Palau, one Palau participant emphasised the importance of focusing on the North Pacific as a unique region with characteristics, politics, and culture different from the Southwest Pacific. They noted the fact that much discourse and funding is allocated to Melanesia, which is understandable in terms of population pressures and proximity to large donors like New Zealand and Australia. However, the North Pacific continues to face climate pressures and has unique characteristics that require time and resources to focus on country-specific approaches.

### Governance architecture

The main DRM policy document in Palau is the *National Disaster Risk Management Framework (2016) (PNDRMF)*, which is accompanied by the *Palau Climate Change Policy for Climate and Disaster Resilient Low Emissions Development (2015) (Climate Change Policy)*, and the *Palau Community Based Disaster Risk Reduction Toolkit*.

### National Disaster Risk Management Framework

In 2016, Palau reviewed its 2010 PNDRMF to align with the *Sendai Framework* and to incorporate learnings from Super Typhoons Bopha and Haiyan (Potter, 2023). The PNDRMF is overseen by the National Emergency Management Office (NEMO) and outlines the governance framework for how Palau prepares, responds and recovers from natural disasters. Additionally, each state in Palau has its own State DRM Plans which they work alongside NEMO to develop and implement. The PNDRMF applies a decentralised model of DRM (Potter, 2023). Its key objectives are to establish organisational arrangements to deal with DRM and DRR; promote integrated planning across all levels of government, departments, sectors and communities; support the implementation of international and national DRM policies; and integrate DRM plans and strategies with climate change adaptation plans and strategies (Republic of Palau, 2016). As an appendix to the PNDRMF, Palau's *National Tsunami Support Plan* provides a detailed plan for awareness raising, educational programs and preparedness initiatives overseen by NEMO alongside the National Weather Service, the Bureau of Public Safety, Ministries of Education and State, NGOs, and the national media (CFR-DM, 2023).

### Climate Change Policy

Palau's *Climate Change Policy* is focused on the country's strategic priorities to adapt to climate change, prepare for and respond to disasters, and to reduce the country's greenhouse gas emissions (Government of Palau 2015; CFR-DM 2023). Section 3 of the policy document focuses on DRM, and includes information on Palau's natural disaster risks, existing DRM activities, and strategic priorities. Actions that the government implements to manage risks are focused primarily on infrastructure development, education and capacity building, and planning and evaluation. Palau's strategic DRM priorities are aligned with those listed in the PNDRMF and broadly relate to disaster preparedness and disaster risk reduction (Government of Palau 2015).



## Palau Community Based Disaster Risk Reduction Toolkit (CBDRM Toolkit)

The *CBDRM Toolkit* is a guidance document for Palau's states and communities to help them coordinate and address risk management (Government of Palau, 2016). Its objective is "to ensure consistency of approaches in vulnerability and capacity assessment adopted to reduce vulnerability to disaster and climate change impacts at the grassroots level, to embrace and practice the culture of resiliency to disaster through traditional arrangements" (Government of Palau, 2016). The *CBDRM Toolkit* is expected to play an integral role in Palau's decentralised model of DRM, as it will strengthen the resilience of local communities in how they prepare for and respond to disasters, particularly those communities that are extremely isolated from national- and state-level assistance (CFR-DM, 2023).

## Legislation

Although Palau does not have any formal laws that deal specifically with DRM, *Executive Order No. 397/2016* gives legal effect to the PNDRMF (Potter, 2023). Without any formal laws in place, NEMO is tasked with working with state governments to develop their own *State Disaster Risk Management Plans* and provide them with disaster risk reduction training (Potter, 2023).

## Risk information, early warnings, and forecasts

Palau's NEMO is part of the Executive Branch of government, and is the focal point for disaster response measures, and issuing warnings. Disasters for this agency are defined broadly, and include both sudden and slow-onset, as well as human-made and naturally induced. For example, an air crash is considered a disaster, the same as a typhoon or tsunami. As such it is treated as a shock that requires resources and attention by the Office. This creates a broad mandate for NEMO, and while teams are skilled and experienced, they can be stretched thin when there is a conflation of shocks. Early warnings are provided by a mix of sources, included Palau based weather services, as well as the early warning systems in Japan, Hawaii and Australia.

Palau's main governance body for supporting EWS and forecasting information is the National Emergency Committee (NEC), which oversees decisions and resources in times of emergency.

The NEC is diverse, and is made of 29 Executive Branch Agency directors, and includes the Palau Red Cross Society, Chamber of Commerce, National Telecommunication Corporation, and various utilities. While the NEC is diverse, it can take some time to make decisions.

Some respondents noted that while information is available for the different islands, it does not always lead to actions, especially before a shock. Overall, the information is perceived to be "quite good in terms of timeliness and accuracy" but not always used before a disaster. One participant noted that the speed at which storms and cyclones change does not always reflect the forecast – pointing towards building awareness and capacity in dealing with uncertainty. The same participant noted EWS cover a range of disasters in the country – cyclones, storm surge, tsunamis, and drought.

The NEC plays a primary function in coordinating and operating EWS in Palau. Given the diversity of agencies in the NEC, it allows for EWS to be put in the context of the expertise of that agency. The EWS issued are used by the NEC to coordinate response to that threat. These include both imminent and forecasted (longer-term) threats. The data used to make decisions is largely based on the National Weather Service forecasts. Forecasts and warning are issued using the 24 sirens installed throughout the country. These are used to raise an alert. There is also a high-frequency system, radio, television, and even schools that are used to share information. The state governments play a crucial role in anything related to information sharing, as they are closer to communities. While this is a 'modern' system, communities in Palau for a long time have been using traditional warning mechanisms. For example, the use of conch or old scuba tanks with the bottom cut off would be used as community bells, as they can be heard a long way away.

One respondent noted that language is a challenge – in English there are specific terms for variations in tropical cyclones, such as disturbance, depression, typhoon, super typhoon. In the Palauan language, there is only 'typhoon', so that can range from some wind to destructive life-threatening conditions. This makes communicating verbally the impacts a challenge. Another respondent put it clearly: "We need to leave abbreviations in the office when we come

out here". This relates to speaking to the most impacted (remote communities) when discussing matters related to forecasts and disaster planning. Broader studies indicate that terms like 'climate change' are actually quite new and based on Western framings of science and data (Jarillo and Barnett, 2022), and fail to consider the traditional and Indigenous conceptualisation of human-environment relations in Pacific islands.

Specific use of EWS for sub-sectors (such as agriculture) and associated impacts is in its infancy. Other agencies have indicated a need to develop impact forecasts and associated governance systems (such as risk informed policies and plans, and finance systems). EWS do exist for Palau and are used in traditional monitoring of possible shocks. The next phase of investment and capacity building will require pushing that EWS knowledge and embedding it into specific sub-sectors, impacts, and policies to support anticipatory action.

## Action plans

Once the NEMO assesses and declares a threat based on a forecast, and a decision is made by the NEC to bring the country to readiness, then a series of actions are taken to communicate to people what is happening. Each technical agency has its own approach to providing advice – for example in a drought situation, a fire management agency will stop issuing permits, and an environmental agency will send messages about conserving water. Regardless of slow or rapid onset, each agency has its own type of action plan, and there are triggering mechanisms that would activate its specific plans. For example, the Bureau of Agriculture has a plan where they use the various information that exist to link it to possible food security threats for people. For instance, for tapioca crops, they had to issue advice on cutting it so that it was not destroyed by the high winds. The structure of actions related to disaster is summarised in Figure 4.

FIGURE 4: OVERVIEW OF PALAU'S DISASTER MANAGEMENT SYSTEM



SOURCE: AUTHORS' OWN ELABORATION.

During the 2016 drought, different ministries (such as health and environment) used the National State of Emergency declaration to implement emergency plans focused on awareness in water conservation, and precautions related to water quality. The NEC oversaw several relief efforts during the drought to support the population. For example, attempts were made to increase water supply through activating wells and boreholes throughout the country. Water transfer between states (a costly exercise) was also done given states in Babeldaob had sufficient water levels for their communities (Republic of Palau, 2016). Sourcing of water tanks, pumps, pipes, hoses and valves was also part of the plan. While all these actions support water supply management and awareness, they were largely acted upon in the presence of the shock, not necessarily in a pre-emptive and anticipatory way.

States are the ones responsible for disaster risk management, including planning and response in Palau. This means that each state has a *State Disaster Risk Management Plan* that includes:

1. Community based disaster risk reduction framework: These are developed by each community to meet their needs and are developed jointly with the State Disaster Committee.
2. Emergency Response Support Plans: These include specific activities such as evacuations, shelter management, and early warning plans.
3. Standard operating procedures: These are specific guidelines for individuals or agencies for specific tasks, such as operations and communications.

The *Draft State Disaster Risk Management Plan* for Kayangel (the Plan) points towards how state agencies plan for disasters, including elements of anticipatory action. In Section 6.3.1 of the report, the Plan focuses on four stages of activating a response plan: Readiness, standby, activation, and stand down. These phases are very closely related to Building Block 2 of anticipatory action, which includes using a combination of readiness triggers and activation triggers that enable the delivery of pre-agreed anticipatory actions. A similar structure is included in other state management plans (for example, Melekeok). As such, these plans provide a structure for formalising anticipatory actions.

The stakeholders involved in supporting actions upon warnings are largely public agencies, with NGOs sometimes involved. NGOs tend to be involved in the early response, and in the long-term preparedness building. They play an important role in building preparedness plans and associated responses. This creates a window to embed clearer indicators and triggers into preparedness activities. NEMO has also been very proactive in developing community-based

disaster plan templates and running training on gender-response disaster risk reduction. This has been part of a 'toolkit' developed to support community-based disaster planning.

Two participants noted the challenge of translating technical information to actions, saying one farmer they cannot understand the links between a 50 miles per hour wind and the impact on banana plants. The messages need to be directly attributed to the impact – for example if wind speed is X, then the impact on crops is Y.

Traditional knowledge on what to do is sometimes used to take action – for example, in flat areas when there is heavy rain predicted, waterways are covered to protect taro patches rather than flooding them. One participant emphasised the loss of valuing traditional knowledge as a tool for acting on climate warnings. They stated that they are trying to 'revive' the use of traditional and cultural practices that for thousands of years have helped communities manage their preparation and response. These practices and knowledges are not formalised explicitly in action plans.

#### BOX 1: COMMUNITY LEVEL ANTICIPATORY ACTIONS IN PALAU

As part of this study, we engaged with leaders in Kayangel, Melekeok, and Ngardmau to understand how they are planning and actioning responses based on early warnings. Rural communities (many agricultural) have experienced first-hand the impacts of flooding and rainfall on their fruit, coconut, and taro crops. Limited farmland has been heavily affected.

One aspect mentioned by community leaders, was that abandoning their homes is not the 'Palauan way'. This leads to communities prioritising evacuation centres, near their homes, as places to shelter during extreme events. EWS were discussed as being relatively accessible, largely radio based, and with strong input from NEMO. While sirens are common, not all states have them. Because some communities are quite small, around 50 people, the message gets across to everyone and there is high capacity to respond.

In terms of responses, communities follow the above-mentioned State Management Plans, but also have localised responses. For example, protecting expensive equipment such as fishing equipment or planting tools is prioritised upon a warning, as they are important for recovery. Poultry and livestock are moved from large trees that may pose risks. Communities also emphasised that the 'traditional way' of protecting people is to protect everyone, not just the 'selected few' that states can choose to support via their formal systems.

While there is finance to support recovery, often based on assessments, a lot of this assistance is international rather than from state budgets. Strategies that support long-term food security, such as good storage and basic equipment maintenance (to prevent future damage) was discussed as a useful finance response.

#### Pre-arranged financing

Palau has no dedicated financing available for immediate disaster response, early recovery, and reconstruction, relying instead on reallocation of internal revenue and drawdowns from the permanent General Fund Reserve, which was set up in 2014 after the impact of two major typhoons. A 2017 report by the ADB indicated the possibility of establishing a USD 25 million disaster contingency fund, and an USD11 million National

Disaster Recovery Fund and Insurance program (ADB, 2018). The National Government has a disaster fund available that allows public agencies to access funds from the government reserves. It is unclear how this is allocated and released, but most likely occurs in a crisis-by-crisis basis. For example, people were allocated money to fix their roofs in the last typhoon as a recovery activity, but not before the impact.

This makes funding allocation from public budgets a challenge – any finance for pre-agreed actions, like response actions, are very program and project based, and there is no local budget or operational budget attached to disaster response. This means that Palau's population is exposed to the decisions and conditions set by often internationally designed responses and funding programs to support disaster management. Some of this exposure is mitigating by having locally based civil society groups, such as the Belau Association of Non-Governmental Organizations or the Palau Red Cross Society developing and implementing response plans.

Some examples were provided of strategies for households to build actions to help mitigate the impacts of a disaster. There are some loans for housing that have had conditions where loan recipients have been required to install water tanks as part of the drought preparedness. This was a response to the decline in household water tanks as land became more limited and more households got connected to main town water systems.

One participant noted that COP27 elevated discussions on the role of insurance as a financial tool to manage climate impacts. However, they noted that in the context of Pacific islands where individual budgets are limited, allocating extra money for insurance is a major challenge. This is something that has been reported in the context of other Pacific countries as well (Jain *et al.*, 2022).

There tends to be a difference in funding for preparedness versus funding for responses upon an early warning. Preparedness tends to be funded externally by the Green Climate Fund, Global Environment Facility, and bilateral donors. It is not necessarily a lack of interest in financing, but rather prioritising where those funds can be

allocated. One participant noted that “once there is a disaster, you run around seeing where funds are in government and bilateral donors”. There are unclear funding pools to access immediately before a disaster, and none of this is linked to a clear set of agreed triggers and EWS.

### Recommendations for Palau

- The NEC is a leverage point for enabling anticipatory action. As a multi-agency body that links early warnings with action, and includes both preparedness and response, it can offer leadership in anticipatory action. Triggers can be developed and pre-agreed through this group involved in managing disasters in the country.
- The State Management Plans offer a de-centralized governance arrangement for anticipatory action. Given the distances between islands, anticipatory actions need to be highly localised, and resources need to be stored within the states. The State Management Plans have strong focus on preparedness, and with development of pre-agreed triggers that could be used to develop actions and responses before a shock.
- As with many Pacific Island communities, experience of previous shocks offers insights into what can be done to prepare and plan. Some strategies can be low cost, such as establishing long-term crop protection and storage facilities to have food buffers in the instance of droughts and cyclones. Other strategies can be more related to supporting existing resilience and adaptive capacity systems already in place, and using any future finance modalities to support existing community structures that support disaster preparedness.



## SOLOMON ISLANDS



The Solomon Islands is an archipelago of 997 islands spread across a total land area of 29,900 km<sup>2</sup> over a total area covering 1.34 million km<sup>2</sup> of the Pacific Ocean. The central archipelago is comprised of a double chain of six large islands. The islands are geographically diverse, encompassing a mix of mountainous land and low-lying coral atolls located within the cyclone belt (FAO, 2019). The population is largely rural – 81 percent live outside of the small-town centres and cities, and the majority live within 1.5 km of the coastline. Agriculture alone contributes to 29 percent of the country's gross domestic product, and approximately 96 percent of households grow some of their foods (FAO, 2019). The Solomon Islands have a wet season from November to April and dry season from May to October. Solomon Islands is ranked 127<sup>th</sup> out of 182 countries in terms of vulnerability to climate impacts (World Bank, 2021), and listed among the top four countries in Oceania at most risk by the 2021 World Risk Index. Extreme weather events can significantly impact crops, and the limited options for income diversification make food insecurity a major climate change risk for the country.

Governments and communities have had recent experiences of extreme weather events and the associated economic impacts. In 2014, heavy rainfalls throughout the country led to extensive flooding and reduced GDP by 5.1 percent, through a combination of value chain disruptions and infrastructure damage. Projections indicate that annual losses of USD 20.5 million will be felt through a mix of hazards over the next 50 years. With limited sources of domestic revenue, budget flexibility is limited to manage disasters (UNDRR, 2023a).

The Red Cross in 2016 explored the possibility of developing anticipatory action in the Solomon Islands (Bailey and RCRCCC, 2016). In the study, the authors looked at the forecasting skills, vulnerability, and anticipatory action potential for floods, cyclones, storm surge, droughts, and heat waves. They found that meteorological capacity is good, institutional buy-in adequate, and forecast quality varied between hazards. They recommended that the highest potential for successful anticipatory action is to develop systems that align with local level disaster management plans, where they exist.

## Governance architecture

Solomon Islands' DRM governance approach integrates its policies and legislative frameworks with both DRM and climate change adaptation principles (Humanitarian Advisory Group, February 2022) Solomon Islands a DRM governance framework led by national ministries. The Ministry of Environment Climate Change Disaster Management and Meteorology (MECDM) "is responsible for sustainable environmental management, climate change adaptation and mitigation, disaster risk management and meteorological services for the Solomon Islands" (Solomon Islands Government, September 2020; UNDRR, 2023b). The MECDM is comprised of four technical Divisions and one Office: the Climate Change Division, Corporate Service Division, Environment and Conservation Division, Meteorological Services Division, and the National Disaster Management Office (SNDMO) (UNDRR, 2023b). Of these institutions, the SNDMO is principally responsible for supporting DRM in the country.

The key policies for DRM in Solomon Islands include the *National Disaster Management Plan* (2018) (NDMP), the *National Development Strategy 2016–2035* (NDS) and the *National Climate Change Policy 2012–2017* (SNCCP), which is currently under review (Solomon Islands Government, 28 September 2022). The principal legislative instrument in Solomon Islands for DRM is the *National Disaster Council Act* (1989) (NDCA).

### **National Disaster Management Plan (2018)**

The NDMP (2018) is a comprehensive and overarching DRM regulatory document that addresses Solomon Islands' disaster planning, preparedness, response, and recovery framework. The NDMP (2018) emphasises a whole-of-government approach to DRM, and considers national, provincial and local level governance in its framework (UNDRR, 2023b). The NDMP (2018) is accompanied by the *Implementation and Monitoring Plan for the National Disaster Management Plan 2018* (2020–2023), which was developed with the following objectives: to enhance the NDMP (2018) governance, collaboration and accountability; promote coordinated planning and monitoring of disaster management sector priorities; and support collaborative action to progress priorities (Solomon Islands Government, September 2020)

### **National Climate Change Policy 2012–2017**

This policy provides a national strategic framework to improve Solomon Islands' adaption to climate change, reduce disaster risks and increase mitigation capacity, increase resilience, and achieve Sustainable Development Goals (UNDRR 2023). The objective of the SNCCP is to "integrate climate considerations and support the implementation and achievement of Solomon Islands National Development Strategy and other regional and international policies and frameworks" (Solomon Islands Government, 2012).

## Legislation

### *National Disaster Council Act 1989*

The NDCA is the main legislative instrument for DRM in Solomon Islands, as it establishes and empowers key institutions and sub-committees with DRM responsibilities. Most importantly, Section 3 of the NDCA establishes the National Disaster Council (NDC) and confers in it the authority to manage natural disasters. The NDCA empowers the NDC with the following functions: a) to provide and render advice to the Minister on all matters relating to disaster; b) to approve and coordinate all activities necessary regarding preparedness, response and recovery; c) to assume full and complete control in operations connected with disaster; d) to provide and render financial assistance to Committees (National Disaster Council Act (1989) s 5).

The NDCA also established the SNDMO which, as aforementioned, is the key institution for administering national-level DRM activities and acts as the secretariat to the NDC (UNDRR, 2023). The NDMO implements the National Disaster Plan and other disaster support plans. The SNDMO also hosts and manages the National Emergency Operations Centre (NEOC). NEOC is a multi-agency operations centre, headed by the National Disaster Operations Committee, which coordinates operations during disaster events and supports provincial and local level governments (UNDRR, 2023).

## Risk information, early warnings, and forecasts

The Solomon Islands Meteorological Service Division (SIMS) is a national meteorological and hydrological service which provides multi-hazard early warning and climate services. It is responsible for providing meteorological information to the government, private sector and public. EWS and meteorological data was, overall, described by participants as growing and relatively good quality in Solomon Islands, with substantial improvements over the last decade. The main data source for SIMS comes from the COSPPac program, both for slow-onset and short-onset forecast and hazard monitoring. The data is used by SIMS and the Meteorological and Hydrological Services to generate information for the public and private sectors. The new Climate Risk and Early Warning Systems Initiative (CREWS) program is working to improve capabilities in EWS and communications for vulnerable populations. There is a relatively wide reach of early warnings once they are issued, reaching Ministries of Health, Agriculture, Infrastructure, Forestry, and Education, along with Solomon Water and Solomon Power. A critical element is translating the warning system into usable information for rural communities. As one participant said: "Getting the message to the last mile is one thing, having them understand the message is another".

There has been recent piloting of EWS using different approaches for different hazards. For example, one participant spoke of the flag system being used in Gizo and Tulagi to send warnings of possible severe weather at sea. The warning system uses a flag to notify small craft skippers of current weather conditions to allow them to make important decisions before they travel across to another island or the open ocean. This Flag-Based Early Warning System has also extended to Western Province. The system is a multi-agency initiative that draws from the expertise of SIMS, the SNDMO, and the Maritime Authority.

EWS for different hazards exist. For cyclones, the Meteorological Service can facilitate forecast information to relevant agencies, via email, phone messages and radio. Radio remains a dominant source of information sharing, given many remote communities have limited access to other communication channels. Tsunamis are so rapid that one stakeholder said the best early

warning is the physical shaking and observation of coastal changes. Drought forecasts are provided in one- and three-month lead times, often in written form and technical reports.

EWS has also been used for the health and urban sectors. Solomon Islands is the first Pacific nation to pilot an EWS for malaria in vulnerable areas, which compares monthly health records against rainfall. With the support of COSPPac, the malaria risk index is used to target homes for mosquito net distribution, spraying, and awareness (COSPPac, 2015). A scientific assessment of the malaria EWS (Smith *et al.*, 2017) confirmed the hypothesis that changes in rainfall affect likelihood of malaria, supporting the use of the malaria risk index and associated thresholds based on rainfall being used in Guadalcanal. In the urban sector, the Finnish-Pacific 2011–2014 project evaluation pointed towards increased awareness and understanding of EWS in the Lord Howe settlement. Through simulations and the installation of sirens and notice boards, this multi-hazard-prone settlement has improved its ability to respond to warnings. In response to a 7.9 magnitude earthquake (which cannot be predicted accurately), the Lord Howe community activated its *Community Response Action Plan* for Tsunami Alert (which was developed under the same project). This led to warnings from the SIMS and SNDMO being used by the community Disaster Risk Committee to lead evacuation to safer grounds – the first community in the area to do so (Bentin *et al.*, 2018).

The Red Cross feasibility study in 2016 found at the time of their analysis that the most reliable EWS are for cyclones and associated storms, but that EWS for flooding, heat waves, and drought require more thorough expansion and identification of thresholds and triggers to advance any FbF activities. A participant noted some advances in drought monitoring have been made. For example, a drought plan exists that links to disaster plans, which are used to help coordinate with SNDMO and with communities. This information helps communities plan for drought with actions related to crop resilience and water-saving systems.

Communication is a core element of EWS, and in Solomon Islands the reach of information is varied. One stakeholder reflected on the ongoing challenges of linking information (e.g., forecasts) with what it actually means for communities.



They stated that “communities need to understand what a warning is, and what the action is. Getting these new concepts to be introduced to communities is a big challenge”. Another stakeholder noted that cyclones, floods, and droughts are relatively well understood by communities and even though some are rapid onset, they can still implement anticipatory action. Tsunamis and earthquakes are so sudden that evacuation is perceived as the most relevant action.

A network involving a range of domestic and international NGOs in the Solomon Islands, plays a role in disseminating the seasonal forecast information. However, one participant noted that the information is very technical, including terms such as ‘hectopascal’ and ‘longitudes’. This technical information is largely irrelevant to urban and rural communities, and limited impact forecasts means taking anticipatory action can be a challenge. Radio and the SNDMO are the main sources of dissemination. Social media is also very popular so starting to be used, but many of the most cyclone-prone regions of the country do not have reliable phone or internet connectivity. With cyclones (which often bring severe winds), mobile tower infrastructure can be damaged and limit the ability of communities to access communication. While the use of mobile technologies is important, one stakeholder emphasised the need to continue to support and value traditional early warning and communication systems to complement the established data-driven interventions. The Government of Solomon Islands wants to work with Radio Vanuatu, Papua New Guinea, and New Zealand to support dissemination throughout the country.

Impact based forecasting is also being developed under the CREWS programme. Similar to the anticipatory action concept, this programme is trying to finalise the anticipatory action and responses with the National Disaster Management Offices and other stakeholders. The Solomon Islands Government are also working on using traditional knowledge for weather and climate but has limited funding. There is a need for evidence building on the links between Indigenous and traditional knowledge and the evidence of historical disasters. Traditional knowledge, such as environmental observations of bird behaviours or turtle nesting, have been linked by communities to warnings of upcoming

disasters. There is interest in capturing these types of examples and situating them within the broader early warning systems framework.

Anticipation needs to be embedded into longer-term climate resilience work – thinking about now and the long-term future as one. One stakeholder extensively emphasised the need to think about the future in all sectors, given the uncertainty of what communities will need to work with. This extends beyond climate change and involves thinking creatively about distant futures, not the immediate season. The reality of rural communities that live seasonally and respond to agricultural harvest seasons and market demands makes future thinking and planning a challenge.

### Action plans

The media was identified by participants as playing a significant role in disseminating information and support action plan developments associated with acting in time of a disaster. An example was given from the Western Province, which has made notable progress in disaster planning after the 2007 tsunami. Communities in Gizo Island have developed a series of Standard Operating Procedures (SOPs) to use in times of disaster. There are also several school programs that seek to educate children on preparedness and action. At an operational level, the costs of ‘acting’ are extremely high in the Solomon Islands, notably in the price of energy and fuel to provide food. One stakeholder noted that the cost of transporting a good is often higher than the good itself. Diesel is extremely expensive, indicating that actions linked to providing goods and food need to be localised to the provinces.

There was wide awareness of community-based action plans developed by NGOs through the Disaster READY program. These plans use a combination of historical experience, technical information, and traditional knowledge to develop preparedness strategies and post-disaster management. The study team was unable to analyse specific plans for specific communities as they were unavailable for review. However, insights from the NGO workshop (previous section) and consultations with Solomon Islands Government stakeholders indicate that there is acceptance and interest in continuing to work with community action plans. As of 2018,



23 communities had new disaster plans in place for slow-onset disasters in the Makira province. There is potential for these action plans to be revised and form part of formal anticipatory action protocols and systems upon available pilot funding. These plans are designed with the individual needs of a particular community in mind and typically build on previous training and include evacuation plans. Integrating triggers into existing work with a community focus may be a good option given SIRC's capacity.

Importantly, various stakeholders emphasised that 'actions' based on early warnings are already core to many communities throughout various provinces. Intergenerational experience of social and environmental change has equipped communities with understanding of how to respond to shocks. Furthermore, international and domestic investments in disaster preparedness have enabled some resources over the last decades to support action planning. While formal action plans may not exist, anticipatory action can leverage the existing skills and knowledge already in place throughout the country.

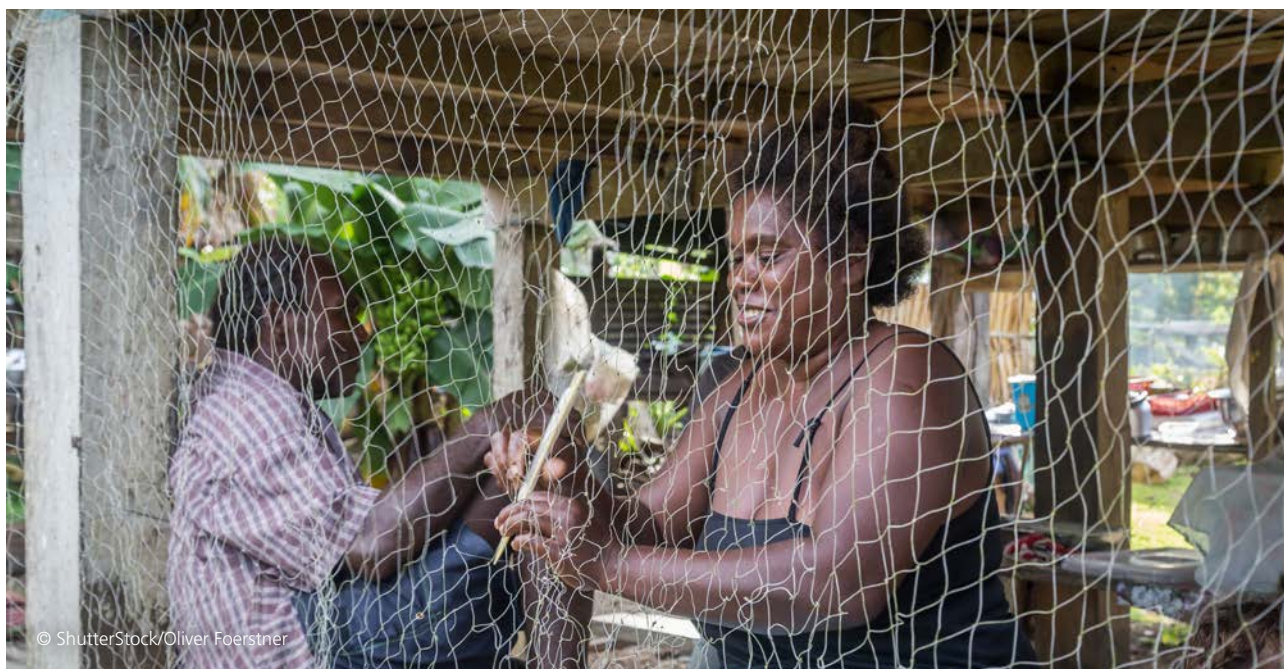
### Pre-arranged financing

Formal pre-arranged finance to release before a shock is minimal. There is very limited public budget allocation for anticipatory funding, with focus instead on post disaster budget allocation. Like many country disaster management systems, funding is only able to be accessed after a disaster is declared. This makes financing preparatory and anticipatory activities highly challenging from a

public funding perspective. The Disaster Response Emergency Fund by the Red Cross offers an avenue for piloting this through national institutions. However, there is a need to agree on triggers and thresholds, and the NDOC could play a role in agreeing on these to support financing.

One tool for managing financial responses are the Standard Operating Procedures (SOPs) and associated triggers that can be developed for considering an emergency. This was done for COVID-19, with extensive guidelines issued by the Ministry of Finance and Treasury. Similar SOPs can be a policy leverage point that humanitarian agencies can use to work within public policy mechanisms and develop anticipatory action triggers, action plans, and agreed finance flows.

Previous analysis into climate and disaster risk finance in the Solomon Islands states that much of this financing has been provided by multilateral and bilateral donors, and is often project-based rather than pooled into providing public budgetary support (Humanitarian Advisory Group, 2022a; SPC, 2017). This has created challenges beyond the lifetime of projects in sustaining the activities and building long-term financial resources. Funding is managed through several focal points, including the Ministry of Foreign Affairs and External Trade, MECDM, and the Ministry of Finance and Treasury. Approximately 57 percent of DRR project based funding falls outside the national budget, making it hard to track and measure progress (Humanitarian Advisory Group, 2022).



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## Recommendations for Solomon Islands

- Standard Operating Procedures (SOPs) are well established in various communities, and they speak to both community and formal government processes. SOPs can be used (or developed) to include anticipatory action protocols that speak to the different building blocks. Such SOPs can be built under existing programs with communities (such as the extensive NGO work), or through new collaborative participatory research activities.
- Community action plans for disaster planning are common and are often developed in a way that includes the relevant decision-making agents in communities. Given the strong roots and connections of rural communities to their people, land, and sea, expanding and/or developing new community anticipatory action plans can offer a formal way of supporting actions before disasters.
- Multi-hazard anticipatory action triggers, thresholds, and communication of the impact of hazards needs to be mainstreamed and simplified. While communication of hazards exists, and some good examples of simple communications such as the ocean flags, it is imperative to continue to illustrate how technical forecast data links to specific impacts on infrastructure, agriculture, roads, and basic services.
- Blending technical EWS with traditional knowledge-based systems, and equally valuing both for action, is essential. Solomon Islands has a Traditional knowledge database, managed by SIMS, and examples exist of traditional knowledge being used to support action before cyclones (Humanitarian Advisory Group, 2022). Further supporting the documentation and use of combined knowledge systems is critical.
- Socialising the use of funds before disasters, based on the pre-agreed triggers and/or traditional knowledge systems, is required. As it stands, there is unclear custodianship for funds to support communities before disasters, and a mechanism to identify who would benefit and what the type of finance would be is also missing. Where disaster finance exists, it is often available only after disasters, and attached to existing projects with existing communities.





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**Fiji has emerged as a leading nation in the South Pacific in its governance approach to DRM. There are recent policies and strategies that evidence Fiji’s technical capacity to monitor shocks and use evidence to plan and manage disasters. Towards the finalization of this study, Fiji was in the processes of developing a CERF pilot in anticipatory action to be implemented during the 2023-24 cyclone season.**

Fiji is an archipelago of 332 islands, with most of the population living in the two largest islands of Viti Levu and Vanua Levu. Economically, Fiji is classified as upper middle-income, however income disparities exist and there continue to be poor households with limited food security, livelihoods, and economic security. Fiji is highly sensitive to El Niño Southern Oscillation and faces exposure to cyclones, floods, droughts, tsunamis, earthquakes, and volcanoes. The literature indicates that there are several interrelated and cross-sectoral mechanisms in place in Fiji to implement DRM, including a collection of policies and legislative frameworks that are designed to prepare for and respond to the substantial

threats posed by climate change (Wanner, 2022). This experience has enabled Fiji to become a leader in integrating forecast data and disaster preparedness.

### Governance architecture

Previous analysis of global disaster management has found that Fiji is an exceptional outlier in demonstrating progress in disaster risk reduction efforts, including evidence of policy and technology development, and learning from issues that persist (Wanner, 2022). DRM policy in Fiji first originated from its *National Disaster Management Plan* (1995) and is now an important component of its *National Adaptation Plan (NAP)* which it submitted to the United Nations Framework Convention on Climate Change in 2018 (IFRC, 2020). The NAP is Fiji’s overarching process for climate-resilient development. Policies that are more specifically focused on DRM include the *National Disaster Risk Reduction Policy 2018–2030 (NDRRP)*, the *National Climate Change Policy 2018-2030 (FNCCP)*, as well as some hazard-specific disaster plans.

The NDRRP institutionalises the goals of the *Sendai Framework* (REAP, 2021) and its objective is 'to enable Fiji to deliver on its priority of preventing new disaster risk and reducing existing disaster risk in line with relevant regional and global frameworks', with the goal being to implement a more robust risk governance and DRM framework that can alleviate poverty in the country through sustainable and resilient development (NDRRP, 2018). To achieve this, the NDRRP has a list of seven strategies that focus on: mainstreaming disaster risk reduction, disaster risk governance, financing and investing; preparedness, emergency response, recovery and reconstruction, and knowledge and information (NDRRP, 2018).

The FNCCP was adopted by the Ministry of Economy in 2019 to complement Fiji's *5-Year and 20-Year National Development Plan*. The FNCCP serves several functions, as it anchors the nation's national climate change response under the Paris agreement, provides the objectives for Fiji's climate change and mitigation targets, mandates the NAP and the *Low Emissions Development Strategy*, and provides the basis for the new *National Climate Change Policy* (NCCP, 2018). The defining feature of the FNCCP is its 'woven approach' to resilient development which recognises the connection between socio-economic development and risk-management priorities (NAP, 2021). The objectives and strategies of the NCCP are focused on national risk governance, leadership and global climate action, climate change adaptation and resilient development, climate change mitigation and resilient development, national capacity development, sustainable financing, and private sector transition and engagement (NCCP, 2018).

The National Disaster Management Office (FNDMO) has also produced hazard-specific response plans. For instance, the *Tsunami Response Plan* (2017) provides guidance for national agencies about their roles and responsibilities in the event of a tsunami to coordinate the country's preparedness, warning and response approach. The FNDMO is also in the process of drafting a national *Drought Response Plan* and a community-based disaster risk management training policy (Nasiko, 20 October 2020).

Most recently, the FNDMO has taken a co-leading role alongside OCHA, UNDRR, and the broader UN community in Fiji for the inaugural pilot program of anticipatory action funded by the Central Emergency Response Fund (CERF). This pioneering initiative focuses on predicting cyclones and is in drafting stage as of the time of this report, with expectations of its readiness for implementation in the 2023/2024 cyclone season. This pilot program not only marks a significant milestone as the first of its kind in the region but also serves as a valuable platform for introducing the anticipatory action approach within Fiji. Lessons learned from this pilot will inform future efforts to scale up this proactive approach.

Fiji's Cluster System is also a well-established coordination mechanism that is enabled in light of an emergency. The Cluster System offers the FNDMO a way of managing and setting directions for the various sectoral aid arrangements and actions that are activated upon an emergency. NGOs are critical actors in managing disasters in a coordinated way with the government and international actors and offer links with local disaster management councils.

## Legislation

Fiji is enshrining DRM practices in its national legislation. This includes the *Natural Disaster Management Act (1998)* and the *Climate Change Act (2021)*. A key feature of these legislative instruments is the way that they integrate governance structures for both climate change adoption and DRM (Humanitarian Advisory Group, 2022b). Included within the climate change and DRM structure is the National Adaption Plan Steering Committee, the National Climate Change Coordination Committee, the Fijian Adaption Registry, the National Ocean Policy Steering Committee, and the Fijian Taskforce on the Relocation and Displacement of Communities Vulnerable to the Impacts of Climate Change. The *Climate Change Act* also allows the Minister responsible for climate change to establish a private sector advisory committee under certain conditions (Grantham Research Institute on Climate Change and the Environment, 2023)



Following the destruction caused by Cyclone Winston, the Fijian government decided to revise its *National Disaster Risk Management Act (1998)*. At the time of writing, this review process is ongoing. However, the Draft NDMA, which has been made available for internal consultation, provides an insight into what the new legislation will focus on once it passes through Parliament. It mainly concentrates on 'risk management' through measures that will help prepare for, respond to and recover from natural disasters. This will be coordinated through subnational administrations across divisional, provincial, district, municipal and communal levels (IFRC, 2020)

### Risk information, early warnings, and forecasts

Fiji has an advanced monitoring system for hazards, with close collaborations between the FNDMO and the Metrological service. The Metrological service is responsible for issuing forecasts, warnings, and monitoring cyclone path direction. An accessible portal<sup>3</sup> is updated with the latest warning and media releases and is frequently monitored and updated. The data monitoring from Metrological is actively used to inform planning and responses, which fall under the coordination role of the FNDMO. Stakeholders continuously referred to the importance of the FNDMO as a core agency in supporting planning and response to shocks. The Fiji Cluster System is an important coordination group during humanitarian and environmental crises, and with over 10 years of experience, the Cluster System was discussed as offering an avenue for overseeing anticipatory action design and roll out. This cluster system acts as a boundary organization that links humanitarian actors and bilateral donors with the technical experience and expertise of local agencies and can be a core group in Fiji for establishing agreed protocols for anticipatory action.

As this study was being undertaken, the mid-term review of the *Sendai Framework* was underway. As part of this, Fiji stakeholders, complemented by an associated report, emphasised the continuous improvement of EWS in the country as an area of priority. The increasing availability of technology and mobile networks, coupled with public awareness, has allowed Fiji to elevate its

understanding of how to respond to official warnings. One stakeholder noted that, despite remoteness, people "know how to prepare" and previous experiences of cyclones and floods has allowed them to proactively act upon warnings. Information in the form of pamphlets, posters and online is presented in an accessible way to inform members of the public what the impacts of a hazard are (see, for example, 'Cyclones – what you need to know'<sup>4</sup>).

As of 2023, the Government of Fiji is investigating the development of people-centred multi-hazard EWS. The Fiji Government states that a 'paradigm shift' has occurred in the country over the years in shifting from reactive response based approaches towards investing in pre-emptive and anticipatory measures (Government of Fiji, 2023). The proven capacity of Fijian communities and institutions to assimilate and respond to insights derived from past extreme events presents a robust opportunity for advancing the implementation of EWS in anticipatory action initiatives. This includes endeavours like the Cyclone Anticipatory Action Pilot, conducted in collaboration with the UN. The Anticipatory Action Framework for Tropical Cyclones in Fiji was endorsed by Fiji Peoples' Coalition Cabinet in February 2024, underscoring a shared commitment towards building resilience and safeguarding vulnerable communities on the front line of the Climate Crisis.

### Action plans

At the national government level, the Ministry of Agriculture was discussed as an important agency with growing experience in understanding the impacts of cyclones, and with increasing capacity to do rapid assessments of shocks. Increasingly, the Ministry is building capabilities in linking cyclone trajectories with existing vulnerability maps of Fiji, which helps determine 'hot spots' for climate vulnerability which could be used for anticipatory decision making. Integrating the Metrological data with the vulnerability data (supported through post-cyclone assessments and through WFP), the Ministry of Agriculture has an opportunity to develop impact forecasts and scenarios to support anticipatory action. There is increasing focus on stocktaking the livestock and crop sector profiles and overlay them with historical impact data (which is varied in quality) to support more proactive responses.

<sup>3</sup> See: <https://www.met.gov.fj/index.php?page=public>

<sup>4</sup> See: <https://www.ndmo.gov.fj/hazard-information/>

As mentioned in the Governance section, the FNDMO has sector specific action plans, such as tsunamis and drought (in draft form). These sectorial plans offer direction and guidance on how to act upon a shock. In contrast to the other country case studies, interviews in Fiji had a strong focus on largely the 'top down' government led action planning. Part of this was the profile of our participants, which were largely Suva based and operated with a national frame. One participant noted the importance of engaging provincial governments, as they are much more connected to the 'operational' side of disaster planning and response. NGOs also have closer links to provincial governments and rural communities, making them important agents in linking stakeholders across scales during disasters.

Caution needs to be taken in the development of pilots in Fiji to work within the localised diversity of communities, capacities, and action plans. Combine factors of remoteness, types of housing settlement, proximity to government services, and vulnerability profile all influence how anticipatory actions can be rolled out. While various NGOs and communities have developed preparedness plans, they can be highly specific to the community's experiences of slow and rapid onset events. As such, formal anticipatory action plans developed with national government and humanitarian agencies ought to work with community leaders and relevant civil society groups to link new investments with existing action plans. Traditional anticipatory planning and preparedness has been increasingly documented for Fiji and other Pacific Islands (McNamara and Prasad, 2014), and needs to be more formally embedded in internationally based financial responses to climate action.

### Pre-arranged financing

There are several finance mechanisms in Fiji that can support recovery, and potential anticipatory finance, of communities. While there is increasing awareness of anticipatory action, our analysis reflects other studies in finding that all finance systems are designed to be post-disaster related, and depend on either private citizens or public funds (ADB, 2019). While there is increasing progress in finance disasters, Fiji puts aside less than 0.01 percent of budgeted spending, or FJD

22 million, for disaster reduction and disaster humanitarian response and recovery – a small component of the total cost of an extreme disaster (ADB, 2019). Under the Financial Management Act 2004, ministries and departments can engage in emergency procurement after a State of Natural Disaster has been declared. This allows Permanent Secretaries to procure relief assistance from public funds. Complementing this, the FJD 1 million Disaster Relief and Rehabilitation Fund funds immediate humanitarian response after a shock.

Insurance is available to citizens for property, and in more limited scale, for sugar crops. Insurance penetration is very low, at about 3.4 percent (UNCDF, 2021). The insurance for agriculture is very ad-hoc and was provided following Cyclone Winston through the Sugar Cane Grower's fund, offering grants to almost 4 000 growers. In 2020, through FijiCare and Sun Insurance, the first parametric insurance product was made available to various agricultural sectors including sugar, coconut, dairy, and rice (Government of Fiji, 2022). The product is, however, ultimately based on up-front payments and payouts after extreme winds or cyclones impact individuals. A stakeholder noted that it is a very challenging context for individuals, notably poorer households, to allocate funds for insurance. Institutions like the Fiji Development Bank could be in a position to develop insurance mechanisms linked to disasters and triggers, but ultimately requires individuals to show adequate history of income and good credit rating to be eligible.

Participants also mentioned the importance of noting the non-cash-based nature of resilience and response in many communities. While there is increasing access to cash services, many communities continue to rely on day-to-day reciprocity and non-cash based trade systems. The same can happen when there is a disaster through resource sharing and distributing systems. Planning for response requires pre-emptive analysis of the underlying cultural conditions for disaster planning and response, and the role that formal finance plays in such systems.





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## Recommendations for Fiji

- Work with the already established Cluster System, which holds extensive experience in using technical data to support actions upon a disaster. While much of the Cluster System work is centred around post-disaster response, it offers a strong foundation for developing pre-agreed triggers and response mechanisms for anticipatory action.
- Formalise the inclusion of local community knowledge and experiences in anticipating, preparing, and responding to shocks. While anticipatory action processes may be developed by technical agencies, there needs to be effort made to engage the target beneficiaries of such actions to ensure there is legitimacy and ownership over action plans.
- NGOs continue to be strong boundary agents linking communities, local councils and governments, and national disaster policy. Work with NGOs who can reach communities, include them in the planning and delivery process, and monitor the lessons of anticipatory action.
- Continue to develop ways of using extensive historical cyclone impact assessments for sector-specific potential impacts through scenario development and/or impact forecasting.
- Utilize the upcoming Cyclone Anticipatory Action Pilot as a focal point for accumulating evidence and investigating opportunities for enhancing and expanding the approach within Fiji. Additionally, this endeavour aims to serve as a source of inspiration for other Pacific Islands to adopt and engage in similar anticipatory action initiatives.



# Recommendations on the feasibility pathways for anticipatory action in Pacific Island Countries

## Summary of country level results

These recommendations are based on the in-country consultations, regional discussions, and extensive desktop analysis of the building blocks of anticipatory action. While some aspects of anticipatory action may have developed since this study was written, many of the recommendations relate to the structural conditions that can enable anticipatory action planning from being developed.

**PALAU:** There is a strong basis to start anticipatory action development. This is largely due to the strong presence of State Management Plans that have been socialised and embedded into the local governance context. The de-centralised governance system for DRM in Palau enables humanitarian actors to work directly with the state management committees and reduce the transaction costs of operating at national levels. Data and forecasts are relatively robust for rapid onset hazards and pushing for some sector-specific impact forecasts could help formalize anticipatory action. Finance is unlikely to be from the public budget, so an anticipatory humanitarian fund pool is needed. Cyclones and/or drought are likely the most relevant hazards to focus on.

**SOLOMON ISLANDS:** The country has an enabling environment for anticipatory action, however the centralised approach to governing disasters and geographic spread of the country will pose challenges for formal anticipatory actions reaching remote communities. To overcome this, understanding and leveraging community action plans and traditional anticipatory mechanisms is critical. National institutions which oversee the governance of disasters will need to play a role in linking triggers to formal actions and finance. Communities have extensive deep knowledge of adaptation and planning for disasters,

and some have community level action plans. Linking community actions to national actions is challenging given large geographies and fragmented communication channels. Piloting anticipatory action in coastal communities (who may face flooding and storm surges) could be done by building on the Community Disaster Management Plans. Importantly, informal approaches to anticipatory action that use traditional knowledge could be developed. Civil society organisations (e.g., World Vision, Save the Children) have worked with communities to develop these plans. There is limited clear finance options to enable anticipatory actions, including clear responsibility of who would administer the finance mechanisms. Drought, floods, and cyclones are hazards that could be the focus for anticipatory action.

**FIJI:** There is high feasibility in Fiji to build from extensive experience in disaster preparedness, a strong Cluster System, and ongoing work to develop impact forecasts specially for the agricultural sector. The extensive post-cyclone assessments and growing skills in the Ministry of Agriculture, present an excellent opportunity to start developing models on the potential impacts of cyclones in crops and livestock sectors, and use this to develop anticipatory plans. Fiji, in collaboration with WFP and the Department of Social Welfare, have been further refining social protection measures, making Fiji a suitable candidate to roll out social protection based anticipatory actions and action planned for the upcoming CERF pilot on cyclones. However, some work is still needed to advance public and private finance coordination that is anticipatory rather than only reactive to shocks. While cyclones are now the most prominent risk being addressed, floods and droughts are also priorities.

## Crosscutting recommendations for anticipatory action building blocks

Table 6 provides some actions across the building blocks, along with pre-planning and post-intervention stages of anticipatory action.

**TABLE 6: CROSS CUTTING RECOMMENDATIONS ACROSS THE BUILDING BLOCKS**

Phase	Recommendations for agencies working in anticipatory action
<b>Preplanning</b>	<ul style="list-style-type: none"> <li>• Coordinating with relevant DRM and finance agencies for targeted geographic scope of actions.</li> <li>• Defining target geographic communities and vulnerability profiles.</li> <li>• Discussing with communities and local governments the anticipatory action process and alignment with disaster management plans.</li> <li>• Summarising available early warnings for the selected geography and any associated impact-based forecasts, and socialising these with agencies and communities.</li> <li>• Develop a baseline and data collection plan for understanding the impact, benefits, and costs of anticipatory actions. Rigorous data collection in parallel to interventions is crucial for evidence building.</li> <li>• Develop a crisis timeline for anticipatory action in a chronological framework that outlines key activities, events, seasonal change, and decision points related to a proactive response to a potential crisis. This timeline helps in planning and executing anticipatory actions, which are interventions taken before a disaster or crisis occurs.</li> </ul>
<b>Building Block 1: Triggers and early warnings</b>	<p><b>Rapid-onset shocks (cyclone, typhoon, flood)</b></p> <ul style="list-style-type: none"> <li>• Agree on readiness triggers at an adequate timeframe for the specific event (e.g., 72 hours prior to landfall for cyclone).</li> <li>• Agree on activation triggers at an adequate timeframe for the specific event (e.g., 48 hours prior to landfall for cyclone).</li> <li>• Agree on minimum probability of impact that institutions are willing to work with.</li> </ul> <p><b>Slow-onset shocks (drought)</b></p> <ul style="list-style-type: none"> <li>• Develop and agree on a Combined Drought Index. model.</li> </ul> <p><b>Traditional knowledge</b></p> <ul style="list-style-type: none"> <li>• Develop ways of working with relevant ministries (e.g., Ministry of i-Taukei Affairs in Fiji) to include traditional EWS knowledge into anticipatory action planning.</li> </ul>
<b>Building Block 2: Planning</b>	<ul style="list-style-type: none"> <li>• Ensure adequate, participatory engagement with communities and building actions that align with their priorities and action plans.</li> <li>• Factor in the unintended consequences of actions on women, children, and people living with a disability (for example, who will own assets or manage cash?).</li> <li>• Generate actions for the sector of focus (agriculture, water, infrastructure, people).</li> <li>• Build from the extensive state and provincial disaster management plans, and community based and developed action plans.</li> <li>• Explore what governments are already planning in preparedness and response phases to explore if they can be tweaked and linked to triggers to make them anticipatory.</li> <li>• Explore how traditional knowledge and expertise can inform activities community take after a warning and how these can be built upon or enhanced.</li> </ul>
<b>Building Block 3: Finance</b>	<ul style="list-style-type: none"> <li>• Identify existing climate finance and disaster relief funds that can resource both the setup of the system and activation.</li> <li>• Establish systems that allow for uncertainty and risk tolerance to be part of financial based responses.</li> <li>• Work with the extensive vulnerability assessments and maps that exist in the region to target the most vulnerable under different shock scenarios.</li> </ul>

SOURCE: AUTHORS' OWN ELABORATION.

## Considerations for developing anticipatory action pilots

The growing global experience indicates that humanitarian agencies and civil society groups are placed in a strong position to support anticipatory action. However, this needs to be done in close alignment with existing governance mechanisms, legislations, and policy priorities of countries and target communities. The recommendations for advancing anticipatory action pilots in the Pacific region are presented in Table 7. It is important to note that these are only some of the major strategies and should be used in parallel with the extensive experience that already exists in the three building blocks among Pacific and international agencies.

**TABLE 7: SUMMARY OF RECOMMENDATIONS FOR ADVANCING ANTICIPATORY ACTION IN THE PACIFIC REGION**

Recommendation	Explanation	Suggested champions of this action
<b>Approach anticipatory action with an understanding of different knowledge systems and approaches to anticipating and managing disasters</b>	Much of the disaster management and resilience programming has been influenced by global frameworks (e.g., Sendai and the FRDP), which shape policy and institutional direction. Yet the reality of everyday planning, experiencing, and managing slow and rapid onset shocks lies in people often detached from formal governance processes. As such, it is imperative that anticipatory action in the Pacific acknowledges the existing regional and national policy environments that exist, and strongly draws from the in-built experiences and knowledges of shocks that communities in urban and rural areas hold.	Donors, humanitarian agencies, NGOs, country governments
<b>Conduct country level detailed sensitization and analysis of locally led anticipatory action design</b>	The insights from experts engaged in this study, and the summary report from the March 2023 Pacific Week of Anticipatory Action, points towards the need to take a country level approach for anticipatory action. While regional coordination bodies remain salient in advocacy, coordination, and research dissemination, the practicalities of anticipatory action are best targeted to country level policy and legal conditions. The three case studies presented above show the diversity that exists within countries, and the varying priorities and approaches to managing disasters. Future pilots and funding ought to consider these local public policy architectures to make anticipatory action relevant to the development pathway of target countries.	Humanitarian agencies, zNatural Disaster Management Offices and MET agencies
<b>Develop Technical Standards for specific Pacific countries and their geography and institutional capacities</b>	Technical Standards may be most suitable at country level, or cross-country levels. The Asia-Pacific Technical Standards already exist and provide a current and strong baseline for developing anticipatory action systems. Embedding and contextualizing these in country levels would help clarify the specific hazards, roles and responsibilities, and data, planning, and finance mechanisms needed for the country.	Pacific Resilience Partnership and Anticipatory Action community of practice
<b>Develop Sector specific impact based forecasting</b>	While some countries have specific sectoral impact forecasts (e.g., Fiji for the sugar industry), more focussed expansion of these is needed. The Pacific has abundant post-disaster assessments, and while these likely have different methodologies, a synthesis activity could provide an overview of scenarios of possible impacts based on historical data. Focusing on impact forecast for major sector impacting livelihoods and health (such as infrastructure, agriculture, and water services) could be a strong starting point.	Universities and sectoral ministries (e.g., agriculture, water)
<b>Develop finance mechanisms that are anticipatory by design</b>	Most of the existing finance systems described in this study focus on post-disaster finance. Some small examples of parametric insurance exist, but this is not suitable for low-income vulnerable communities. Public budgets are limited, and while some allocation exists for disasters in public budgets, this is often for post-event. Anticipatory finance needs to consider the scenarios and likelihood of events and be comfortable with the uncertainty that exists in any predictions.	Donors, humanitarian agencies, development banks, private finance groups
<b>Research and monitoring of pilots</b>	Data – both quantitative and qualitative – are critical for understanding the successes and failures of interventions. The Pacific region has highly skilled professionals with experience working across science, research, and policy for development. It is crucial for any pilots that are developed, notably through large funding partners, to have strong monitoring, evaluation, and research components to understand how interventions can be improved in the future. The gathering of such information should be tailored to align with the specific requirements and preferences of the respective governments. It is essential to initiate discussions at the outset of the process, allowing governments to take the lead and steer the process. This proactive approach empowers governments to acquire the necessary insights and data to facilitate the expansion of the approach.	Humanitarian agencies, universities, NGOs

SOURCE: AUTHORS' OWN ELABORATION.



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FAO Representation in the Pacific Islands  
[fao-sap@fao.org](mailto:fao-sap@fao.org)

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