

Resilient Development Financing in the Pacific

The PREP Experience



Pacific Resilience
Program



PACIFIC ISLANDS FORUM

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Acronyms

AMRDD	Aid Management & Resilient Development Division, Tonga Ministry of Finance
CERC	Contingency Emergency Response Component
COP	Conference of the Parties of the UNFCCC
DAEF	Disaster Assistance Emergency Fund
DRF	Disaster Risk Finance
DRM	Disaster Risk Management/Mitigation
DRR	Disaster Risk Reduction
EEZ	Exclusive Economic Zone
EOC	Emergency Operations Centre
ESCAP	The Economic and Social Commission for Asia and the Pacific
ESMF	Environmental and Social Management Framework
ESS	Environmental and Social Standards
EWS	Early Warning System
FRDP	Framework for Resilient Development in the Pacific 2017 - 2030
GDP	Gross Domestic Product
GEF-SCCF	Global Environment Facility – Special Climate Change Fund
GIS	Geographic Information Systems
GNI	Gross National Income
IDA	International Development Association
IPCC	Intergovernmental Panel on Climate Change
JNAP	Joint National Action Plan for Climate Change and Disaster Risk Management
MEIDECC	Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change, Communication – Government of Tonga
MoF	Ministry of Finance
MHEWS	Multi Hazard Early Warning System
MNRE	Ministry of Natural Resources and Environment, Government of Samoa
NDC	Nationally Determined Contributions
NEOC	National Emergency Operating Centre
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PFM	Public Finance Management Systems
PICS	Pacific Island Countries
PCRIC	Pacific Catastrophe Risk Insurance Company
PIFS	Pacific Islands Forum Secretariat
PPCR	Pilot Program for Disaster Resilience
PREP	Pacific Resilience Program
PRP	Pacific Resilience Partnership
PRS	Pacific Resilience Standard
RMI	Republic of the Marshall Islands

SDG	Sustainable Development Goals
SIDS	Small Islands Developing States
SPC	Pacific Community
TC	Tropical Cyclone
TWG	Technical Working Group
UNFCCC	United Nations Framework Convention on Climate Change



Executive Summary

Pacific Island Countries (PICs) are among the most physically vulnerable nations in the world. They are highly exposed to the adverse effects of climate change and natural hazards such as tropical cyclones, earthquakes, tsunamis and volcanic eruptions which can devastate their entire economies, human and physical capital, and negatively impact their long-term resilient development. Over the past 50 years, disasters have affected over 26.6 million people in the Pacific islands region, and it is estimated that the current total average annual losses from disasters to be around US\$ 1.1 billion¹. However, given the current upward trajectory of global temperature², this estimation will change as per the forecasted climatic scenarios; a moderate climate scenario will result in average annual losses of US\$1.3 billion and US\$1.4 billion under a worse-case climate change scenario³. Assessments also indicate that PICs will suffer the third highest losses (compared to South and South-West Asia, and East and North-East Asia) in a worst-case climate scenario, losing around 4.3% of their Gross Domestic Product (GDP)⁴.

Disasters and climate change are increasingly recognized as core development challenges. Disasters and climate change impacts are affecting agriculture, food security, fisheries, water resources, as well as the livelihoods and economies of the Pacific people particularly the most vulnerable groups in societies⁵. In the Pacific, a large segment of the poorest population live in low lying land and in high-risk areas such as flood-prone waterways and coastlines, which increases the risks as well as their vulnerability to disasters⁶. As severe and increased frequency of climate induced disasters have been projected for the Pacific⁷, the vulnerability of Pacific populations is expected to increase further. This will in turn increase social pressures and existing inequalities that will unfortunately drive the poorest and most vulnerable populations to move and reside in more high-risk areas.

Strengthening resilience for PICs is therefore critical given the highly uncertain future they now face. Targeted investments in resilience building are therefore critical. Priority areas of investment that include the need to strengthen disaster early warning and preparedness, and to mainstream disaster risk and climate change into development planning and financing in PICs. Recognizing these critical needs, the World Bank provided an opportunity for targeted resilient development and engaged with three PICs; Republic of Marshall Islands (RMI), Tonga, Samoa and two regional organizations; the Pacific Islands Forum Secretariat and the Pacific Community (SPC) to implement the Pacific Resilience Program (PREP).

¹ UNESCAP (2022) Pathways for Adaptation and Resilience for the Pacific SIDS: Asia Pacific Disaster Report 2022 for Pacific SIDS.

² IPCC (2022) Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem (eds.)]. In: *Climate Change 2022: Impacts, Adaptation, and Vulnerability*. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. In Press.

³ UNESCAP (2022) Pathways for Adaptation and Resilience for the Pacific SIDS: Asia Pacific Disaster Report 2022 for Pacific SIDS.

⁴ *ibid*

⁵ World Bank (2015) PREP Appraisal Report. Report No: PAD1095.

⁶ *ibid*

⁷ RCAAP (2021) Climate Change Update for the Pacific, Available <https://www.rccap.org/climate-change-update-for-the-pacific>

The PREP builds on a number of existing disaster resilience projects that are already underway in the region. Using a programmatic approach, the PREP specifically targets investments in:

- 1) Strengthening early warning and preparedness;
- 2) Resilient infrastructure and retrofitting of key-public assets to meet internationally recognized resilience standards; and
- 3) Strengthened financial resilience to disaster events.

Investing in these areas are critical given the increasing frequency and severity of disasters in the region. Importantly, the regional approach adopted by the PREP is designed to provide a pathway for achieving economies of scale, standardized approaches, improved coordination of climate resilience and disaster risk reduction efforts across the region⁸.

The purpose of this report is to capture the key learning from the overall PREP experience for the purpose of sharing knowledge of the drivers of comprehensive resilience building in the region that have arisen from the program. The learning discussed can provide guidance to other resilience building-related programs in the future in terms of how they can be more effectively designed and implemented. The twelve key lessons learned that have emerged from this study are:

1. Flexible strategies enable donors to adapt their assistance to changing circumstances and tend to provide countries with incentives for development achievements.
2. Current environmental safeguards intended to ensure sustainable development is a challenge and can result in more carbon-intensive investments in country.
3. Government and development partners alike must strive to ensure fit-for-purpose community consultative practices to ensure meaningful engagement and participation, not just communication.
4. Coastal resilience and adaptation solutions are only as effective as the vulnerability assessments that support them, and the latter are only as good as the data used to develop them.
5. Established regional institutions as well consultants that are well versed with the requirements of donors such as the World Bank need to play a greater role in providing advice regarding the requirements of these organisations to PICs.
6. There is value in developing a separate country Disaster Risk Policy to provide clarity and direction on how to pursue a targeted and cost-efficient approach to strengthening financial protection against disasters.
7. Amongst a range of considerations, the effectiveness of Early Warning Systems (EWS) in a national context is contingent on the quality of coordination amongst the relevant ministries.
8. Establishment of sub-national Emergency Operation Centers (EOC) can enhance effectiveness and efficiency of overall national emergency response.
9. The procurement process of donors whilst challenging, also provides opportunities for local building contractors to enhance their capacities in meeting internationally recognized best building practices, but these capacities need to be sustained in order for the gains in infrastructure resilience standards to be maintained.

⁸ World Bank (2015) PREP Project Appraisal Document. Report No: PAD1095.

10. The complexity of risks that are now emerging requires PICs to not only plan for all possible scenarios but also strengthen their approach to traditional knowledge in terms of preparing for as well as responding to events.
11. Disaster Risk Finance (DRF) solutions are only as reliable as the risk models that support them, and the latter are only as good as the data and the capacity required to develop them.
12. The Ministry of Finance (MoF) is best placed to lead and drive the national DRF efforts of countries.



Introduction

PICs are highly vulnerable to disasters and share many sustainable development challenges. Their smallness, remoteness, restricted economic bases, limited resources and high trade dependency makes the PICs vulnerable to climate change and disasters. According to the World Risk Index 2021, PICs account for the top three most at-risk countries in the world, while six others make up the top 20 at risk countries.⁹ Extreme disasters caused by severe tropical cyclones, prolonged droughts, devastating volcanic eruptions and tsunamis are pushing national governments into debt crisis; business into insolvency; and leaving individuals with extreme hardship and prolonging poverty over generations¹⁰.

Annual average economic losses due to disasters for PICs are estimated at US\$ 1.1 billion or nearly 5% of the combined GDP for the region¹¹. There is an alarming trend in the region that some countries are in a constant mode of response and recovery given the frequency and the magnitude of the disaster events and that their fiscal sustainability in the medium and the long run are at its limit. A recent analysis of country debt portfolios has revealed that ten PICs are already at a high risk of external debt distress - a problem made worse by disasters and the COVID-19 pandemic¹². Without strong fiscal capabilities, the ability of PICs to pursue a resilient development pathway will be a challenge.

Furthermore, the social impacts of disasters to Pacific communities have also been devastating. When disasters strike, social sectors such as that of health, women, education etc are the most impacted¹³. The social sector is where the most vulnerable portion of the population are

Major Disaster Types

- Storm – 43%
- Flood – 16%
- Drought – 10%
- Earthquake -7%
- Volcano – 5%
- Others – 19%

Climate and Disaster Risks - Pacific

- Storm surges in the Pacific are projected to increase in the frequency by as much as 1000-fold by 2100.
- Increase in tropical storm intensity.
- By 2100, sea-level rise may reach more than 1 meter.
- 0.6-1.4° C increase in temperatures by 2060.
- Rainfall events to become more intense and frequent.
- 26% of the population are exposed to tropical cyclones.
- 73% of the population are exposed to seismic hazards.
- A person in PSIDS is 3-5% more at risk than those in the rest of the Asia Pacific.

Table 1. Pacific Risk Profile

⁹ Eckstein, D., Künzel, V., & Schäfer, L. (2021). Global Climate Risk Index 2021: Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2019 and 2000-2019.

¹⁰ UNESCAP (2022) Pathways for Adaptation and Resilience for the Pacific SIDS: Asia Pacific Disaster Report 2022 for Pacific SIDS.

¹¹ *ibid*

¹² Sirimaneetham, V (2022) Ensuring Public Debt Sustainability in the Pacific Small Island Developing States, Issue Paper, pp 1-25.

¹³ UNESCAP (2020) The disaster riskscape across the Pacific small island developing states: key takeaways for stakeholders, Available at: <https://repository.unescap.org/handle/20.500.12870/3954>

engaged. By negatively impacting the social sectors, disasters continue to deteriorate equalities of income and opportunity, and as a consequence marginalized groups are made more vulnerable to future disasters and socioeconomic shocks, prolonging poverty over several generations¹⁴.

The Pacific region has long recognized that solidarity as a region and pursuing a regional approach to support national and local resilience building to climate change and disasters is the only viable pathway given the unique and special circumstances of individual PICs. Additionally, a regional approach is critical as the risk landscape of the Pacific is becoming more complex, interconnected and more importantly transboundary in nature. The next section will discuss the regional policies that Pacific Island Forum Leaders have endorsed as guidance for regional approaches to strengthening resilience against climate change and disasters.

Regional Disaster and Climate Change Risk Policy Landscape in the Pacific

The Framework for Resilient Development in the Pacific (FRDP)

The overarching regional guidance for an integrated approach to Climate Change and Disaster Risk Management in the Pacific is provided through the *Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management (FRDP) 2017-2030*. Endorsed in 2016, the FRDP provides high level strategic guidance to different stakeholder to support an integrated approach to address climate change and disaster risk; strengthen low carbon development; and strengthen disaster preparedness, response and recovery¹⁵. The implementation of the FRDP is coordinated through the Pacific Resilience Partnership (PRP).



¹⁴ *ibid*

¹⁵ PIFS (2016) Framework for Resilient Development in the Pacific- An integrated approach to addressing climate change and disaster management. Available: <https://www.forumsec.org/frdp/>

The Pacific Resilience Partnership

To accelerate and catalyse action for resilience building, the Pacific Resilience Partnership (PRP) envisioned in the FRDP was endorsed by Pacific leaders in 2017. The PRP is a network of stakeholders that drive resilience actions at national, sub-national, regional and international levels. Its rationale is to create an enabling environment for building resilience through multiple actors including government, civil society organisations (CSOs), private sector, development partners, academia, traditional and community leaders under a single umbrella implementation mechanism to take forward the vision of the FRDP¹⁶.

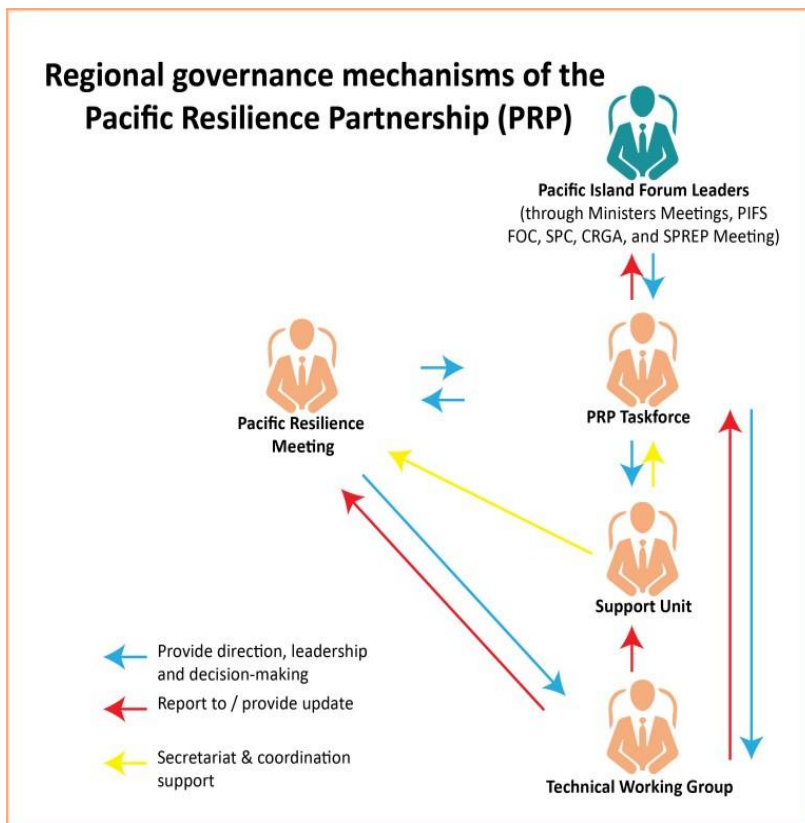


Figure 1. FRDP Governance Structure

Under the regional governance arrangements, the PRP is headed by an apex body, the PRP Taskforce. It also includes a biennial Pacific Resilience Meeting which enables a multistakeholder group to gather and share lessons and experiences on FRDP implementation. The PRP is further comprised of a series of Technical Working Groups (TWG) which coalesce to address specific resilience building priorities. Currently there are five TWG under the PRP¹⁷.

¹⁶ Pacific Resilience Standards: A Practitioner’s Guide, (2021), Pacific Resilience Partnership, Available: <https://www.resilientpacific.org/en/pacific-resilience-standards>

¹⁷ These priority areas are: Risk Governance and Resilient Development, Disaster Risk Financing, Human Mobility, Localization, and Information Knowledge Management.

The Pacific Resilience Standards

Under the guidance of the PRP, the 2021 Pacific Resilience Standards (PRS) were developed to enhance implementation of the FRDP, and in particular, to introduce a more structured approach to the implementation of the FRDPs' ten guiding principles. The PRS is a practical tool to strengthen the effectiveness, quality, and integrity of resilience building efforts; and to plan, implement, and evaluate resilient development interventions at national and subnational level in all PICs and territories¹⁸.

The primary aim of the PRS is to support implementation of the FRDP and ensure that: “resilience building in the Pacific is integrated, inclusive, informed and sustained¹⁹.

The PRS comprise of four standards and draw on the ‘building blocks of risk governance’²⁰ to provide guidance on its implementation (see Figure 3). The PRS also provides a Compendium of Case Studies to demonstrate good practice in resilience building that aligns to the PRS as well as provide practical clarifications to those who required specific examples of where the PRS have been or are being applied.²¹



Figure 2. PRS Framework

Broader Efforts for Resilience Building in the Pacific

2050 Strategy for the Blue Pacific Continent

Endorsed in 2022, the 2050 Strategy for the Blue Pacific Continent provides the overarching blueprint to advance Pacific Regionalism for the next three (3) decades articulating the region's long-term vision, values, and key thematic areas and strategic pathways (see Figure 3). The rationale of the Strategy was borne out of the Leaders' strong conviction that given the

¹⁸ PIFS (2021) Pacific Resilience Standards: A Practitioners Guide, pp 1-52.

¹⁹ ibid

²⁰ UNDP (2016) Risk Governance Policy Brief. Available <https://www.undp.org/pacific/publications/risk-governance-policy-brief>

²¹ PIFS (2022) Pacific Resilience Standards: Compendium of Case Studies, pp 1-52.

increasing complexity of threats and risks faced by the Pacific, securing the future of the Pacific cannot be left to chance but will require a long-term vision, strategy and commitment²².

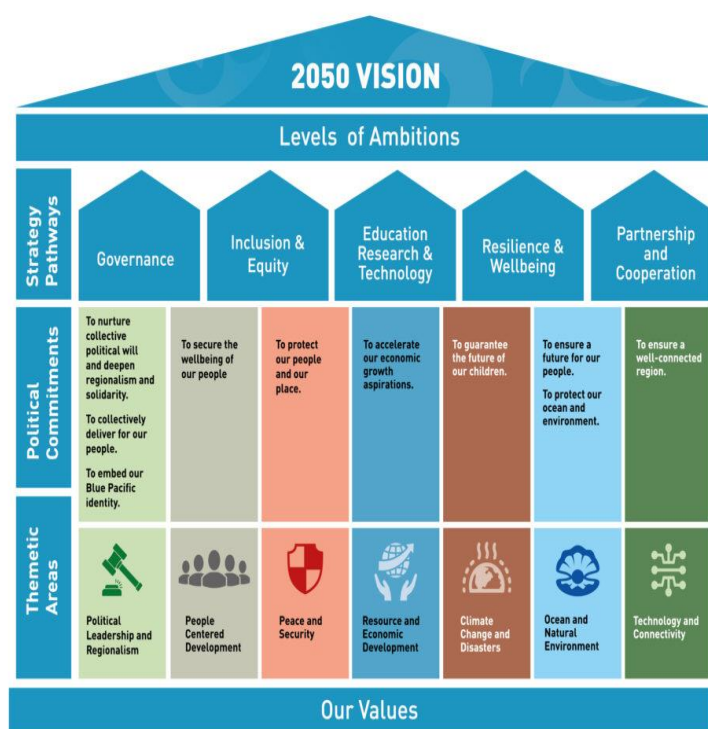


Figure 3. Thematic Areas of the 2050 Strategy for the Blue Pacific Continent

Climate Change and Disasters is one of the seven (7) thematic areas identified under the Strategy. In line with existing regional initiatives, the Climate Change and Disasters thematic area explicitly recognises the impacts and threats of disasters and climate change impacts to the people and the statehood of many PICs and emphasizes the need for agreed proactive measures that are collective and culturally appropriate in nature²³. Work is currently underway to develop an implementation plan for the Strategy that will advance existing regional activities as well as supporting the achievement of national and global objectives and commitments.

The 2018 Boe Declaration

The 2018 Boe Declaration on Regional Security and its 2019 Action Plan recognises that climate change is the single greatest threat to regional security and that the Pacific is confronted with several complex security challenges²⁴. In addition to the traditional ‘law and order’ focus areas, the Boe Declaration and Action Plan emphasises climate security, environment and resource security, human security and humanitarian assistance as critical focus areas. The need to strengthen humanitarian assistance, disaster preparedness and response and long-term resilience are specifically mentioned in the Boe Declaration and its Action Plan. A major priority in this regard is the establishment of a Regional Humanitarian and Disaster Response Mechanism²⁵.

These regional initiatives are also linked to global DRR and Climate change efforts such as those articulated in the:

- The Sendai Framework,

²² PIFS (2019) Fiftieth Pacific Islands Forum Leaders, Funafuti, Tuvalu, Forum Communique. Available: <https://www.forumsec.org/wp-content/uploads/2019/08/50th-Pacific-Islands-Forum-Communique.pdf>

²³ PIFS (2022) 2050 Strategy for the Blue Pacific Continent. ISBN: 978-982-202-079-03.

²⁴ PIFS (2019) Boe Declaration Action Plan, pp 1-34.

²⁵ *ibid*

- The SAMOA Pathway,
- The 2015 Paris Agreement,
- The 2030 Sustainable Development Goals.

Progress of Disaster Resilience Efforts to Date

Attaining clarity on the progress of PICs resilience efforts particular to climate change and disaster risk is a challenge. Anecdotal evidence indicates that in the policy space there is progress in terms of national strategies, policies and plans to provide guidance and direction on the approach to address climate change and disaster risk²⁶. Most PICs have national Climate Change Policies, Disaster Risk Management Policies, National Adaptation Plans (NAP) etc., whilst others like that of Tonga (and previously the Republic of the Marshall Islands) had a Joint National Action Plan for Climate Change and Disaster Risk Management (JNAP) which offers an integrated approach to addressing risks. Other countries such as Fiji have passed a Climate Change Act, whilst Tonga and Samoa have developed specific targeted policies/strategies for disasters through their respective Disaster Risk Financing Strategy/Policy.

A 2022 report of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) indicated that some progress has been made by PICs in the achievement of the 2030 Sustainable Development Goals (SDG) targets²⁷. The report however, indicated that for those disaster risk related SDGs (for which data is available e.g., SDG 1, 3, 10, 11, 13 etc.) have either seen a reverse trend or are currently falling short of meeting the 2030 SDGs goals²⁸. PICs therefore need to step up their investments in disaster risk reduction, specifically in resilience building to minimize their risks and losses from disasters.

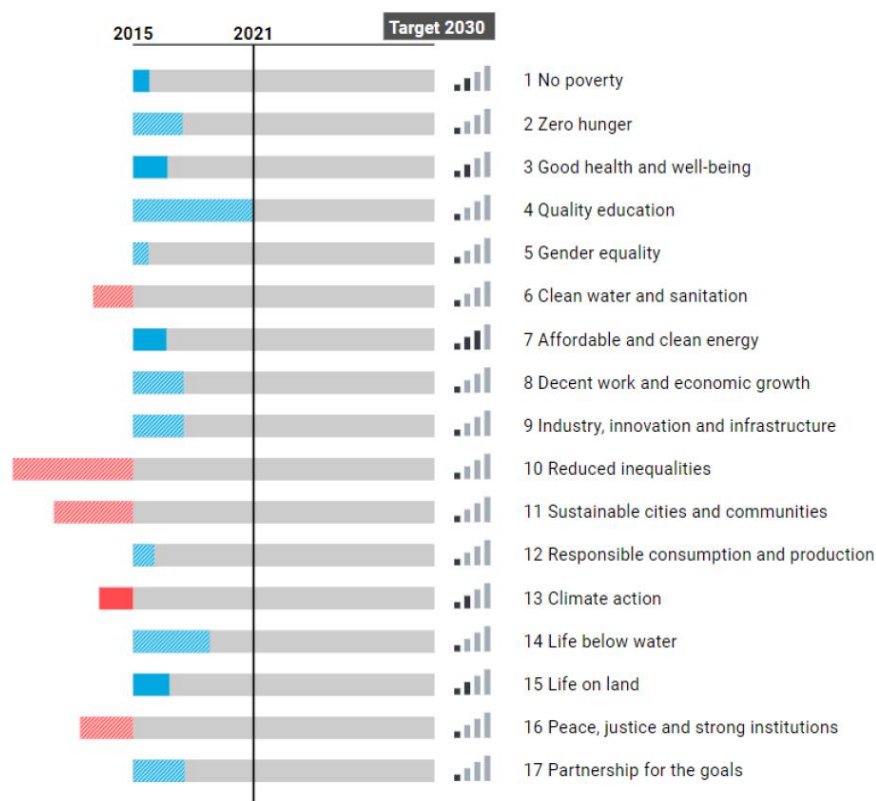


Figure 4. 2020 Snapshot of the SDG progress in the Pacific

²⁶ Samuwai, J., & Hills, J. (2018) Assessing Climate Finance Readiness in the Asia-Pacific Region. Sustainability, 10 (4), 1192. <https://doi.org/10.3390/su10041192>

²⁷ ESCAP (2022) Pathways for Adaptation and Resilience in Pacific SIDS. Asia Pacific Disaster Report 2022 for Pacific SIDS.

²⁸ ibid

Consequently, preliminary evidence from the 2022 Mid Term Review of the Sendai Framework amongst Small Islands Developing States (SIDS) including PICs reveals numerous challenges that inhibit SIDS from achieving the international resilience benchmarks. These include challenges in²⁹:

- Accessing concessional financing,
- Unbalanced posture towards ex-post financing rather than ex-ante financing,
- The preoccupation with climate financing compared to disaster risk financing,
- The lack of public and private sector financing,
- Attaining leadership support towards innovative financing,
- Human resource constraints,
- Lack of data and capacity to analyze,
- Communication and infrastructure constraints,
- Institutional constraints,
- Monitoring and reporting constraints, and
- Partnership constraints.

Resilience in Action: The Pacific Resilience Program (PREP)

The PREP is a ‘series of projects’ designed to strengthen risk governance and resilient development in four (4) PICs which are the Republic of Marshall Islands (RMI), Samoa, Tonga and Vanuatu. There are two regional organisations that are part of the PREP being the Pacific Community (SPC) and the Pacific Islands Forum Secretariat (PIFS). The PREP adopts a regional approach to programming and its primary objectives are to:

- i. Strengthen early warning and preparedness;
- ii. Strengthen investments in resilient infrastructure and retrofitting of key-public assets to meet internationally recognized resilience standards, and;
- iii. Strengthen financial resilience to disaster events.

The PREP recognizes that these targeted areas of investment are critical and need strengthening given the frequency and severity of disasters in the region. More importantly, by adopting a regional programming approach, it is envisioned that these investments will allow for economies of scale, standardized approaches, improved coordination of climate resilience and disaster risk reduction efforts and spreading risk across the region³⁰.

Samoa, Tonga, RMI, Vanuatu³¹, the Pacific Islands Forum Secretariat (PIFS) and the Pacific Community (SPC) participated in the Phase I of the PREP, while Phase II has only included RMI thus far. The initial total funding for the PREP Phase I is US\$45.69 million³² (made up of grants and credits) which was funded through the World Bank IDA, the Global Environment

²⁹ UNDESA-UNDRR-AOSIS (2022) Small Islands Developing States Gaps, Challenges, and Constraints in Means of Implementing the Sendai Framework for Disaster Reduction, Draft Report.

³⁰ World Bank (2015) Project Appraisal Document- Pacific Resilience Program (PREP), Report No: PAD1095, pp 1-155.

³¹ Vanuatu no longer participates in the program as it has decided to use its IDA allocations in other national priority areas.

³² Figure has increased due to additional funding given to countries during the course of the program.

Facility (GEF), the Pilot Program for Climate Resilience, the Global Facility for Disaster Risk Reduction and Recovery and national contributions³³.

The PREP is not a ‘from scratch program’ but rather was informed by the World Bank’s DRM pillars supported nationally and the lessons learned from those operations. Part of the PREP builds upon the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) - a regional program which enabled the development of national risk profiles for all 14 Pacific Island Countries (plus Timor-Leste) to inform the design and development of a regional risk insurance pool. Samoa and Tonga are a part of the PCRAFI³⁴. The PREP also builds on the Pilot Program for Climate Resilience (PPCR) that was supported by the Asia Development Bank (ADB) and primarily implemented by the Secretariat of Pacific Regional Environmental Program (SPREP) and supported by other CROP agencies³⁵. Finding synergies with these regional initiatives avoids duplication of effort, establishes complementarity and builds on the country level activities that are already supported and funded.

Key Challenges - PREP Country Experiences

This report captures the views of various stakeholder groups in the Republic of the Marshall Islands, Samoa, Tonga, the Pacific Community and Pacific Islands Forum Secretariat being beneficiaries of the PREP investments provided through the World Bank. The views of stakeholders were collated to portray the experience and lessons learned from the PREP to inform a growing body of knowledge on climate and disaster resilience building in the Pacific. By sharing the experiences and lessons learned from the PREP, it is hoped that all PICs will be able to derive some benefit in terms of how they pursue resilience building in the future.

From the outset, it is clear the existing technical knowledge and financial capacity in the PREP participating countries is insufficient in many cases to fully address these vulnerabilities and reduce risks³⁶. Most of the PICs have low implementation and absorptive capacities, and in many cases the effectiveness of early warning response is heavily influenced by their expansive geographical spread, and the limitations and high costs of communication systems³⁷. An evaluation of ADB-funded projects in the Pacific have highlighted that less than half of all its projects implemented in the region are assessed successful, and in the past years, the percentage of successful projects have dropped from 59% from 2016-2018 to 42% from 2017 to 2019³⁸.

There are also significant challenges in translating national climate and disaster resilient policies into sector policies and investments despite progress made in terms of PICs having strategic national guidance through the development of their national policy and plans to respond to disaster risk and climate change³⁹. Translating policies and plans into transformative

³³ World Bank (2015) Pacific Resilience Program (PREP): Project Information Summary, pp 1-2.

³⁴ World Bank (2015) Project Appraisal Document- Pacific Resilience Program (PREP), Report No: PAD1095, pp 1-155

³⁵ Ibid

³⁶ ibid

³⁷ ibid

³⁸ ADB (2020) CPS Final Review Validation: Pacific Approach- Validation of the Pacific Country Partnership Strategy Final Review, 2016 – 2020, pp 1-144.

³⁹ ibid

and sustainable impactful actions is further complicated as local institutions, CSO groups, village communities, community volunteers etc., lack capacity, and are not adequately trained in DRM and climate resilience⁴⁰.

The other key challenge in the PREP countries (that is also common across other PICs) has been the fragmentation of donor support for climate and disaster resilience. PICs are constantly being challenged with having to manage multiple projects, which consequently fragments in turn their already limited institutional capacity⁴¹. Fragmentation is due in part to the multiplicity of adaptation and DRM funds at the global level and the approaches adopted by regional development partners, including the World Bank, which tend to operate on a country-by-country and project-by-project basis in the area of disaster and climate resilience and not consolidating these efforts across the region⁴². There are also existing systemic challenges at the national level such as coordination between line agencies which contribute to fragmentation.

How does the PREP align to national and regional/international initiatives?

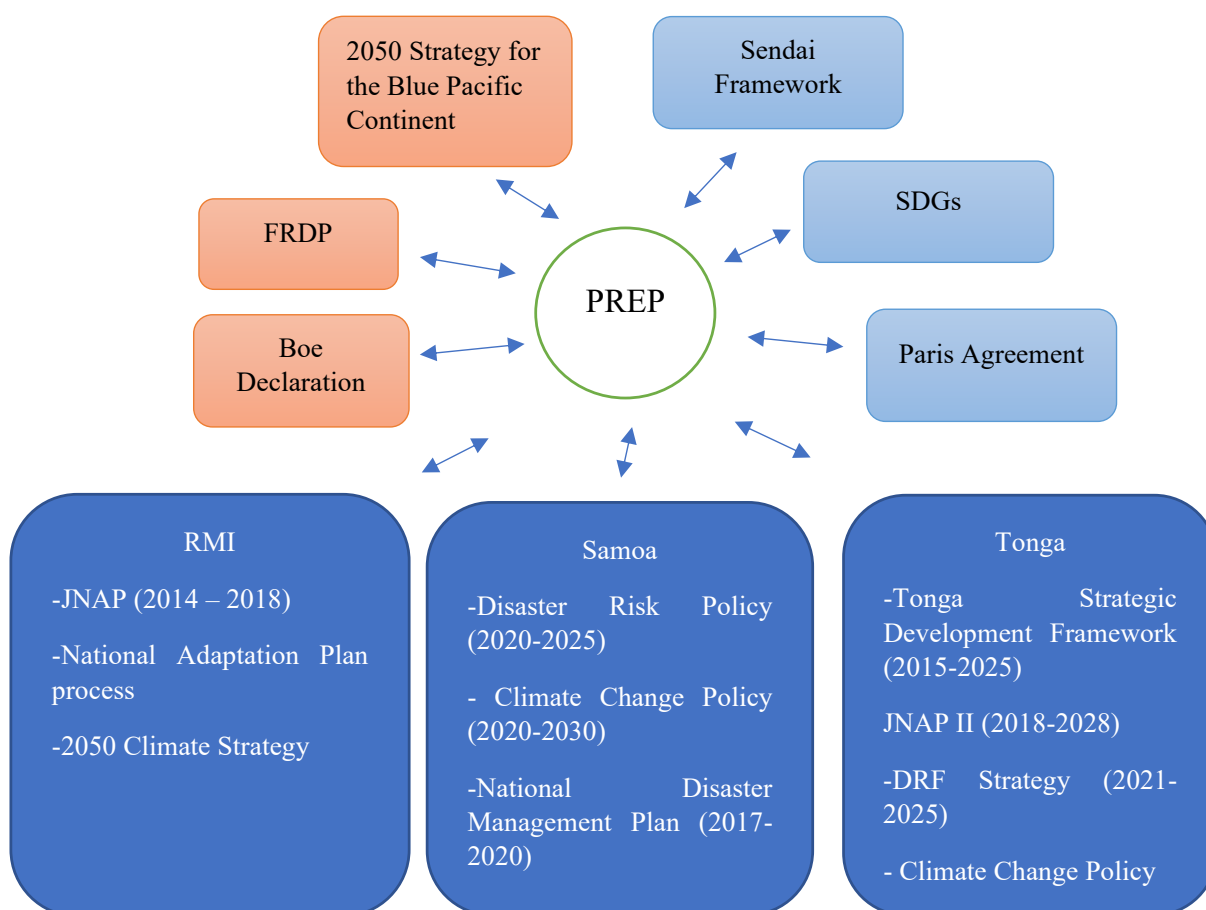


Figure 5. PREP's alignment to national and regional/international initiatives.

⁴⁰ *ibid*

⁴¹ *ibid*

⁴² *ibid*

What does the PREP seek to achieve?

The aim of the PREP is to consolidate existing efforts and deliver actions through a coordinated approach that is informed by both ongoing national and regional initiatives. The aim of the PREP is to contribute to the resilient and sustainable economic and social development of the PREP countries and of the region as a whole.

From the perspective of the World Bank, the PREP is central to the fulfilment of the twin goals and lies at the heart of poverty reduction and shared prosperity, given the extreme vulnerability of the participating countries to disasters, economic shocks and climate change⁴³. The PREP recognizes that whilst reducing the impact of disasters will have significant economic benefits to beneficiary countries, strengthening the non-monetary benefits of DRM such as improving living conditions of citizens is a critical dimension of poverty reduction and shared prosperity in the Pacific region⁴⁴.

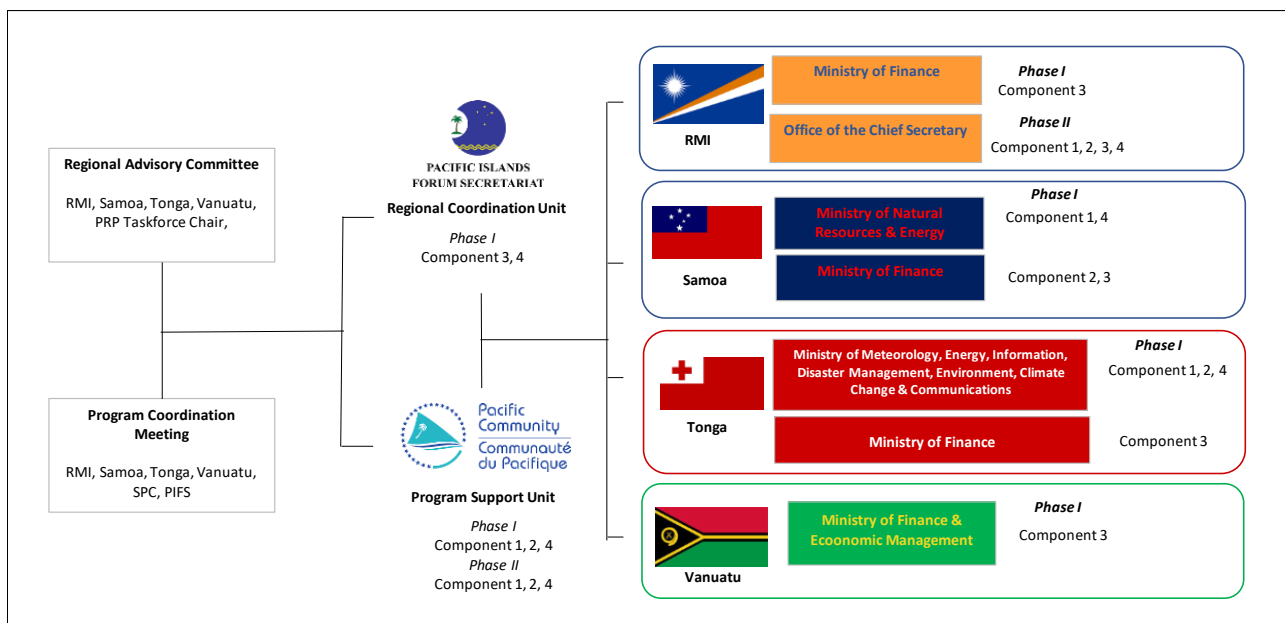


Figure 6. PREP Implementation Arrangements

⁴³ *ibid*

⁴⁴ *ibid*

Overview of the PREP Countries

RMI Risk Profile

Major Disaster Types (2011-20)

- Drought – 50%
- Storm – 25%
- Flood – 25%

Disaster Profile (2011-20)

- Total population affected - 27,744
- Total damage – US\$ 4.9 million
- Total Average Annual Losses – US\$7.45 million

Hazards Likelihood

- Storm – high likelihood
- Flood - high likelihood
- Drought – high likelihood
- Earthquake – high likelihood
- Landslides – very low likelihood
- Wildfires – very low likelihood

Climate and Disaster Risks

- Typhoons are projected to be less frequent but more intense.
- Average rainfall is projected to increase, along with more extreme rain events.
- 2.8° C increase in temperatures projected by the end of the century.
- By 2100, sea-level rise may reach more than 1 meter.
- Between 1999 and 2018, Marshall Islands was the 172nd country most affected by extreme weather events.

Republic of the Marshall Islands (RMI)

RMI is one of the smallest, isolated and vulnerable countries in the world. It is classified as a lower middle-income country with a 2019 GDP of US\$ 249 million and a per capita GDP of US\$ 4,171⁴⁵. The real GDP is estimated to have contracted by 3.3 percent in FY2020 and is projected to further decline by another 1.5 percent in FY 2021 due to continued travel restrictions⁴⁶. The country consists of 29 atolls and 5 isolated islands (24 are inhabited) and has a landmass of only 181km² which is set in an ocean area of 1.9million km². RMI's current population is estimated at 59,618 with more than half residing in the capital city of Majuro⁴⁷.

The size and the remoteness of RMI contributes to the increased cost of its economic activity, making it challenging to achieve economies of scale. Its remoteness imposes high transportation costs and increases cost of trade fundamentally constrains the competitiveness of its exports and services internationally⁴⁸. Moreover, these same factors also push up the cost and complexity of providing public services and fulfilling the basic functions of the Government. Exports are low and its narrow domestic economy increases its high dependence on

Table 2. RMI Risk Profile (Source World Bank (2021))

⁴⁵ World Bank (2021) Marshall Islands. Available <https://data.worldbank.org/country/MH>

⁴⁶ Statistics for Development Division (2022), Pacific Community. Available: <https://sdd.spc.int/mh>

⁴⁷ World Bank (2021) Marshall Islands. Available <https://data.worldbank.org/country/MH>

⁴⁸ World Bank (2015) Project Appraisal Document- Pacific Resilience Program (PREP), Report No: PAD1095, pp 1-155

imports, which are funded largely by the sale of offshore fishing rights and high levels of foreign aid⁴⁹. Foreign aid funds a very large portion of the public sector that dominates the economy⁵⁰.

The population of RMI is concentrated on small low-lying atolls and this makes RMI vulnerable to climate induced disasters. The country is vulnerable to occasional typhoons. Like other low-lying PICs, its 370km coastline which is home to 99% of the population renders it particularly susceptible to extreme waves and high tides⁵¹. Catastrophe disaster risk modeling indicates that RMI is expected to incur, on average, US\$3million/ year in losses due to earthquake and tropical cyclones⁵². In the next 50 years, RMI has a 50% chance of experiencing a loss exceeding US\$53million and a 10% chance of experiencing a loss exceeding US\$163million⁵³. This estimate however, does not consider climate change, which contributes to loss of livelihood, coastal settlement, infrastructure, ecosystem and economic instability.

Whilst RMI has made some progress in terms of national level planning to respond to disasters and climate risk through its 2014 – 2018 JNAP, translating this policy to actions and resilient investments has been a significant challenge⁵⁴. There has been some progress on the ground, and experiences in RMI highlight the significance of forming strategic partnerships with local stakeholders, to allow greater ownership and national leadership of climate and disaster risk management initiatives⁵⁵. Similarly, evidence from RMI illustrate the value of making the environmental and social safeguards (ESS) country specific⁵⁶. Making ESS country specific

Lessons learned and Recommendations from the Review of RMI JNAP Implementations

Key Findings	Recommendations
1. Understanding Risks	
The JNAP lacks details on specific Risks it set out to address.	Integrated approach of the JNAP to be improve through use of scenario-building and analysis to inform design of national risk management strategies
2. Applicability and Approach	
While the JNAP provide details on the type of issues that must be addressed, it provides little methodological guidance on how to prioritize investments	Investment in human wellbeing is the most appropriate way to effectively consider and vet investments and the approach and impact of activities.
3. Institutional Ownership and Resourcing	
Efforts to implement the JNAP illustrate various challenges which involve integrating responsibilities and awareness of climate change issues into established government systems.	Strategically reorganizing institutional arrangements and responsibilities is required to effectively address complex and interrelated risks.

Table 3. Findings from RMI's JNAP Implementation Review (Source, PIFS (2022))

⁴⁹ *ibid*

⁵⁰ *ibid*

⁵¹ *ibid*

⁵² PCRAFI (2011) Country Risk Profile- Marshall Islands. Available <https://pcric.org/wp-content/uploads/2022/03/Marshall-Islands.pdf>

⁵³ *ibid*

⁵⁴ PIFS (2021) Increasing foresight, Building Resilience- A Case Study: The Implementation Progress Review of the Marshall Islands Joint National Action Plan on Climate Change Adaptation and Disaster Risk Management (2014-2018), pp 1-40.

⁵⁵ World Bank (2015) Project Appraisal Document- Pacific Resilience Program (PREP), Report No: PAD1095, pp 1-155

⁵⁶ *ibid*

establishes a collaborative approach between institutions and local stakeholders and avoids overloading governments with limited absorptive capacity⁵⁷.

Table 4. Samoa Risk Profile (Source (World Bank 2021)) **Samoa**

Samoa Risk Profile
<p>Major Disaster Types (2011-20)</p> <ul style="list-style-type: none"> • Drought – 50% • Storm – 25% • Flood – 25%
<p>Disaster Profile (2011-20)</p> <ul style="list-style-type: none"> • Total population affected - 27,744 • Total damage – US\$ 4.9 million • Total Average Annual Losses – US\$41.51 million
<p>Hazards Likelihood</p> <ul style="list-style-type: none"> • Storm – high likelihood • Flood - medium likelihood • Tsunami – high likelihood • Earthquake – medium likelihood • Volcano – low likelihood • Landslides – low likelihood • Wildfires – low likelihood
<p>Climate and Disaster Risks</p> <ul style="list-style-type: none"> • Tropical cyclones are projected to be less frequent but more intense. • Little change in mean annual rainfall is projected, with more extreme rain events. • 2.7° C increase in temperatures projected by the end of the century. • By 2100, sea-level rise may reach more than 1 meter. • Samoa is ranked 98th with the medium disaster risk.

Samoa is a lower middle-income country with a 2021 GDP of US\$ 799 million and a per capita GDP of US\$ 3939⁵⁸. The population of the country is 200,144 and about 75% lives on the island of Upolu which is also home to Apia the Capital⁵⁹. Savaii the second largest island of Samoa hosts the remaining 25% of the population⁶⁰. Historically, Samoa has been considered as one of the best performing economies of the Pacific with GDP growth averaging 4.3% annually⁶¹. However, like other PICs, Samoa is very vulnerable to global shocks and disaster events, for example the COVID-19 pandemic which resulted in the contraction of GDP by 8.5% in 2021 following a contraction of 3.2% in 2020⁶².

Samoa’s economic instability has been compounded significantly by a spate of disasters including that of the 2009 earthquake and the resultant tsunami, and the 2012 TC Evan (considered to be the worst cyclones in Samoa) which caused damage and loss of approximately US\$210million (30% of annual GDP)⁶³. Catastrophe modeling indicated that Samoa is expected to incur on average US\$10million/year in losses due to earthquakes and tropical cyclones⁶⁴. In the next 50 years, Samoa has a 50% chance of experiencing a loss exceeding US\$130million, and a 10% chance of experiencing a loss exceeding US\$ 350 million⁶⁵.

⁵⁷ *ibid*

⁵⁸ World Bank (2021) Samoa. Available <https://data.worldbank.org/country/samoa>

⁵⁹ *ibid*

⁶⁰ World Bank (2015) Project Appraisal Document- Pacific Resilience Program (PREP), Report No: PAD1095, pp 1-155

⁶¹ *ibid*

⁶² IMF (2021) Samoa- Staff Concluding Statement of the 2021 Article IV mission. Available <https://www.imf.org/en/News/Articles/2021/01/25/mcs012521-samoa-staff-concluding-statement-of-the-2021-article-iv-mission>

⁶³ *ibid*

⁶⁴ PCRAFI (2011) Country Risk Profile: Samoa. Available <https://pcric.org/wp-content/uploads/2022/03/Samoa.pdf>

⁶⁵ *ibid*

Like RMI, Samoa has also made some progress in terms of planning and having policies to respond to disasters and climate risks (Enhanced NDC, Samoa Disaster Risk Financing Policy 2022/2025, National Disaster Management Plan 2017 - 2020 and Samoa Climate Change Policy 2020), however, translating these policies into actionable investments has also been a significant challenge⁶⁶. In trying to action its resilience agenda, a Climate Resilience Investment and Coordination Unit which has an overarching focus on investments to strengthen climate resilience across different sectors is housed within the Ministry of Finance. The Ministry of Natural Resources and Environment (MNRE) houses the three institutions that are responsible for providing early warnings and response to meteorological, hydrological and geophysical hazards i) the Samoa Meteorological Division, ii) the Water Resource Division, iii) the Disaster Management Office. While there is a degree of cohesion between the institutions responsible for climate and disaster resilience, knowledge in these areas is not institutionalized in each sector, and DRM and early warning and preparedness activities in Samoa are challenged by limited technical and institutional capacity available locally⁶⁷.

Tonga Risk Profile

Major Disaster Types (2011-20)

- Storm – 70%
- Drought – 10%
- Epidemic – 20%

Disaster Profile (2011-20)

- Total population affected - 93,196
- Total damage – US\$145 million
- Total Average Annual Losses – US\$76.81million

Tonga

The Kingdom of Tonga consists of 169 islands with a total population of around 120,000. Tonga covers a land area of 748 square kilometers with an EEZ of about 700,000 square kilometers. Its small size, geographic dispersion and isolation and limited natural resources provide a narrow economic base. Agriculture, fishing and tourism accounts for most of its export earnings and it has a high dependency to external aid (approximately 15% of GNI)⁶⁸.

Tonga has, in past decades, been hit by several disasters that have rolled back and stifled its development pathway. In 2018, TC Gita which was considered to be one of the most severe cyclones in Tonga caused damage amounting to US\$164 million (estimated to be 38% of GDP)⁶⁹ whilst in the mist of the pandemic in 2020, TC

Table 5. Tonga Risk Profile (Source World Bank (2021))

Harold hit with estimated damage of USD\$111 million (25% of GDP)⁷⁰. The 2022 Hunga Tonga - Hunga Ha'apai volcanic eruption and the subsequent tsunamis caused damage estimated to be US\$ 90.4million (18.5% of GDP)⁷¹ and it is estimated that it will take US\$240

⁶⁶ World Bank (2015) Project Appraisal Document- Pacific Resilience Program (PREP), Report No: PAD1095, pp 1-155

⁶⁷ ibid

⁶⁸ ibid

⁶⁹ World Bank (2018) Post Disaster Rapid Assessments- Tropical Cyclone Gita, February 12, 2018, pp 1-128.

⁷⁰ RNZ (2020) Cyclone Harold said to cost Tonga more than US\$111 million. Available <https://www.rnz.co.nz/international/pacific-news/415062/cyclone-harold-said-to-cost-tonga-more-than-us111m>

⁷¹ World Bank (2022) Tonga Volcanic Eruption and Tsunami: World Bank Disaster Assessment Report Estimate Damages at US\$ 90 million. Available <https://www.worldbank.org/en/news/press-release/2022/02/14/tonga-volcanic-eruption-and-tsunami-world-bank-disaster-assessment-report-estimates-damages-at-us-90m>

million to fund the recovery and reconstruction phase⁷². Catastrophe risk modelling indicates that Tonga is expected to incur, on average US\$15.5 million per year in losses due to earthquakes and tropical cyclones due to earthquake and cyclones⁷³. In the next 50 years, Tonga has a 50% chance of experiencing losses exceeding US\$175 million/year and casualties high than 440 people, and a 10% chance of experiencing a loss exceeding US\$430million and casualties higher than 1,700 people⁷⁴.

The agency responsible for DRM is the Ministry of Meteorology, Information, Energy, Disaster Management, Climate Change and Communications in Tonga (MEIDECC) which has a significant focus on climate and disaster resilience. Tonga has created a special division in the MoF, the Aid Management & Resilient Development Division, to drive the financial protection agenda in Tonga. Whilst there is some degree of cohesion amongst these institutions, knowledge is not institutionalized in each sector and early warning and preparedness activities in Tonga are weakened by limits to technical and institutional capacity⁷⁵.

The next section details the respective key lessons learned from the RMI, Samoa and Tonga PREP projects. It is critical to note that while the PREP targets similar objectives in the three countries, the experience in these countries are unique to each given their contextual realities.

Hazards Likelihood

- Storm – high likelihood
- Flood - medium likelihood
- Tsunami – high likelihood
- Earthquake – high likelihood
- Volcano – medium likelihood
- Landslides – medium likelihood
- Wildfires – very low likelihood

Climate and Disaster Risks

- Tropical cyclones are projected to be less frequent but more intense.
- Extreme rainfall events are projected to become more frequent and more intense
- 2.7° C increase in temperatures projected by the end of the century.
- By 2100, sea-level rise may reach more than 1 meter.
- Tonga is ranked 2nd among the countries with the highest disaster risk due to high exposure to extreme natural events. and sea-level rise.

Key Findings and Lessons Learned

RMI

1: Flexible strategies enables donors to adapt their assistance to changing circumstances and tend to provide countries with incentives for development achievements.

Whilst modest, relative to the magnitude of other PREP investments, a portion of PREP funding is channeled to the Pacific Catastrophe Risk Insurance Company (PCRIC) for the payment of countries’ parametric insurance premiums. PCRIC is a regional captive insurance company owned by PICs through the Pacific Catastrophe Risk Insurance Foundation (PCRIF)

⁷² Government of the Kingdom of Tonga (2022) Prime Minister confirms recovery and resilience building plan needs TOP\$565.8 million, Available: <https://www.gov.to/press-release/prime-minister-confirms-recovery-and-resilience-building-plan-needs-top565-8-million>

⁷³ PCRAFI (2011) Country Risk Profile: Tonga. Available <https://pcric.org/wp-content/uploads/2022/03/Tonga.pdf>

⁷⁴ *ibid*

⁷⁵ World Bank (2015) Project Appraisal Document- Pacific Resilience Program (PREP), Report No: PAD1095, pp 1-155

and offers parametric insurance cover for tropical cyclones, earthquakes and tsunami for several PICs.

Unlike Tonga and Samoa which elected to retain their engagement in PCRIC with funding support from PREP, RMI, has however, elected to minimize investments in this component due to the mismatch of the existing parametric insurance cover and its risk profile⁷⁶.

Initially, the World Bank approved US\$2.5 million to extend the PREP support to RMI by providing an additional five years of insurance under PCRIC to provide immediate funds in the event of a major disaster, including tropical cyclones and tsunamis.⁷⁷ However, further assessment indicated that insurance covered under the PCRIC did not adequately address the RMI risk profile (e.g. droughts). RMI then advocated for and successfully repurposed the PREP I funding towards the current PREP II Component 3: Contingency Emergency Response Component (CERC), which is a reserve fund structured similar to the Disaster Assistance Emergency Fund (DAEF) within the national treasury, and is capitalized every fiscal cycle at US\$200,000 with matching funding from the US Government. The CERC is administered under the RMI Disaster Assistance Act 1987.

As it stands, the CERC aims to strengthen the emergency preparedness and immediate response capacity of RMI for low and medium-scale disasters. It would be triggered following the declaration of a national disaster (similar to funding under the DAEF) as per the CERC Project Operations Manual (POM). Notably, when the CERC is not triggered, the funds are deployed elsewhere in the project.

As recounted by a former top level public servant for the RMI, “...we tried to get US\$2 million into a resilience fund, which would be capitalized over time. It passed in the 2018-2019 budget but was never funded. In lieu of these challenges, we looked around at existing projects and right off the bat, PREP II was identified...” In this way as he further elaborated, “the World Bank have also been helpful in getting our leaders to not just talk the talk but walk the walk, and to prioritize resilience. No other partner other than the World Bank has been so responsive”.

The case of the RMI above clearly reveals the importance of donors to implement flexible strategies in their programs so that they can adapt their assistance and respond to changing circumstances and needs of countries. More importantly flexibility of donor strategies also tends to provide incentives for good performance particularly to the recipient countries to ensure that the funds are managed effectively.

2: Current environmental safeguards intended to ensure sustainable development is a challenge and may result in more carbon-intensive investments in country.

Twenty (20) of the twenty-two (22) stakeholders interviewed in RMI shared similar reflections on the environmental and social safeguard (ESS) policy requirements of the PREP. There is general consensus that the ESS was too restrictive on locally sourced aggregate leading to concern of its impacts on achieving the RMI PREP II objective of strengthened coastal resilience.

⁷⁶ RMI bought cyclone cover from PCRIC despite the country not being vulnerable to such events.

⁷⁷ The World Bank. World Bank to Boost Marshall Islands Climate Resilience. 28 September 2018. <https://www.worldbank.org/en/news/press-release/2018/09/28/worldbank-to-boost-marshall-islands-climate-resilience>

The PREP II Environmental and Social Management Framework (ESMF) establishes that “*there are limited, if any, local options for the sustainable sourcing of large aggregates needed for the kind of hard engineering solutions envisaged for coastal protection works for Ebeye or other parts of RMI*”. However, concerns were raised by participants on the sustainability of these requirements. A participant noted the need to rethink and localize the ESS requirements of donors by stating that “*...The physical process of sourcing materials for the Ebeye seawall has highlighted this key challenge...[and] is leading to a potential budget blowout. In the long term RMI needs to find sustainable sources within the RMI, and even if not, they will need to develop appropriate policy frameworks providing for locally sourced materials notwithstanding extraction might cause adverse effects. This might involve offsetting, mitigation or minimizing impacts rather than absolute avoidance.*”

More importantly, the requirements to externally source aggregates also raise questions on the concept of ‘sustainability’ particularly environmental sustainability in terms of carbon footprints. Given the remoteness and distance of RMI to the global market centers, it is expected that transporting aggregates and materials to RMI will result in an extensive carbon footprint and can undermine RMIs’ ambitious Nationally Determined Contributions (NDC) target of reducing emission particularly from the transport sector which include the decarbonization of its shipping sector⁷⁸. In its revised NDC, RMI has committed to reduce emissions from the domestic shipping industry by at least 40% below 2010 levels by 2030 and full decarbonization of the sector by 2050⁷⁹.

In their attempt to find sustainable sources within the RMI, the PREP II ESMF committed the RMI Environmental Protection Authority (EPA) to conduct proper due diligence to ensure compliance with World Bank policies. In response, the RMI EPA is spearheading a collaboration with national and subnational government stakeholders to conduct a three-site pilot study that will assess potential sustainable methods of sourcing rock sized aggregate in country.

Additionally, the PREP is also funding a Sustainable Aggregate Assessment for sand sized sediment under the supervision of the Pacific Community (SPC), which includes an environmental social impact assessment, geotechnical investigations, and a market analysis for both Majuro and Ebeye where LiDAR data secured under the PREP project through SPC is available. So far, only a draft of the environmental social impact assessment has been completed which indicated hydraulic dredging of sand sized sediment as the preferred extraction method. However, given the lack of technical capacity on the ground to work with SPC’s technical teams, external expertise is needed, and this will inevitably delay the progress of activity implementation given the current global travel restrictions brought about by the COVID-19 pandemic.

Irrespective of the outcomes, the attempts to revise the ESS requirements will be a challenge given that it is one of the cornerstones of the World Bank’s efforts in its vision to protect people and the environment and most importantly ensure sustainable development.

⁷⁸ RMI (2020) Updated Communication of the Marshall Islands Paris Agreement NDC. Available <https://policy.asiapacificenergy.org/sites/default/files/RMI%20NDC-Update.pdf>

⁷⁹ *ibid*

3: Government and Development Partners alike must strive to ensure fit-for-purpose community consultative practices to ensure meaningful engagement and participation, not just communication.

It was quite clear from discussions among stakeholders in Ebeye that part of the frustration with the seawall can be attributed to the approaches adopted to conduct community consultation activities. Several aspects were highlighted as contributing factors, including the perceived slow pace of large infrastructure projects of this nature. Moreover, there is indication that the Ebeye community does not necessarily understand or appreciate the challenges associated with World Bank-funded projects, and their design process. There is some interest in the different designs and the finer elements of the design and performance criteria, but at the end of the day, all communities really care about is that they want to see the wall built sooner rather than later. Clear and constant communications of the project activities as well as its challenges is critical in order to manage these overly optimistic expectations.

A possible contributing factor to the challenges in meaningfully engaging communities in RMI was that that seawall design-built team's composition lacked a locally based representative. To mitigate this issue, different members of Ebeye's leadership have acted as facilitators during community consultations, alongside the project personnel based in Ebeye. Additionally, the project design-build team subcontracted a local non-governmental organization experienced in community consultation to do the in-person consultations.

Despite the steps taken above, some stakeholders still felt that the in-person consultations were less effective and were unable to relate to the discussions carried out, due to the generational difference between them and the appointed community facilitators. This concern points to the possible revisiting of approaches when selecting local capacity to lead the community engagements. Additionally, there has also been suggestions from communities on the need to translate development concepts such as resilience, sustainability, safeguards etc. into the Marshallese language; something that has been missing throughout the community consultations on Ebeye to help communities better understand the 'why' the project activities are being designed the way they are as well as the potential challenges and risks associated with it.

A possible alternative approach is to adopt more visual tools, particularly in translating development and technical terms and concepts when engaging the communities. Efforts are currently underway to recalibrate the impacts of the proposed seawall models so that it is easily understood by communities.

Finally, timely updates to all community stakeholders and government, concerning the status and progress of the project could enhance the consultation process. While it is recognized that engagement amongst Ebeye leadership was timely (as they tend to receive project updates on a weekly basis), consultations with community revealed that this strategy still needs to be strengthened as key messages need to be shared in a consistent manner to promote a shared understanding of expectations across communities.

4: Coastal resilience and adaptation solutions are only as effective as the vulnerability assessments that support them, and the latter are only as good as the data used to develop them.

The PREP has contributed significant investments in key datasets towards preparedness and adaptation planning in the RMI. These include: a LiDAR dataset commissioned by the SPC for Majuro and Ebeye; corresponding coastal vulnerability assessments to determine which parts of the island will be severely affected under different sea level rise and storm driven inundation scenarios, and; physical modeling completed alongside ocean models to project wave heights and their impact on coastal infrastructure on Ebeye.

These investments provide strong evidence of the need for improved evidence-based planning to risk inform investments. As aptly highlighted by an Ebeye seawall design engineer, “...*the use of a flume for physical wave modeling has helped save money by allowing us to realize [an] opportunity to bring the seawall crest level down by over a meter. This [cost saving] insight is gained from use of the physical wave model...*”

However, the availability of datasets is not uniform across RMI. For those rural atolls and islands of the RMI that also fall under the remit of the PREP investments, there are limited empirical datasets collected and risk modeling undertaken to support the RMIs’ overall adaptation planning efforts. As the PREP is designed to also contribute to RMI’s National Adaptation Plan (NAP) (also considered to be RMI’s ‘Survival Plan’), it also engages in the broader challenging questions on which communities need to be moved so that the necessary investments for example of building up certain islands/atolls can take place. As stated by a stakeholder these questions will be addressed via a “...*a community-led process that will allow our community to weigh in on our climate impacts that we witness and the pathways for adaptation they’d like to see the most...*”. Apart from inclusivity, it is also critical that the consultation approach that RMI undertakes also factors in the requirement for empirical planning, long-term flood risk scenario analysis and a priority framework that addresses those difficult transformative adaptation questions which include coastal vulnerability assessments to determine which parts of the island will be severely affected under different sea level rise and storm driven inundation scenarios.

The lack of an accessible national Geographic Information Systems (GIS) repository and national information system for the RMI was also highlighted as one of the limiting factors in enabling the PREP team on the NAP to exercise evidence-based adaptation planning. A national GIS repository and national information system to enable sharing and improve accessibility of coastal vulnerability data products contributed by the PREP, other development partners and nationally funded projects, may prove useful in promoting evidence and risk inform planning for RMI.

Samoa

5: Established regional institutions as well consultants that are well versed with the requirements of donors such as the World Bank need to play a greater role in providing advice regarding the requirements of such organisations to PICs.

It was clear from the discussions across the key stakeholders in Samoa that there was dearth of understanding about the World Bank processes as well as the scope of the work in the initial stages of the project, and it took time for those involved in the implementation to effectively understand the nuance of systems and processes of the World Bank. For example, the World Bank’s online procurement systems – the systematic tracking of exchanges in procurement (STEP). The STEP is considered a necessary pillar of the World Bank’s way of work as it

designed to help the World Bank and the recipient of funds plan, record and track key stages of the procurement process. More importantly it is designed to help the recipient of the fund achieve value for money in procurement by transforming data into knowledge, speeding up the procurement process, and improving accountability and transparency⁸⁰. The possible lack of understanding on the purpose and the objective of this system could be the reason why respondents have largely viewed the STEP as a time-consuming process that is complicated to use.

More importantly, there is also a general frustration towards working with external consultants engaged to support the technical aspect of the project, particularly in terms of their scope of work. While these external consultants may possess the required technical knowhow, they at times lack the intimate knowledge of the realities and the context of PICs and the region. Discussions with the Project Management Unit (PMU) revealed that initially, directives received from external consultants were followed ‘*blindly*’ as ‘*they did not know any better*’. The PMU highlighted that because they didn’t have the capacity to fully grasp the magnitude of the work, this resulted in progress of activities being implemented in an adhoc manner. It was also interesting to note that the Samoa’s Ministry of Finance (MoF) also shared the same sentiment of the PMU given the recent negative experiences with external consultants’ performance. It was therefore suggested that future projects of the similar nature, consider the engagement of regional bodies like SPC to assist local national capacity in scrutinizing the technical side, which will at the same time contribute to building local capacity. Similarly, there is also a need to review of regional bodies (CROP) roles in projects; there needs to be consideration for projects to be regional by design (i.e. regional project with SPC and PIFS etc.) rather than by ‘association’ to avoid ‘hassling’ countries with the minutiae of procurement and finance management requirements.

To help address the current ‘expertise gap’ donors and development partners should share good practices particularly when engaging external consultants. A successful recruitment practice that has been employed by DFAT and MFAT during the COVID-19 lockdown, was to engage a two-person team (i.e. an international and a locally based consultant) to undertake the locally based assignments. Such arrangement has been instrumental to ‘skill-transfer’ where the knowledge is imparted and shared between two consultants, while at same time the local consultants work closely with the implementing ministries to take projects forward. This can also be a mechanism to strengthen capacity building in Samoa (and other countries) and ensure the sustainability of projects in the long run.

6: The effectiveness of Early Warning Systems (EWS) is contingent on the quality of coordination amongst the relevant ministries.

There is a high level of appreciation being shared by the relevant stakeholders in government on the role that the PREP has played in strengthening the early warning and preparedness capability of Samoa and as aptly put by a participant “...*the PREP identified a lot of areas that the government needs to work at pertaining to early warning system[s]...*”. From the discussion it was also highlighted that coordination between relevant ministries and divisions during times of disaster have been challenging. The PREP investments in this area have not only

⁸⁰ World Bank (2022) Systemic Tracking of Exchanges in Procurement (STEP). Available <https://www.worldbank.org/en/projects-operations/products-and-services/brief/systematic-tracking-of-exchanges-in-procurement-step>

strengthened networking amongst the relevant agencies but also partnership as shared by a stakeholder that “...there is now improved networking between divisions but also with outside partners where the Bank allows direct procurement of systems that are compatible with institutions that have long term relationship with us, and this also enables long term support and off-contract support like NZ and Australia who always have mutual interests in the region. Thus, in the process we are also strengthening partnerships...”

Respondents have also indicated that the improved coordination and networking amongst the relevant agencies has resulted in improved and consistent communications to the public particularly when it comes to releasing warnings pertaining to approaching hazards. More importantly, improvement in coordination amongst agencies paved the way for impact-based early warning systems that is critical for anticipatory and early actions. Impact-based forecasting has enabled warnings to be more relatable and understandable by communities as it translates the technicalities into relatable concepts. As put across by a stakeholder “...communities are unable to relate if you’re talking about warnings in wind knots, but when you start relating to aspects such as breaking of branches, lifting of roofs or uprooting of trees, they start to get the message and will prepare accordingly...”

The newly built National Emergency Operating Center (NEOC) supported by the PREP has further strengthened the operations and coordination of the central disaster agencies in Samoa. The new NEOC now houses the Disaster Management Office (DMO) and provides office space for the Meteorological and the Water Division of MNRE. The co-location of all the divisions in one building is expected to not only strengthen coordination across agencies but most importantly improve the early warning and preparedness capabilities of Samoa.

7: There is value in developing a separate country Disaster Risk Policy to provide clarity and direction on how to pursue a targeted and cost-efficient approach to strengthening financial protection against disasters.

Samoa, similar to Tonga, have undertaken the first critical step in developing and adopting a standalone policy on DRF. The aim of such a policy is to not only demystify the quantum of finance that Samoa will need to respond to disasters but more importantly provide the clarity around options that are available in the national, regional and international financial landscape to enable immediate response to disasters.

Experience in Samoa has also indicated that when disasters occur multiple stakeholders advocate for their sector to be prioritized for fiscal resources, which invariably means that the MoF faces greater pressures to appease these interest groups. The DRF policy is therefore critical as it provides a sound and objective basis for the government to prioritize limited resources in disaster response.

With the understanding that no one instrument will adequately cover all the risks but rather that different instruments are needed to cover different layers of risk, the DRF policy clearly sends a message that strengthening financial protection will require a trade-off in managing the costs and risks. This insight according to the Samoan MoF has helped reshape the institutional approach to financial protection to disasters from a reactive stance to a more proactive or forward-thinking approach. According to the MoF, Samoa now emphasizes, as part of its approach to pre-arranged financing instruments such as insurance, contingent credit, risk pooling etc., that it can strengthen its financial preparedness to disasters. Samoa has recognized

that key to its fiscal stability and development progress is financial preparedness and risk financing solutions support this. In addition, Samoa also understands that being financially prepared is closely linked with their operational preparedness during disasters as funds need to be distributed in a timely manner to areas where it is most needed with minimal implications to the current budget.

A critical value add that the PREP brought to Samoa with regards to their approach to DRF was the establishment of a Contingency Emergency Response Component (CERC) in the project to be part of Samoa's DRF policy. The CERC is a financing instrument which has been integrated in the PREP to ensure that funds are available for urgent recovery needs in the aftermath of a disaster without the need for formal project restructuring. Consistent with the PREP's objectives, the CERC finances procurement of emergency response and relief critical goods and services, to quickly restore livelihoods, lifeline infrastructure and services following natural disasters or health-related outbreaks/emergencies. The CERC can also finance emergency recovery and reconstruction works and associated supporting consulting services. The CERC was activated in 2020 to provide US\$500,000 for personal protective equipment and medical goods for COVID-19. This was done in consultation with the Samoan government to ensure that the government capacity was not stressed, or funds exhausted before the end of the 2020 cyclone season. Several IDA-funded projects (for example, the Samoa Agriculture and Fisheries Productivity and Marketing Project, Samoa Climate Resilient Transport Project, and Samoa Aviation and Road Investment Project) all have CERCs in place to be triggered in an eligible crisis or emergency⁸¹. The establishment of the CERC reemphasized the notion that Samoa need not rely on one instrument alone to respond to disasters but to innovate in terms of establishing a range of domestic financial instruments to access immediate post-disaster financing.

8: Establishment of sub-national Emergency Operation Centers (EOC) can enhance effectiveness and efficiency of overall national emergency response.

Respondents in Samoa tend to agree that having a national NEOC has undoubtedly contributed to the overall efficiency and effectiveness of the emergency and response capabilities. However, having just a national center could be ineffective in terms of coordinating remote deployments on other islands like Savaii and the outer islands of Samoa.

For Samoa, two key experiences have confirmed the need for Samoa to consider the establishment of subnational EOCs outside of Upolu. The first experience was the COVID-19 pandemic which resulted in a country wide lock-down, where responders from Upolu faced significant logistical challenges in trying to reach Savaii to assess the environmental impact of an oil spill in the area. There were incidents where the personnel had to seek temporary accommodation given that there was no local accommodation available at the time. Participants shared that responding to this event proved to be an exhausting exercise for the relevant ministry and could have been avoided if there was appropriate EOC and relevant capacity available on Savaii itself.

The Tonga volcanic eruption which also affected some families in Savaii was the second incident that rendered support to this need. Given that the response and the assistance were all coordinated from the NEOC in Upolu, inter-island travel and arrangement of logistics for

⁸¹ Government of Samoa (2022) Disaster Risk Financing Policy 2022-2025, pp 1-28.

humanitarian assistance proved to be a challenge due to the national travel restrictions. Therefore, response and assistance to the affected communities were significantly delayed.

Thus, the COVID-19 pandemic has clearly brought about the need to re-think how Samoa pre-positions its response mechanisms to ensure that assistance to affected areas is not delayed. Decentralization of EOCs is also a useful risk mitigation strategy as it ensures that the emergency and disaster response capabilities of Samoa does not grind to a halt in case the main NEOC in Upolu is severely hit by a disaster.

Tonga

9: The procurement process of donors whilst challenging, also provides opportunities for local building contractors to enhance their capacities in meeting internationally recognized best building practices, but these capacities need to be sustained in order for gains in infrastructure resilience standards to be maintained.

Tongan stakeholders, particularly the Ministry of Education which is primarily involved with the retrofitting and the rebuilding of schools damaged by TC Gita, revealed that a key challenge that they face in carrying these activities was securing local contractors as well as materials that comply with the procurement processes of the World Bank. Given the lack of accredited local contractors and materials in Tonga, delays in construction were experienced – a problem that was exacerbated by the COVID-19 pandemic.

The experience of the PMU revealed that local contractors in Tonga were challenged in their understanding of the World Bank’s procurement system given their lack of experience with the requirements. The PMU indicated that they faced a lot of difficulties at the evaluation phase as most of the bidding documents and the evidence required to support bidder’s documents were incomplete and insufficient. This also included the understanding of contractual terms, construction documents, the construction process and work program, compliance and monitoring of quality assurance (QA), inspection, supervision and certifications. Complicating the process was the political pressure from government for the project to expedite the process given the significant time delay and the concerns that were being raised that the emphasis on ‘strengthening infrastructure’ seems to be ‘requirement centric’ rather than ‘people centric’ as students were still attending classes in tents.

The reconstruction of twenty-five (25) schools has been completed through the support of the PREP. A concern that now arises however is the maintenance and the management of these assets in the future. This could be a challenge moving forward given that most of the materials were externally sourced and that the construction adhered to a high building standard that requires certain capacity and skills to effectively maintain the assets. Given the current supply chain challenges caused by the COVID-19 and the Ukraine war, sourcing external materials will be costly and delayed. Additionally, Tonga is facing an exodus of qualified construction personnel as most are opting to go overseas for better wages by joining initiatives such as the Seasonal Work Schemes in Australia and New Zealand. This lack of human resources could hinder the effectiveness of Tonga’s construction industry to sustain the gains earned from working with the World Bank.

Efforts have been made by the PREP project to ensure sustainability of these investments through the development of a maintenance manual to be given to the management bodies of

schools. Additionally, the Ministry of Education is planning to set up a special team to look specifically at the maintenance of these assets given the significant investments that have been made. Moreover, training on how to carry out basic maintenance of these assets is being planned and according to the Ministry of Education will not be limited only to the teachers but will also include members of the school parent and teachers' associations (PTA).

The COVID-19 pandemic despite all its negative impacts, also generated some positive developments, in this case, it forced the PREP project to look 'local' and in a way also forced local contractors to 'step-up' to the challenge in engaging the World Bank procurement requirements. This was evident given that local contractors were given contracts to undertake the construction and the retrofitting of schools in line with the requirements. The situation in Tonga also prompted the need to adequately capacitate the local construction industry in the requirements of donors such as the World Bank and the ADB through the provision of procurement and other training. The onus is also on the government to incentivize the local construction industry so that the momentum gained from these experiences are maintained and that Tonga can build an 'ecosystem of local contractors' that are 'World Bank-certified' to ensure local contractors do not go back to business as usual after those engagements.

10: The complexity of risks that are now emerging requires PICs to not only plan for all possible scenarios but also strengthen their approach to traditional knowledge in terms of preparing for as well as responding to events.

A key issue that emerged from the discussion with the disaster agencies in Tonga was that their EWS was not equipped to accurately predict impacts of the 2022 Hunga Tonga Hunga Ha'apai volcanic eruption and resulting tsunami— an event that has been described by experts as 1 in a 1000-year event⁸². Experience shared by those interviewed indicated the significance of the event was just too big and too extreme to even rationalize in the normal course of planning. The possibility of a tsunami caused by a volcano was never anticipated in the normal national risk assessments, thus Tonga did not receive an insurance payout from PCRIC because this was never factored into their current parametric insurance policy. However, the fact that the event occurred is indicative on the need for risk assessments to account for possible disaster events even if their probability of occurring is low. Financially, Tonga was caught unprepared for a disaster of the magnitude of the 2022 volcanic eruption and tsunami, and it is estimated that recovery will cost up to US\$240 million for the next four (4) years⁸³.

It is critical to note that the inability of such events to be predicted is primarily driven by inability of current systems to accurately predict activities of such nature. Current models for generating tsunami early warnings are based on earthquake events, whereas the tsunami in Tonga was triggered by a volcanic eruption. The volcanic mechanism which created the tsunami is complex and very different from an earthquake⁸⁴. As a consequence of this event, modelers in the region as well as those engaged internationally are working on new models to incorporate these complex processes – science in progress.⁸⁵

⁸² SPC (2022) A Once in a 1000 year eruption.

⁸³ Government of Tonga (2022) Prime Minister Confirms Recovery and Resilience Building Plan Needs TOP\$565.8 million <https://www.gov.to/press-release/prime-minister-confirms-recovery-and-resilience-building-plan-needs-top565-8-million>

⁸⁴ SPC (2022) A Once in a 1000 year eruption.

⁸⁵ *ibid*

Booming noise, ocean behaviour and other natural signs that transpired prior to the eruption and the tsunami are stark reminders of the need to pay attention to these natural signals. Strengthening of traditional knowledge particularly on early warning signs of such events is essential. It is critical that Tonga harness local and traditional knowledge and factor these in their formal MHEWS public training, outreach, awareness programs and even in the curriculum in schools. Information passed down through generations and within communities can strengthen the overall effectiveness of a MHEWS⁸⁶.

“...*traditional knowledge is the backup when everything else fails...*” This was the reflection of a stakeholder from the Tonga Meteorological Service when he was reflecting on the experience of the volcano and tsunami. Remote communities in Tonga particularly those that live in other outer islands that were hit by the tsunami and severely affected by ash fall were literally cut-off from contact over period of days before humanitarian assistance could reach them. Despite their isolation and the destruction around them, these communities still managed to survive and persevere as a cohesive group. Their intimate knowledge of the land and the sea, played the critical role in their survival, signifying again the importance of strengthening traditional and local knowledge in building resilience to disasters.

11: Disaster Risk Financing (DRF) solutions are only as reliable as the risk models that support them, and the latter are only as good as the data and the capacity required to develop them.

Tonga faces significant challenges when it comes to having adequate data to build and validate risk assessment models because gathering the necessary data sets requires significant investments in terms of finance, human capacity and technology. Whilst the risk models for Tonga’s DRF Strategy was locally sourced, there was no or limited local capacity to assess/analyse the data, thus they were heavily dependent on the World Bank technical resources to do the modeling on their behalf. Tonga with the support of SPC is currently collating the exposure data of public and private infrastructure assets in all the islands in Tonga.

Whilst the risks models for the DRF Strategy provides an initial understanding of the DRF solutions options that are available to Tonga, there is increasing appetite from the Ministries particularly the MoF, for a range of scenarios to be developed (instead of the two to three scenarios in the DRF Strategy) so that they can have a better understanding of the nature of investments that might be required for adequate financial protection. The recent experience from the Hunga Tonga-Hunga Ha’apai volcanic eruption and tsunami has really brought home the message for better exposure data and more importantly the capacity to analyze data from a range of potential disaster events as it strongly influences the decisions on financial solutions and options that Tonga needs to pursue.

Akin to other developing countries, critical disaster related data including exposure data are often scattered across ministries and other organizations in Tonga. Given the lack of adequate knowledge management systems and storage technologies across the government ministries in Tonga, concerns have also been raised that most of these crucial data are kept in vulnerable formats. In Tonga, paper-based formats are still the commonly used way of storing information in ministries.

⁸⁶ UNDRR (2022) Inclusive and Accessible Multi-Hazard Early Warning Systems: Learning from women-led early warning systems in the Pacific, pp 1-29.

Data sharing across government agencies is also not a common practice. Within the government, sharing information amongst different ministries is challenging and they tend to be even more reluctant to share with the external organisations for the purpose of developing risk assessment models. Data is still being seen as a source of power that is not relinquished lightly and often linked with security concerns. There have also been experiences when ministries share data, they often do not see any tangible ‘reward’ flowing back to them for their effort as the custodian of the data.

It is therefore important to highlight the objectives and nature of risk assessments throughout relevant government agencies in order to increase awareness and appreciation on the relevance of complete and accurate information and encourage cooperation from those who are responsible for data. Agencies must be aware of the benefits of sharing their information as a means to build sound financial risk management strategies that may improve their own risk transfer options and capacity while enhancing the benefits to be derived from such data sharing efforts.

12: The Ministry of Finance (MoF) is best placed to lead and drive the national DRF efforts of countries.

In many countries, disaster risk management has traditionally been seen as an agenda that belongs to specialized agencies such as the national disaster agency, Defense agencies or the Ministry of Environment. However, in the case of Tonga, the MoF plays a central role in advancing the country’s DRM agenda using DRF as the entry point of engagement. The rationale behind involving MoF to drive the DRF agenda is because central to it is the Public Finance Management (PFM) system which the MoF is responsible for. Through the PFM system DRF can as a consequence inform development that is resilient to disaster and climate risks through better integration of risk considerations in public investments.

Given Tonga’s vulnerability to disasters, it is a given that risk financing cuts across different government agendas and thus for DRF (and other modes of development-related financing for that matter) to be successful, it needs to be anchored in the MoF. Tonga like other countries that have an advanced approach to DRF have adopted an integrated approach to risk management and this mainly involves the establishment of specialized DRF units such as the Aid Management & Resilient Development Division (AMRDD) within the MoF. This is a significant element of governance reform and was supported by the PREP. The AMRDD has been specifically tasked with the identification, disclosure and management of fiscal risks associated with disasters. The AMRDD is currently leading the DRF agenda for Tonga in partnership with agencies such as MEIDECC, Ministry of Agriculture and Ministry of Internal Affairs as well as the private sector and the international/donor community.

By anchoring financial protection within the MoF, Tonga hopes to advance a comprehensive approach to its fiscal and debt risk management and more importantly allow the government to build on existing capacity in managing other liabilities including debt.

Future Outlook

The risk landscape for the Pacific region is constantly shifting. The COVID-19 pandemic impact and natural hazards which are overlaid by the persistent reality of the climate crisis

has consequently reshaped and expanded the scope of shocks that the Pacific is and will be at risk to in the future. This will also mean that the risks faced by the region will become more complex and interconnected. Recent experiences of how the Pacific responded to disasters indicate that most PICs still need further support to better their approach in addressing multiple overlapping crises. Consequently, the reality of the fast-evolving landscape of the region, necessitates a change to a more systematic and systemic approach as an event-by-event approach to disaster management is no longer viable.

Climate Change remains the biggest threat to PICs achieving their development aspirations. Climate change is however, not only a hazard in itself but also compounds and cascades the impacts of existing risks, particularly the biological, social and economic risks, which in turn affects the underlying drivers of poverty and inequality in a vicious cycle. The recent IPCC reports have forecasted that not only will the magnitude and the frequency of climate-induced disasters for the Pacific increase, but the associated costs in both building the resilience and responding to these disasters will be significant. The Pacific therefore needs to aggressively engage the UNFCCC COP process and urge developed country Parties to accelerate concrete and ambitious mitigation efforts and financial support globally. Pacific Island Countries must elevate and meaningfully implement the vision of the FRDP, which calls for a multistakeholder and integrated approach to climate change and disaster risk management in their national systems.

The COVID-19 pandemic and the spate of climate induced disasters that have struck the region within the past decade should be a wake-up call and a reality check on the need to relook at how we approach resilient development in the region given that multiple hazards that we will now need to respond to. Thus, to better respond to the fast-changing risk environment, the Pacific will need to:

- Strengthen subregional and regional cooperation given that risks are becoming more transboundary in scope;
- Strengthen national and local planning capabilities particularly on how they account for interactions, interlinkages as well as the relationship of hazards. The nature of the risk environment that we now face calls for more comprehensive risk assessments and targeted approach which in most parts is contingent upon robust of understanding of the composition of risks and the magnitude of their impacts to people and infrastructure;
- Institute context appropriate governance reforms such as through relevant policy, legislation and institutional arrangements to provide a more robust and stable foundation for enhancing resilience building;
- Leverage the potential of technologies as a critical tool in an effective DRM approach and to increase investments in Pacific context appropriate information technology (IT) and its infrastructure. As evident in during the COVID-19 pandemic, technologies such as social media played a critical role in not only disseminating information but also collection of data for decision making.
- Strengthen investments in adaptive social protection which are not only shock-responsive but shock-prepared given that the most vulnerable people in communities will be the most impacted during disasters;

- Explore and pilot innovative and targeted financial modalities such as the CERC to supplement their domestic financial budgets and closely work with the private sector. The reality of the limited fiscal space as well as the projected costs of disasters for the Pacific necessitate that PICs need to diversify their funding sources including, where possible, leveraging finances from the private sector. For donors this could also mean ring-fencing part of their funding as contingencies for disasters.



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