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PACIFIC ISLANDS

Republic of the Marshall Islands, Kingdom of Tonga,
and Republic of Vanuatu

Sustainability and Resilience in Pacific Island Health Systems

Collin Tukuitonga, Roannie Ng Shiu, Siale Akauola, Emi Chutaró, and Caroline Fried



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Authors

Collin Tukuitonga, Senior Fellow, Center for Asia-Pacific Resilience and Innovation; Health and Medical Sciences Faculty, University of Auckland

Roannie Ng Shiu, Health and Medical Sciences Faculty, University of Auckland

Siale Akauola, former Chief Executive Officer, Ministry of Health, Kingdom of Tonga

Emi Chutaro, Executive Director, Pacific Island Health Officers Association, Honolulu

Caroline Fried, Center for Asia-Pacific Resilience and Innovation

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Center for Asia-Pacific Resilience and Innovation (CAPRI)

2/F, No. 2, Section 3, Chongqing South Road
NPO Hub Taipei, Taipei 100056, Taiwan

(T) (+886) 2 23036608

(E) info@caprifoundation.org

(W) <https://caprifoundation.org>

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Interviewed experts

| | |
|-------------------------------|--|
| Paula Vivili | Deputy Director-General, Science and Capability, The Pacific Community |
| Berlin Kafoa | Director, Public Health Division, The Pacific Community |
| Sunia Soakai | Deputy Director, Public Health Division, The Pacific Community |
| Mia Rimon | Former Regional Director, Melanesia, The Pacific Community |
| Si Thu Win Tin | Team Leader, Non-Communicable Diseases Prevention and Control Programme, Public Health Division, The Pacific Community |
| Reynold Ofanoa | Chief Executive Officer, Ministry of Health, Kingdom of Tonga |
| Francyne Wase-Jacklick | Secretary for Health, Ministry of Health and Human Services, Republic of the Marshall Islands |

Contents



| | |
|--|-----------|
| Abbreviations | 1 |
| Executive summary | 2 |
| Overview of the Pacific Islands' health systems by domain | 3 |
| Introduction | 8 |
| Introduction | 9 |
| Background The Pacific Island Countries and Territories | 11 |
| Political status | 12 |
| Economies | 13 |
| Society | 14 |
| Country profiles: RMI, Tonga, and Vanuatu | 15 |
| 1. Domain 1 Population health | 17 |
| 1.1 Key indicators of population health | 18 |
| 1.2 Burden of NCDs | 19 |
| 1.3 Other health concerns | 20 |
| 1.4 Impact of COVID-19 | 20 |
| 1.5 Republic of Marshall Islands | 22 |
| 1.6 Tonga | 22 |
| 1.7 Vanuatu | 23 |
| 1.8 Recommendations | 24 |
| CASE STUDY 1: The Yanuca (Healthy Islands) Declaration | 25 |
| CASE STUDY 2: Pacific NCD Roadmap | 27 |
| 2. Domain 2 Environmental sustainability | 36 |
| 2.1 Threats of climate change | 37 |
| 2.2 Impact of climate change on health and livelihoods | 37 |
| 2.3 Climate crisis in RMI, Tonga, and Vanuatu | 38 |
| 2.4 Policy efforts to address climate change in the Pacific | 39 |
| 2.5 Community efforts to adapt to climate change | 40 |
| 2.6 Recommendations | 40 |

| | |
|---|-----------|
| 3. Domain 3 Workforce | 41 |
| 3.1 Workforce shortages in PICTs | 42 |
| 3.2 Workforce challenges in RMI, Tonga, and Vanuatu | 42 |
| 3.3 Recommendations | 43 |
| 4. Domain 4 Medicine and technology | 45 |
| 4.1 Infrastructure | 46 |
| 4.2 Digital technology | 46 |
| 4.3 Medicines | 46 |
| 4.4 Data and health information systems | 47 |
| 4.5 Recommendations | 48 |
| 5. Domain 5 Service delivery | 50 |
| 5.1 Access and cost of care | 51 |
| 5.2 Provision of care | 51 |
| 5.3 Recommendation | 52 |
| 6. Domain 6 Financing | 53 |
| 6.1 Spending on healthcare | 54 |
| 6.2 Sources of healthcare funds | 54 |
| 6.3 Allocation of healthcare funds | 55 |
| 6.4 Recommendations | 55 |
| 7. Domain 7 Governance | 57 |
| 7.1 Leadership and governance structures | 58 |
| 7.2 Governance priorities in healthcare delivery | 58 |
| 7.3 Health planning and implementation | 59 |
| 7.4 Governance in a health crisis | 60 |
| 7.5 Recommendations | 60 |
| 8. Reflections and conclusions | 62 |
| Critical gaps in Pacific health systems | 63 |
| What's next: building resilience from local to global | 64 |
| 9. References | 65 |

Abbreviations



| | |
|--------------|---|
| CAPRI | Center for Asia-Pacific Resilience and Innovation |
| COFA | Compact of Free Association |
| GDP | Gross domestic product |
| GHG | Greenhouse gas |
| HCF | Healthcare Fund |
| HCW | Healthcare worker |
| HIS | Health information systems |
| IMR | Infant mortality rate |
| MANA | Monitoring Alliance on NCD Action |
| MOHMS | Ministry of Health and Medical Services of Fiji |
| NCD | Noncommunicable disease |
| ODA | Official development assistance |
| PBTRC | Pacific Basin Telehealth Resource Centre |
| PHP-C | Pacific Humanitarian Pathway on COVID-19 |
| PHSSR | Partnership for Health System Sustainability and Resilience |
| PICTs | Pacific Islands Countries and Territories |
| PIF | Pacific Islands Forum |
| PMA | Pasifika Medical Associate |
| PNG | Papua New Guinea |
| RMI | Republic of Marshall Islands |
| SIDS | Small Islands Developing States |
| SPC | Pacific Community (formerly South Pacific Commission) |
| STEPS | STEPwise approach to NCD risk factor surveillance |
| TB | Tuberculosis |
| TEH | Total expenditure on health |
| TFR | Total fertility rate |
| UHC | Universal health coverage |
| UN | United Nations |
| U5MR | Under-5 mortality rate |
| WHO | World Health Organization |

Executive summary



With small population groups scattered across vast distances, the Pacific Islands Countries and Territories (PICTs) face several unique and interconnected developmental challenges, including unreliable and expensive transport, small and fragile economies, and vulnerability to climate change and natural disasters, as well as resource limitations and human resource constraints. These factors hinder sustainability and resilience not only in health but also in economic development and climate change response. Despite these obstacles, most islands have been working toward achieving universal health coverage (UHC), focusing appropriately on primary healthcare and public health while also engaging in strong regional collaboration to meet international standards for population health and health promotion.

As part of the Partnership for Health System Sustainability and Resilience (PHSSR), the present report contributes to an international research effort to enhance global health and facilitate regional dialogue by using a research framework developed by the London School of Economics and further adapted for the Asia-Pacific region by the Center for Asia-Pacific Resilience and Innovation (CAPRI), the Asia-Pacific Hub of PHSSR. This report provides an overview of health systems in the Pacific region, focusing on the three countries: the Republic of the Marshall Islands (RMI), the Kingdom of Tonga, and the Republic of Vanuatu. Across seven domains of population health, environmental sustainability, workforce, medicines and technology, service delivery, financing, and governance, this report highlights the strengths and weaknesses of health systems in PICTs and proposes policy recommendations at the national, regional, and global levels.

Overview of the Pacific Islands' health systems by domain

Domain 1: Population health

Population health has improved in recent years among PICTs, with declining death rates and an average life expectancy at birth of 69 years in 2021. However, life expectancy at birth in some island nations has plateaued or declined due to noncommunicable diseases (NCDs). Despite a median population age of 20–30 years, the burden of NCDs remains significant, accounting for three-quarters of premature and preventable deaths. Rates of obesity and people who are overweight in PICTs are among the world's highest. Although there is notable regional commitment to NCD prevention and control, such as the "Healthy Islands" vision and the Pacific NCD Roadmap, as well as local initiatives, such as Tonga's taxes on unhealthy foods, more resources are required to fully implement national and regional plans to achieve global and regional NCD targets. Additionally, other health challenges, such as injuries and infectious diseases, have resulted in a triple burden of disease affecting population health. Fortunately, most PICTs had low case and mortality rates during the COVID-19 pandemic, despite substantial impacts of the pandemic on routine healthcare delivery.

Domain 2: Environmental sustainability

The climate crisis is the most important threat to the lives and livelihoods of people in the Pacific Islands, despite their minimal contribution to global greenhouse gas emissions. These areas face severe weather events, water scarcity, rising sea levels, increasing ocean temperatures, and ocean acidification, all of which have adverse impacts on both livelihoods and health. Reduced fishing and agricultural yields, for example, have led to increased reliance on imported and highly processed foods, contributing to the rise in NCDs. A rise in vector-borne diseases and pollution also threatens health, while persistent natural disasters and the threat of displacement take a toll on mental health in island communities. While Pacific leaders have consistently advocated for more action from major polluters and recognition of losses and damage to their communities, proactive policy measures, such as Fiji's health plan, are still required in more PICTs.

Domain 3: Health system workforce

Ensuring the appropriate number of trained healthcare workers (HCWs) to sustainably meet current and future healthcare needs is a critical challenge in the Pacific region. These shortages are driven by a mix of “push” factors (e.g., heavy workloads, low compensation, lack of professional development opportunities, and challenging working conditions in the Pacific Islands) and “pull” factors (e.g., higher remuneration, better working conditions, and greater opportunities for advancement abroad). HCW shortages disproportionately affect rural and outer island communities. Consequently, residents of PICTs often rely on healthcare by visiting medical teams from Pacific Rim countries or traveling to these countries to access healthcare. Although some strategies aimed at retaining HCWs, such as bonding students to government services, have shown limited success, other promising initiatives, such as deploying various types of HCWs in primary healthcare settings, are beginning to emerge.

Domain 4: Medicines and technology

Health infrastructure in many PICTs is dated and fragile, often lacking the necessary equipment for comprehensive care, leading to reliance on development partners for funding and equipment donations. Additionally, limited budgets for pharmaceuticals in these regions result in inconsistent medication supplies, prompting patients to seek medications from the internet, family members abroad, or donations from development partners. While telehealth holds promise for healthcare accessibility, it is limited by poor internet connectivity and a lack of digital literacy. Although the establishment of the Pacific Health Information Network demonstrates a regional commitment to health information systems, most nations still lack well-functioning systems for data collection and management.

Domain 5: Health service delivery

RMI, Tonga, and Vanuatu are making strides toward achieving UHC by offering government-provisioned healthcare services to residents for free or with minimal copayments. However, delivering healthcare in the Pacific Islands presents unique challenges and high costs due to dispersed and isolated communities, and more effort is required to attain true UHC. Typically, healthcare systems in these nations are structured around primary health and public health services delivered through public healthcare centers, district or regional hospitals, and referral hospitals located in the capital cities, although a small private healthcare sector exists. Specialized services, such as for cancer, cardiology, and other surgical specialties, are inconsistently available on the islands and often rely on periodic visits by medical specialist teams from Pacific Rim nations. Residents with sufficient financial resources may also be referred for healthcare services in Pacific Rim countries.

Domain 6: Health system financing

Many PICTs allocate less than 5% of their GDP to healthcare, limiting their capacity to provide essential health services, especially in the case of Vanuatu. The exception is RMI, which allocated 13.01% of its GDP to health in 2020, one of the highest rates in the region. However, health outcomes in RMI remain comparable to those of other PICTs with lower budgets, necessitating a reassessment of healthcare expenditure. These nations rely heavily on official development assistance (ODA), foreign aid, and diaspora remittances, with limited internal revenue sources due to residents' reliance on subsistence activities for their livelihoods. Consequently, ensuring the long-term financial sustainability of healthcare systems is a critical concern, prompting the need to explore alternative healthcare funding models. Healthcare budgets prioritize curative and treatment services, with limited funding for services such as dental care and mental health.

Domain 7: Health system governance

Governments of PICTs play a dominant role in healthcare financing and delivery. Ministers of Health are supported by permanent heads of the health service, and additional governance arrangements exist at the village and community levels. Nonetheless, short political cycles, high turnover of political leaders, interministerial accountability gaps, and inadequate funding hinder the necessary support and stability for long-term healthcare commitments. Despite these challenges, PICTs are generally regarded to have managed the COVID-19 pandemic well due to strong political leadership and support from development partners.

Critical gaps in Pacific health systems

Although regional coordination and ODA have facilitated progress in the Pacific Islands, glaring gaps in Pacific health systems that span the seven domains impede advances in health outcomes. Governments, as the primary healthcare funders and providers, face constraints due to a low share of GDP allocated to health and limited financial resources. Consequently, many PICTs struggle to consistently deliver comprehensive care and maintain an adequate healthcare workforce, particularly in remote areas and outer islands. Moreover, the impact of the climate crisis has made the need to build resilient health systems more urgent. Ocean warming and acidification as well as shifting precipitation patterns are destabilizing fishery and agricultural systems. As a result, diets traditionally consisting of local seafood and crops are changing to include more imported, processed foods responsible for the increasing incidence of obesity, diabetes, and other NCDs that the health systems are ill equipped to respond to because funds are typically allocated to curative care.

Policy recommendations

Achieving sustainability and resilience among the Pacific Islands will depend on national, regional, and global commitments across health, economic, and ecological systems. The recommendations in this report (outlined in Table 1 below) are crucial steps toward addressing the interconnected challenges identified across the seven domains. Nationally, meeting NCD targets and accelerating UHC will involve significantly increased investments in health and a skilled workforce that can consistently deliver health services.

At the regional level, efforts to coordinate policies and advocate for the region should continue, focusing on talent circulation and accessibility to key medicines and technologies through regional and global partnerships. Collective action on climate change in the region should address mental health and well-being, especially among young people affected by high unemployment and uncertainty about the future due to climate change. This is also where global adherence to international targets to mitigate climate change will profoundly affect the Pacific Islands. Continued and consistent support from global partners across health, economic development, and environmental sustainability will be crucial for a resilient Pacific.

Table 1: Policy recommendations by domain

| DOMAIN 1 POPULATION HEALTH | |
|--|--|
| 1A | Continue working toward global and regional NCD targets |
| 1B | Adopt a socioecological model of health to address the Pacific “syndemic” |
| 1C | Enhance systems for disease surveillance and outbreak response |
| 1D | Review the impact of the COVID-19 pandemic on healthcare delivery to prepare for future outbreaks |
| DOMAIN 2 ENVIRONMENTAL SUSTAINABILITY | |
| 2A | Develop policy responses to address the health impacts of the climate crisis and secure environmental sustainability |
| 2B | Improve mental health services, especially for disorders arising from climate change, following a comprehensive national mental health survey, where needed. |
| DOMAIN 3 HEALTH SYSTEM WORKFORCE | |
| 3A | Consider a regional conference on measures to retain healthcare workers in the Pacific Region |
| 3B | Train and employ independent nurse practitioners and other HCWs to enhance primary care delivery |
| 3C | Build on the successes of the COVID-19 response and train more staff in disease surveillance and outbreak response |
| 3D | Consider a two-tier physician training system to optimize the skill sets of HCWs to better match the diverse needs of residents |
| 3E | Increase investments in healthcare workforce education and training |
| DOMAIN 4 MEDICINES AND TECHNOLOGY | |
| 4A | Update the physical healthcare infrastructure by incorporating sustainable practices |
| 4B | Increase investments in ensuring a stable supply of essential medicines, especially for NCDs |
| 4C | Execute a comprehensive upgrade of digital infrastructure in alignment with the priorities identified by the PHIN |
| 4D | Enhance data collection and reporting mechanisms to guide evidence-based decision-making |
| 4E | Explore and implement telehealth solutions to enhance healthcare delivery within and between islands |

Table 1 (continued): Policy recommendations by domain

DOMAIN 5 HEALTH SERVICE DELIVERY

- 5A Accelerate the implementation of UHC

DOMAIN 6 HEALTH SYSTEM FINANCING

- 6A Explore and evaluate alternative healthcare financing models, such as social insurance
- 6B Examine different approaches to allocate and utilize ODA for healthcare
- 6C Assess alternative internal sources of revenue, such as increased taxes on unhealthy consumer products
- 6D Engage in proactive negotiations on ODA and foreign aid contracts for improved sustainability
- 6E Conduct a comprehensive review of the current healthcare expenditure and financing model to identify inefficiencies and potential areas for optimization.

DOMAIN 7 HEALTH SYSTEM GOVERNANCE

- 7A Explore community engagement in collaborative governance platforms to better meet community health needs, leverage local resources, and garner community support for health system transformation
- 7B Train and recruit health policy advisers to enhance local expertise and foster informed decision-making

Introduction



Introduction

With small population groups scattered across vast distances, the Pacific Islands Countries and Territories (PICTs) face several unique and interconnected developmental challenges, including unreliable and expensive transport, small and fragile economies, and vulnerability to climate change and natural disasters, as well as resource limitations and human resource constraints. These challenges affect their health systems and compromise the consistent delivery of healthcare to their populations. Despite these obstacles, most islands have been making good progress toward achieving universal health coverage (UHC), focusing appropriately on primary healthcare and public health while also engaging in strong regional collaboration to meet international standards for population health and health promotion.

This report analyzes the resilience and sustainability of health systems in the Pacific Islands, focusing on three PICTs, one from each of the Pacific's ethnogeographic subregions: the Republic of the Marshall Islands (RMI) in Micronesia, the Kingdom of Tonga in Polynesia, and the Republic of Vanuatu in Melanesia. The situations in these three islands broadly reflect the region's interconnected political, socioeconomic, health, and environmental challenges.

As part of the global Partnership for Health System Sustainability and Resilience (PHSSR), this report broadly examines the health systems of the Pacific Islands by using a research framework and definitions of "health system sustainability" and "health system resilience" developed by the London School of Economics for PHSSR (Table 2). In this framework, PHSSR defines a "health system" according to the World Health Organization's *World Health Report 2000* as "all the activities whose primary purpose is to promote, restore or maintain health."¹

Table 2: Definitions of health system sustainability and resilience in the PHSSR framework

| | |
|-------------------------------------|--|
| Health system sustainability | A health system's ability to maintain and improve population health by continually delivering the key functions of providing services, generating resources, financing, and stewardship, incorporating principles of financial fairness, equity in access, responsiveness and efficiency of care, and doing so in an environmentally sustainable manner. |
| Health system resilience | A health system's ability to prepare for, absorb, adapt to, learn, transform, and recover from crises born of short-term shocks and accumulated everyday stresses in order to minimize their negative impact on population health and disruption caused to health services. |

About the lead author: Collin Fonotau Tukuitonga is Associate Dean Pacific, Faculty of Medical and Health Sciences Administration; Associate Professor, Population Health; and Director – University Research, Centre for Pacific and Global Health at the University of Auckland. He is also a senior fellow at the Center for Asia-Pacific Resilience and Innovation (CAPRI). He can be reached at collin.tukuitonga@auckland.ac.nz.

The PHSSR framework consists of seven domains, moving from the contextual and locally based to the key components of the health system and finally to the national landscape that shapes and finances health policy:

1. Population health
2. Environmental sustainability
3. Health system workforce
4. Medicines and technology
5. Health service delivery
6. Health system financing
7. Health system governance

This report draws from desk research and expert interviews to provide a regional overview of health systems in the Pacific Islands as well as policy recommendations to strengthen their sustainability and resilience through national, regional, and global efforts. Identifying reliable financing sources and reviewing current healthcare delivery options are urgent tasks for the region's health systems to adapt and thrive in the face of common economic and environmental challenges.

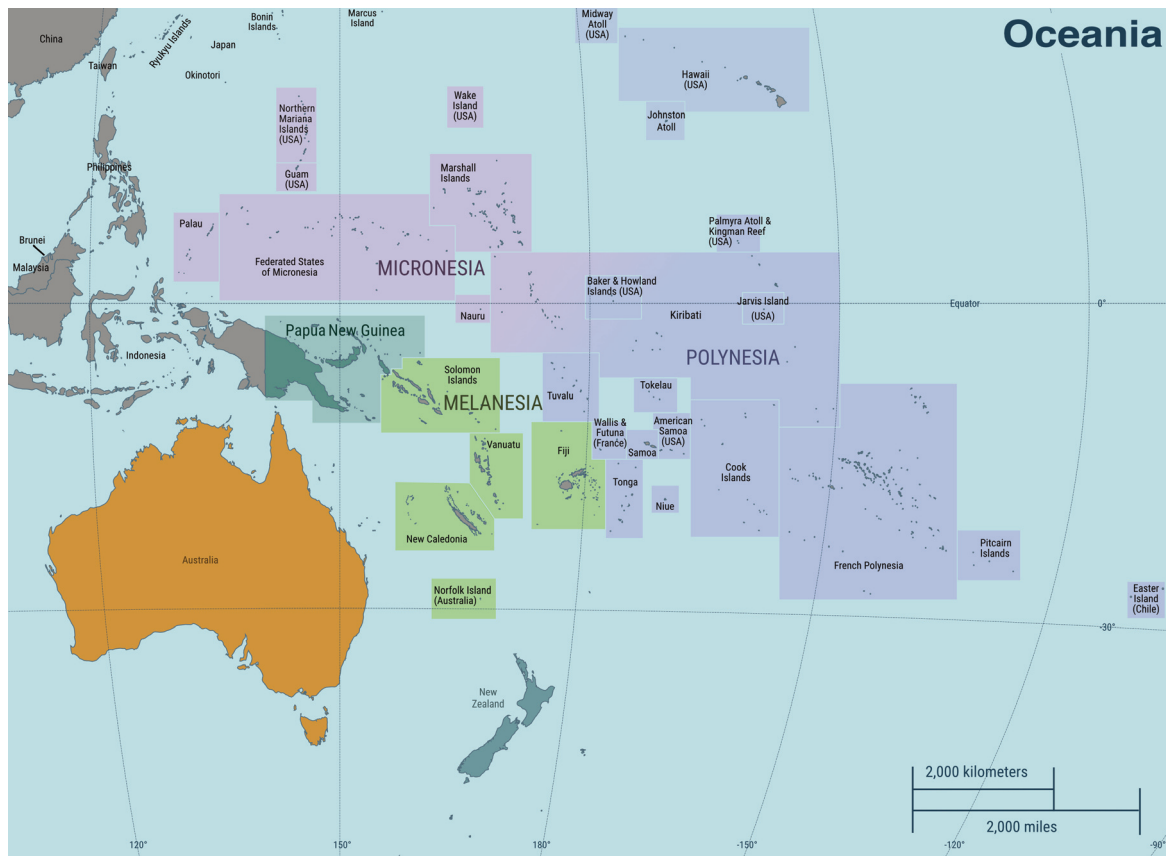
BACKGROUND

The Pacific Island Countries and Territories



The Pacific region is characterized by small islands scattered across the largest body of water on the planet – the Pacific Ocean – covering more than 165 million km². The region is home to approximately 13.5 million people across 20–30 Pacific Islands Countries and Territories (PICTs).¹ This region is further divided into three ethnogeographic subregions: Polynesia, Micronesia, and Melanesia (Figure 1). The subregions are important geopolitical entities in addition to regional organizations focused on the preservation of cultures and languages, economic development, and regional security.

Figure 1: Map of the Pacific Island Countries and Territories



Adapted from: "Oceania_regions_map.png (2987x2190)," Wikimedia, accessed October 1, 2023, https://upload.wikimedia.org/wikipedia/commons/2/2e/Oceania_regions_map.png.

The vast majority of the Pacific Islands population is found in Melanesia, with Papua New Guinea (PNG) with a population of at least 10.2 million people being the largest nation by far; however, population estimates vary because of data collection challenges. The least populated is Pitcairn Island in Polynesia, with only about 50 people.² Fourteen of the PICTs are considered Small Island Developing States (SIDS) by the United Nations (UN).³

Political status

As the name suggests, some PICTs are sovereign states, while others remain connected to the countries that had colonized them. The realm of New Zealand includes the Cook Islands and Niue, which are self-governing in free association with New Zealand. Tokelau remains a territory of New

¹ The exact number of PICTs can vary based on the definition and classification used, but there are generally around 20 to 30 countries and territories in the Pacific region.

Zealand. Several PICTs have a similar relationship with the US through Compacts of Free Association (COFAs), as is the case for RMI, the Federated States of Micronesia, and Palau, or as US territories, such as the Commonwealth of the Northern Mariana Islands, Guam, and American Samoa. New Caledonia, French Polynesia, and Wallis and Futuna are overseas territories of France, and Pitcairn Island is the sole British overseas territory in the Pacific.

The independent island nations are typically headed by a president or prime minister and governed by a parliament. Most of these nations are politically stable, although parliamentary elections generate increased public interest and competition. Women remain underrepresented in the Pacific parliaments (<7%).⁴

All PICTs belong to one or several regional organizations that address issues of shared interest. The Pacific Islands Forum (PIF) is the premier political body in the region, involved in efforts such as regional peacekeeping and trade bloc formation. Several related “technical” agencies provide support and advice, including the Forum Fisheries Agency, which manages tuna fisheries in the region. The Pacific Community, formerly the South Pacific Commission (SPC), established in 1947, is the largest and oldest of these technical agencies and supports sustainable development. Other regional organizations provide financial support and technical advice, including on healthcare. All independent island nations are also members of the UN and its specialized agencies. Some nonindependent islands, such as New Caledonia (France) and American Samoa (US), are also members of select UN agencies, such as the World Health Organization (WHO). Membership in regional and international organizations has helped PICTs promote issues of concern, such as the impact of the climate crisis, at the global level.

Global and regional organizations outside of the Pacific region also contribute significantly to the funding and delivery of services in the Pacific. Several PICTs are members of the World Bank, and many are members of the Asian Development Bank. Some Pacific SIDS also receive significant contributions from development partners for health; for instance, Australia’s Health Sector Support Program is a nine-year initiative of AUD 143 million (US\$ 91 million) to support the Solomon Islands government in delivering health services across the country.⁵

Economies

The economies of PICTs are small, with a narrow activity base and limited access to capital. Tourism and tuna are the main sources of revenue in the region, although PNG is well endowed with minerals, oil, and gas. Individual PICTs also have niche markets, such as Tongan squash exports to Japan. Pacific economies are constrained by the high cost of trade and distance from overseas markets. Air travel within the region is expensive and irregular. While shipping has improved for most PICTs, concerns remain about the safety of domestic shipping, which is a lifeline for families who live in capital towns and those living on more remote islands.

The large proportion of young people relative to the overall population has important implications for all Pacific societies and governments. Employment opportunities are scarce, with youth unemployment rates being as high as 62% in RMI, primarily due to the lack of opportunities in the private sector.⁶ Most people in the region are subsistence farmers and fishers, and those with regular employment typically work in the public service.

Official development assistance (ODA) plays an increasingly vital role in supporting development in the Pacific, especially in infrastructure, private and business sectors, and gender equity, including efforts to eliminate violence toward women and girls. As local budgets become stretched, support for health, education, and the justice sector constitute a large share of ODA available to the Pacific Islands. From a global perspective, PICTs receive the most ODA per capita in the world, receiving a total of over US\$ 3 billion in 2020, with most contributions coming from Australia, New Zealand, and the US.⁷ ODA amounts for the three case countries studied here plus PNG and Fiji, the two largest Pacific nations, are displayed in Table 3.

Table 3: Official development assistance (ODA) spent by PICTs in 2020

| Country | ODA spent in 2020 (in USD, millions) |
|------------------------------|--------------------------------------|
| Papua New Guinea | 1,320 |
| Fiji | 207 |
| Republic of Marshall Islands | 173 |
| Tonga | 159 |
| Vanuatu | 161 |

Source: "Pacific Aid Map", Lowy Institute, accessed November 6, 2023, <https://pacificaidmap.lowyinstitute.org>.

Several Pacific Island nations have a large diaspora that exceeds the number of residents on the islands. Samoa, Tonga, Niue, Cook Islands, and Tokelau all report more of their people living in Australia, New Zealand, and the US than in the home islands. This results in a high rate of remittances sent back to families on the islands. In 2022, the World Bank estimated that Pacific diaspora remittances exceeded US\$ 1 billion.⁸ In 2021, remittances to Tonga exceeded ODA and foreign direct investment combined, totaling more than US\$ 220 million. The average remittance contribution to gross domestic product (GDP) for Tonga between 1975 and 2021 was 24.64% (of GDP), with a minimum of 12.22% in 1981 and a maximum of 45.5% in 2021. In 2022, remittances to RMI and Vanuatu totaled US\$ 30 million and US\$ 75 million, respectively.⁹

Society

In the Pacific region, the status of women is marked by persistent challenges. One of the most alarming issues is the prevalence of violence against women, with Fiji reporting over 60% of women experiencing physical violence, and the Solomon Islands having the highest reports of sexual violence at 55%.¹⁰ Additionally, women's representation in parliament remains exceptionally low and economic opportunities for women are limited, with men outnumbering women by 2:1 in formal employment. Some progress has been made following the adoption of the Gender Equality Declaration by the Pacific Forum Secretariat in 2012.¹¹

Literacy is also a significant concern in the Pacific region. According to data from the 2021 Pacific Island Literacy and Numeracy Assessment, only 43% of year four students met the minimum expected reading performance level.¹² The problem starts at a young age: a 2013 World Bank study conducted in three Pacific countries revealed that parents often did not prioritize early childhood education and failed to recognize their role in providing cognitive stimulation.¹³ However, PICTs are actively taking measures to address this issue. For instance, through the Pacific Early Age Readiness and Learning program, Tonga and Tuvalu have used community play-based activities, such as playgroups, aimed at enhancing school readiness.¹⁴

Country profiles: RMI, Tonga, and Vanuatu

This report provides an overview of the sustainability and resilience of health systems in the Pacific region, with a particular focus on three PICTs, one from each of the three subregions: RMI in Micronesia, Tonga in Polynesia, and Vanuatu in Melanesia.

Republic of the Marshall Islands

RMI has a population of 60,397 (2023 estimate) scattered across 5 islands and 29 coral atolls, with most people living on the Majuro and Ebye atolls. RMI's GDP per capita is US\$ 4,797 (2022), which is in the mid-range for Pacific SIDS.¹⁵

With few natural resources, RMI's main economic activity is subsistence farming on small family-owned plots of land, with coconuts and breadfruit being the main commercial crops. Handicrafts, tuna processing, and copra (dried coconut flesh used in coconut oil production) form the country's main industries.¹⁶ Because of favorable tax and operational policies, RMI also has one of the top three shipping registers in the world and the largest fleet of oil tankers.¹⁷

RMI also has a constitutional government with a parliamentary system in which the unicameral legislative body (Nitijela) votes for the president, who is the head of state and of government. Members of the Nitijela are elected by popular vote. On the basis of the COFA with the US, the US provides economic and military assistance to RMI in exchange for exclusive rights to conduct military operations in the country.¹⁸

Kingdom of Tonga

The Kingdom of Tonga has a population of approximately 107,773 (2023 estimate), spread across 36 of the 170 islands. Its GDP per capita was US\$ 4,952 (2021).¹⁹ Although poverty is not considered a problem in Tonga,²⁰ Tonga is very vulnerable to external economic shocks and natural disasters that threaten lives, livelihoods, services, and infrastructure. It is regularly listed in the top five most vulnerable countries in the World Risk Report.²¹

The Tongan diaspora is among the world's most active contributors to the country. As mentioned, remittances were approximately US\$ 220 million in 2021, equivalent to 44% of the GDP, and exceeded the combined value of ODA and foreign direct investment. Remittances are used mainly for family and community events and to fund offshore healthcare for those who can afford the services. Outside of these remittances, the Tongan economy is largely dependent on agriculture, and to a smaller extent, on tourism and fishing.²²

The Tongan government changed from an executive monarchy to a constitutional monarchy with a parliamentary democracy in 2010, the only such constitutional monarchy in the Pacific region. Since then, there has been considerable progress toward transitioning to a fully functioning democracy. The king retains important powers, including the authority to veto legislation, dissolve the parliament, and appoint judicial officials. The unicameral legislative assembly (Fale Alea) consists of 17 members who are elected by popular vote, 9 noble members elected by their peers, and up to 4 additional members whom the Prime Minister may appoint to the Cabinet from outside the parliament. While civil liberties are generally respected, ongoing concerns exist with land ownership laws that discriminate against women.²³

Republic of Vanuatu

Vanuatu has a population of approximately 334,506 (2023 estimate) across 65 of the total 80 islands in the archipelago and an estimated GDP per capita of US\$ 3,098 (2020),²⁴ the lowest among the three countries profiled in this report and markedly lower than the global average of US\$ 12,648.²⁵ Vanuatu had 15.9% of the population living below the national poverty line and an

unemployment rate of 4% in 2020.²⁶ As the private sector is small, most residents are engaged in subsistence farming or employed by the government. Native Vanuatuan people (ni-Vanuatu) in rural areas face difficulties in earning cash income due to social and cultural factors as well as economic factors such as low agricultural productivity, isolation from markets, and poor infrastructure.²⁷ Persistent problems include domestic violence and societal discrimination against women.²⁸

Vanuatu is a parliamentary republic with a nonexecutive presidency, such that the president's role is mostly ceremonial as the head of state. Executive power is instead held by the Prime Minister, who is the head of government, with parliamentary members elected by popular vote.²⁹ Frequent changes in political leadership from the late 1990s and early 2000s have now largely resolved.³⁰

1. DOMAIN 1
**Population
health**



1.1 Key indicators of population health

Most Pacific Islanders have good health by global standards, although significant inequities exist within and between islands. In general, the quality of life continues to improve, although NCDs are threatening the progress made in recent years. Population health data for 17 PICTs are presented in Table 4.

Table 4: Selected health indicators for Pacific Islands

| Country/ territory | Population (2023 est) | Crude birth rate/1,000 (2022) | Crude death rate/1,000 (2022) | Median age (years) (2022) | Total fertility rate (2022) | Infant mortality rate/1,000 live births (2022) | Life expectancy at birth (male) (2021) | Life expectancy at birth (female) (2021) |
|-----------------------|--------------------------|-------------------------------------|-------------------------------------|---------------------------------|--------------------------------------|--|--|--|
| MELANESIA | 12,522,916 | | | | | | | |
| Fiji | 924,610 | 19.1 | 8.2 | 27.9 | 2.7 | 18.6 | 65.4 | 68.8 |
| New Caledonia | 291,500 | 13.7 | 6.0 | 33.9 | 2.0 | 10.4 | 78.1 | 80.8 |
| PNG | 10,240,000 | 25.5 ^a | 6.5 | 22.4 | 3.4 | 36.6 | 63.0 | 68.4 |
| Solomons | 732,300 | 29.3 | 4.9 | 19.5 | 4.2 | 14.2 | 68.9 | 72.0 |
| Vanuatu | 334,506 | 29.4 | 5.3 | 19.6 | 3.8 | 19.1 | 68.4 | 73.0 |
| MICRONESIA | 338,625 | | | | | | | |
| Kiribati | 132,400 | 25.8 | 6.2 | 22.2 | 3.3 | 38.3 ^a | 65.5 | 69.1 |
| Nauru | 12,774 | 27.6 | 6.2 | 20.1 | 3.7 | 23.2 ^a | 60.0 | 67.0 |
| Palau | 18,354 | 13.4 | 13.4 | 35.8 | 2.3 | 15.1 ^a | 64.8 | 71.2 |
| FSM | 114,700 | 20.7 | 6.6 | 24.8 | 2.8 | 21.8 | 67.1 | 74.6 |
| RMI | 60,397 | 18.5 | 4.3 | 25.5 | 2.7 | 25.5 | 63.0 | 71.0 |
| POLYNESIA | 672,274 | | | | | | | |
| Cook Islands | 17,613 | 12.9 | 8.9 | 33.4 | 2.1 | 5.5 | 70.0 | 75.0 |
| French Polynesia | 307,600 | 13.8 | 6.0 | 34.0 | 1.7 | 5.6 | 77.0 | 82.6 |
| Niue | 1,936 | 13.9 | 2.4 | 36.0 | 2.4 | 18.8 ^b | 71.8 | 75.7 |
| Samoa | 224,000 | 27.0 | 5.5 | 20.6 | 4.0 | 12.0 | 70.3 | 75.5 |
| Tonga | 107,773 | 23.5 | 6.9 | 21.9 | 3.3 | 11.3 | 68.4 | 73.7 |
| Tokelau | 1,892 | 19.4 ^c | na | 26.8 | 2.6 | 4.6 | 73.3 ^d | 71.3 |
| Tuvalu | 11,400 | 23.0 | 10.1 | 26.6 | 3.2 | 18.1 | 64.1 | 68.4 |

Notes:

FSM = Federated States of Micronesia, RMI = Republic of Marshall Islands.

^a 2021 data.

^b Volatility due to small numbers.

^c 2016 data.

^d 2019 data.

Source: Data compiled by authors from WHO and World Bank databases (July 18, 2023).

The populations of the Pacific region are notably young, with a median age of 20–30 years compared with 38 years in Australia, New Zealand, and the US; this results in a prominent “youth bulge.” Melanesia’s total fertility rate (TFR) remains high, exceeding an average of three births per woman over their lifetime. The 2022 TFR in Vanuatu is 3.8 compared with 3.3 in Tonga and 2.7 in RMI. The high TFR and large youth population are influenced by several factors, including low usage of contraceptives and a tradition of having large families.³¹

In PNG, the maternal mortality rate is among the highest in WHO’s Western Pacific region, with 215 women dying per 100,000 live births, despite improving rates elsewhere in the region. This can be attributed to low quality of care in health facilities and fear, shame, and violence that discourage pregnant women from seeking care.³² The infant mortality rate (IMR) and mortality rate of children under 5 years old (i.e., under-five mortality rate or U5MR) have declined consistently across all PICTs in the last two decades, a significant achievement for the region reflecting improved living standards and healthcare delivery across the region.³³

Across the Pacific region, the average life expectancy at birth in 2021 was 69 years (67 years for men and 71 years for women). Although death rates continue to decline across many Pacific SIDS, life expectancy has plateaued or is declining in several SIDS due to NCDs.

1.2 Burden of NCDs

The Pacific Islands face a disproportionate burden of NCDs, such as diabetes, heart disease, respiratory conditions, and some cancers. In 2019, the likelihood of individuals aged 30–70 dying of these conditions in the Pacific Islands was estimated to be 23.3%, which is higher than the rates in East and Southeast Asia (12.4%) and the global average (17.8%).³⁴

NCDs cause three-quarters of all deaths in the region, most of which are premature and preventable, and are the leading causes of disability, such as blindness and kidney failure. The burden of diseases attributable to NCDs is particularly challenging in Micronesia and Polynesia, which includes RMI and Tonga. Approximately half of all NCD deaths in the Pacific Islands are due to heart disease. Overweight and obesity rates in PICTs are among the highest in the world and are continuously rising among young people.³⁵ Despite the rising burden posed by NCDs, PICTs remain the least able to respond to them.

Health status in the region reflects the social, economic, and commercial determinants of health. For example, cardiovascular mortality rates in the Pacific Islands have failed to decline in line with global trends due to the high prevalence of smoking, unhealthy diets with imported processed foods, and ineffective treatment with cost-effective medications. At least half of the Pacific Islands populations have one or more NCDs or associated risk factors, and the incidence continues to rise.

The burden of NCDs carries profound economic and developmental implications. Conditions such as uncontrolled diabetes may result in limb amputations or blindness. When NCD-related disability impacts the primary earner in a household, the financial challenges can be devastating for families in PICTs, where social protection is often absent. Moreover, in all PICTs, the cost of treating NCDs is high and unsustainable.³⁶ NCDs are also a drain on the development potential of many islands, as diabetes and heart disease typically affect working-age adults. The impact of NCDs is also made visible by the prevalence of amputations and diabetic retinopathy in communities.

In response to this pressing issue, there exists a commendable level of political commitment to NCD prevention and control in the region. Initiatives such as the WHO’s “Healthy Islands” vision (see Case Study 1), developed in 1995 to address the links between health, environment, and climate change, and “Tobacco Free Pacific 2025” exemplify this commitment. The Pacific NCD Roadmap put forward in 2014 is the primary policy instrument used to combat NCDs in PICTs (see Case Study 2). It is the first of its kind in the world developed collaboratively by Pacific ministers of finance and health, specifying measures to prevent NCDs and including over 30 other multisectoral interventions

suitable to the Pacific Islands. The roadmap has led to increased taxes on tobacco and sugar-sweetened beverages in almost all PICTs (see Case Study 2, Figure 2).

More effort and resources are required to implement national and regional plans to meet agreed-upon global and regional NCD targets. Most PICTs are considered lower-middle-income (per capita GDP of US\$ 1,136–4,465) or upper-middle-income (per capita GDP of US\$ 4,466–13,845) economies according to the World Bank classification; as such, they cannot access the full range of international financing for NCD prevention and control. Furthermore, PICTs are unable to raise additional resources from local budgets because governments, which are the main funders and providers of healthcare in the region, have limited flexibility to increase investments in health relative to other priorities. Raising additional resources for NCD prevention and control is an urgent priority for the small islands of the Pacific region.

1.3 Other health concerns

In addition to the NCD burden, the incidence of infectious diseases, such as tuberculosis, dengue, respiratory conditions, and waterborne diseases, remains high in Melanesian countries. The climate crisis is expected to increase the incidence of vector-borne and waterborne diseases in the region. Moreover, although the Pacific is generally considered a low-prevalence region for HIV/AIDS, it remains a public health challenge in PNG, which accounts for the majority of the cases in the region.

In some PICTs, injuries are also becoming a major public health problem. According to the WHO, the five most important causes of unintentional injury are road traffic injuries, drowning, burns, falls, and poisoning. Traffic injuries are often caused by alcohol intoxication, and some concerns have also been raised on the impact of the consumption of kava, a traditional soporific beverage derived from *Piper methysticum*.³⁷ Additionally, injuries are among the leading causes of death among children under the age of 15 years. Most PICTs do not have reliable data collection systems for injuries, thereby hindering their ability to develop effective public health policies, allocate resources, and address the specific needs of their populations.

In some PICTs, the triad of NCDs, infectious diseases, and injuries coexists, constituting a “syndemic,” defined as an aggregation of two or more concurrent or sequential synergistically interacting epidemics or disease clusters in a population with biological interactions, which exacerbate the prognosis and burden of disease.³⁸ The syndemic in the Pacific is often linked to the climate crisis, as changing weather and oceanic patterns are disrupting traditional foodways in the region (see Domain 2: Environmental Sustainability).

1.4 Impact of COVID-19

When the WHO declared COVID-19 a public health threat of global significance on March 11, 2020, the priority for the governments of PICTs was to isolate their countries from the disease. This was manifested through early and complete border shutdowns and strict travel restrictions. Additionally, national emergencies were declared by several PICTs. Affected countries in the region rapidly responded to contain the virus and limit community transmissions.³⁹ As a result, initial concerns about COVID-19 overwhelming small health systems proved unfounded. (See Domain 7: Health Governance for further information on the role of governance and regional collaboration in mitigating the impacts of COVID-19).

Over the course of the pandemic, most PICTs continued with public health measures including public information dissemination, the closure of international borders, restricting the movement of people within its borders. Border closures remained in place until well after the number of cases had declined significantly, and vaccination rollouts achieved good coverage rates in most PICTs. The Pacific Public Health Surveillance Network, founded jointly by the WHO and SPC in 1996, also proved invaluable in monitoring the spread of COVID-19 and other existing communicable diseases.

Despite delays in the vaccine supply, most PICTs achieved high vaccination rates. Smaller Pacific nations such as Nauru, Niue, and Palau had near-complete coverage by October 2021, while larger states, such as Fiji, Samoa, Tonga, and RMI achieved similar success by the end of 2021. However, PNG and the Solomon Islands face challenges in health sector capacity and vaccine demand and are unlikely to fully vaccinate their adult population until 2025–2027.⁴⁰

As a result of these measures, PICTs had some of the lowest number of cases and deaths from COVID-19 in the world. Fiji had the highest mortality rate in the region while most small islands had very low rates of the disease (Table 5). Notably, death registration in some PICTs is incomplete, which may underestimate mortality rates in these islands, especially in PNG.

While public health measures enabled low case rates and mortality rates, the health systems of PICTs are generally inadequate to address more critical health issues. Primary care and hospital capacity to treat patients with COVID-19 was highly variable across the region and smaller PICTs required support from Australia and New Zealand. Many PICTs did not have adequate ICU/high-dependency unit beds and related equipment such as ventilators.⁴¹ Most PICTs faced delays in accessing diagnostic tests until regional partners were able to secure resources for the tests to be done locally. Furthermore, already scarce health resources were diverted to the outbreak resulting in delays in access to routine healthcare and disruptions to service delivery. It is unclear what impact the pandemic had on prevailing health problems although most PICTs reported significant disruptions in service delivery.

Furthermore, the pandemic led to significant job losses and had a negative impact on the economies of PICTs which rely heavily on tourism. Many families reverted to subsistence during the pandemic by growing and producing much of the food they needed. Disruptions to school attendance also compromised learning although the full impact remains unknown. In a region where violence against women and girls is persistently high, rates increased during lockdowns.⁴² The total impact of the pandemic on PICTs societies is yet to be fully assessed.

Table 5: Confirmed cases and deaths from COVID-19 in selected PICTs as of March 2023

| Country/territory | Confirmed cases | Deaths | Case-fatality rate (%) | Deaths/100,000 population |
|--------------------------------|-----------------|--------|------------------------|---------------------------|
| Australia | 11,399,460 | 19,574 | 0.2 | 76.9 |
| Fiji | 68,898 | 883 | 1.3 | 98.5 |
| Federated States of Micronesia | 23,948 | 61 | 0.3 | 53.6 |
| New Zealand | 2,236,114 | 2,550 | 0.1 | 52.8 |
| Palau | 5,991 | 9 | 0.2 | 49.9 |
| Papua New Guinea | 46,825 | 670 | 1.4 | 7.5 |
| Republic of Marshall Islands | 15,649 | 17 | 0.1 | 29.1 |
| Samoa | 16,607 | 29 | 0.2 | 14.8 |
| Solomons | 24,575 | 153 | 0.6 | 23.4 |
| Tonga | 16,810 | 13 | 0.1 | 12.3 |
| Vanuatu | 12,014 | 14 | 0.1 | 4.8 |

Source: "Mortality Analyses - Johns Hopkins Coronavirus Resource Center," Johns Hopkins University Coronavirus Resource Center, updated March 16, 2023, <https://coronavirus.jhu.edu/data/mortality>

1.5 Republic of Marshall Islands

In 2021, life expectancy at birth in RMI was 63 years for men and 71 years for women. Although healthy life expectancy (i.e., the number of years, on average, that a person can expect to live in full health) data is not available for RMI, it was 63.7 years in 2019 for the Western Pacific. Moreover, the 2021 IMR and U5MR in RMI were 25 and 29.7 deaths per 1,000 live births, respectively.⁴³ Infant and child mortality rates have declined in RMI over the past decades,⁴⁴ reflecting improved healthcare and socioeconomic circumstances, better education and health promotion services, and greater awareness of health risks.

RMI continually seeks recognition and compensation for health problems linked to 67 nuclear tests that the US carried out in the area from 1946 to 1958. The US has provided affected communities in RMI with more than US\$ 600 million, including direct financial settlement of nuclear claims, resettlement funds, rehabilitation of affected atolls, and radiation-related healthcare costs. Although testing ended in 1958, a 2012 UN report⁴⁵ highlighted the long-lasting effects of this testing. Indeed, birth defects and cancers, particularly thyroid cancer and leukemia, are reportedly more common in the Marshallese population near the nuclear test sites.⁴⁶ RMI seeks further compensation and restitution through regional and global bodies. Concerns about leakage of nuclear waste stored in a concrete dome in RMI are also growing because of rising sea levels and climate change.

NCDs, namely, complications of diabetes and some cancers, are the leading causes of death in RMI. Approximately 60% of adult (aged ≥ 18 years) women and 50% of adult men are obese. The obesity epidemic began when local diets changed from fresh fish and vegetables to highly processed and energy-dense foods, such as white rice, flour, canned foods, processed meats, and soft drinks imported from other countries. Smoking is a prominent cause of high NCD prevalence in RMI. From 2019 to 2020, the adult smoking rate increased slightly to 28.50%, compared with only 12% in the United States.⁴⁷ Children also have high rates of waterborne illnesses due to problems accessing clean water in low-lying atolls.

Tuberculosis (TB) is endemic in RMI, but the risk of infection is thought to be low. It was declared a public health emergency in 2010, with many cases of multidrug-resistant TB. The emergence of TB in people with diabetes is an added concern, given the high prevalence of diabetes. The WHO classifies RMI as having a high burden of TB, with an estimated incidence approaching 500 cases per 100,000 population in 2019.⁴⁸ TB is closely associated with poverty and overcrowding, particularly in the population centers of the Majuro and Ebeye atolls.

1.6 Tonga

Tonga has one of the best overall levels of health in the Pacific region, having achieved a dramatic reduction in communicable diseases and maternal and child mortality since the 1950s. In 2021, life expectancy at birth in Tonga was 68.4 years for men and 73.7 years for women. Healthy life expectancy was 64 years in 2019, meaning that Tongan women can expect to live approximately 10 years in suboptimal health, largely due to NCDs. The 2021 IMR and U5MR were 10 and 11.1 deaths per 1,000 live births, respectively, with both values being notably lower than RMI and Vanuatu and continuing to decline.⁴⁹ This substantial improvement in health outcomes reflects improving socioeconomic circumstances, very high immunization rates, and the prevalence of skilled HCWs overseeing most births.

Nevertheless, Tonga's health systems can be further improved by managing NCDs better, which cause three-quarters of all deaths in Tonga. The 2017 WHO NCD Country Profile for Tonga reveals much work to be done to achieve the nine voluntary global targets in the Global Action Plan for the Prevention and Control of NCDs 2013–2020.⁵⁰ More than three-quarters of adult Tongans are obese, and obesity is increasing in children and young people. Obesity and NCD prevalence in Tonga are among the highest in the world.⁵¹ Similar to RMI, the obesity epidemic in Tonga began with a change

in diet from fresh fish and vegetables to highly processed and energy-dense foods. Additionally, most adult Tongans (97.3%) do not consume the recommended five or more servings a day of fruit and vegetables.⁵²

Adult smoking rates in Tonga also remain high. The 2017 WHO STEPwise approach to NCD risk factor surveillance (STEPS) survey revealed that smoking rates were 40% and 15% in men and women, respectively, indicating a slight decline from 46% in men and a slight increase from 13% in women since the 2011–2012 STEPS survey. Overall smoking rates declined from 29% in 2011–2012 to 25% in 2017. Notably, however, many Tongans (83%) are lifetime nondrinkers, primarily for religious reasons.⁵³

Given these population health trends, Tonga has already taken major steps in NCD prevention and control. Tonga is one of two PICTs that have removed sales tax from fruit and vegetables. It is the only Pacific nation that has both removed this sales tax and increased taxes on unhealthy food items, tobacco, and alcohol.⁵⁴ It is also the only PICTs that has established a health promotion and disease prevention agency, known as the Tonga Health Promotion Foundation, funded largely by taxes on tobacco, alcohol, SSBs, and unhealthy food items. Increased taxes on SSBs have led to reduced consumption of soft drinks and a concurrent increase in the consumption of water.⁵⁵

1.7 Vanuatu

In 2021, life expectancy at birth in Vanuatu was 68.4 years for men and 73.0 years for women, having increased in the past few decades.⁵⁶ In 2019, healthy life expectancy was 58 years, meaning that men and women can expect to spend 10 and 14 years, respectively, in suboptimal health. In 2021, the IMR was 20 and the U5MR was 23, which have been on the decline in the last two decades.⁵⁷ Infectious diseases, including pneumonia, malaria, and diarrheal diseases, along with preterm birth complications, birth asphyxia and trauma, and congenital anomalies, remain the leading causes of death for children under 5 years.⁵⁸ Fortunately, the incidence of malaria continues to decline in Vanuatu.⁵⁹

The challenges of child, maternal, and reproductive health are further compounded by the persistent issue of malnutrition in Vanuatu. According to the 2020 Global Nutrition Report, little to no progress has been made toward meeting global nutrition targets for stunting, low birth weight, and anemia.⁶⁰ Stunting affects 28.9% of children under the age of 5 years, and 10.9% of infants have low birth weight. Anemia remains prevalent among women of reproductive age, affecting 28.5% of women aged 15–49 years. However, Vanuatu is making good progress toward the target for exclusive breastfeeding, with 73% of infants aged 0–5 months being exclusively breastfed.⁶¹ The Food and Agriculture Organization of the UN has also indicated that stunting and micronutrient deficiency remain a risk in children under 2 years old in Vanuatu.⁶² Nutrition status has improved only minimally over the past several decades, with undernutrition remaining a persistent problem.⁶³

As traditional dietary patterns shift to contain healthier imported and processed foods, dietary risks have become a key contributor to the rising rates of overweight, obesity, and NCDs. Adult obesity rates in Vanuatu are currently 23.4% in men and 33.4% in women,⁶⁴ implying that the percentage of overweight adults is even higher. The combination of undernutrition with overweight or obesity has been identified as a “double burden of malnutrition” in not only Vanuatu but also other low- and middle-income countries in the region and worldwide; it primarily stems from rapid shifts in dietary patterns, lifestyles, and economics that increase the availability of and accessibility to high-calorie, nutrient-poor foods more available.⁶⁵

Moreover, limited progress has been made toward achieving diet related NCD targets. More than 18.5% of adults in Vanuatu are estimated to have diabetes. NCDs, particularly circulatory system diseases, diabetes, cancers, and chronic respiratory disease, are among the leading causes of adult morbidity and mortality.⁶⁶

1.8 Recommendations

RECOMMENDATION 1A

Continue working toward global and regional NCD targets

RMI, Tonga, and Vanuatu are committed to several global and regional agreements on the prevention and control of NCDs and associated risk factors. These include the alignment of local tobacco legislation with the WHO Framework Convention on Tobacco Control. The Pacific NCD Roadmap is also aligned with several WHO resolutions, including the Global Action Plan for the prevention and control of NCDs 2013–2030. Additional efforts required to align with these regional and global agreements, especially as evidence of the efficacy of specific interventions, such as tax increases on tobacco products and SSBs, becomes clearer. The Bridgetown Declaration, recently adopted by SIDS, provides additional evidence-based interventions that island nations can consider accelerating actions on NCD prevention and control. Increased investment in NCD prevention and control, better access to healthy food items, and increased taxation on alcohol and SSBs are additional measures that should be considered. Enhanced access to primary healthcare through the implementation of UHC will enable better treatment of NCDs at the primary care level, especially in PICTs, where resources are severely constrained.

RECOMMENDATION 1B

Adopt a socioecological model of health to address the Pacific “syndemic”

Population health in the Pacific region is closely tied to the islands’ economic, environmental, and social structures and challenges. For example, natural disasters often destroy local crops, thus forcing people to turn to imported highly processed food items known to increase the risk of NCDs. Indeed, not only health and well-being but also the quality of life is considerably influenced by the social determinants of health, such as access to safe housing and transportation, clean water and air, healthy foods, education, and prevention of gender-based violence; reduced access to these impairs both nutrition quality and physical activity of the affected population. Governments can consider applying a socioecological model, in which health behavior is considered within the interpersonal and community-level contexts to address the interconnected challenges of economic development, climate change mitigation, and health.

RECOMMENDATION 1C

Enhance systems for disease surveillance and outbreak response

The COVID-19 pandemic has highlighted the importance of timely surveillance and early warning systems to better inform national responses to outbreaks. Building on the Pacific Public Health Surveillance Network, RMI, Tonga, and Vanuatu would benefit by improving local data collection, analysis, and action. The Tonga Ministry of Health’s COVID-19 Preparedness and Response Plan (2020), which includes detailed emergency procedures such as the purchase of critical health equipment, is a sound strategy for ongoing surveillance and response.⁶⁷ Following the evaluation of the national response to COVID-19, all three nations would do well to design and update surveillance and response strategies for all outbreaks.

RECOMMENDATION 1D

Review the impact of the COVID-19 pandemic on healthcare delivery to prepare for future outbreaks

The full extent of the impact of the COVID-19 pandemic on healthcare delivery in the Pacific Islands is not well understood. PICTs and global/regional organizations should consider an independent review of the COVID-19 pandemic consulting a diverse range of stakeholders. Transparent sharing of findings and the subsequent development of evidence-based policies will enable more sustainable healthcare delivery in future crises.

CASE STUDY 1

The Yanuca (Healthy Islands) Declaration



At their inaugural meeting on Yanuca Island in Fiji in 1995, Ministers of Health of Pacific Islands nations adopted the Yanuca (Healthy Islands) Declaration. This declaration created a unifying “Healthy Islands” vision for PICTs in which:

- children are nurtured in body and mind,
- environments invite learning and leisure,
- people work and age with dignity,
- ecological balance is a source of pride, and
- the ocean which sustains us is protected.

The declaration further describes the role of healthcare workers (HCWs) and the importance of strengthening primary care to achieve this vision.

The vision of Healthy Islands has served as a compelling driving force in support of health. It is generally referred to in the development of national plans and disease prevention and health promotion strategies for PICTs and the wider region. Some PICTs have leveraged the vision to develop programs related to improving sanitation, reducing intake of sugary drinks, and increasing physical activity.⁶⁸ The success of the vision is associated with its holistic approach to health and well-being, and its promotion of collaboration across the region. The programs it has inspired are marked by careful evidence-based planning, accountability, strategic partnerships, and especially, a nuanced understanding of the local setting and community involvement.⁶⁹

Twenty years later, in 2015, a review of the Yanuca Declaration⁷⁰ revealed that although health had improved considerably in the Pacific, including a decline in IMRs and U5MRs, the progress was slower than in other parts of the world. Continuing challenges included country-level implementation gaps related to social, economic, and environmental issues, a lack sustainable resources for the health sector, funding constraints and workforce limitations, suboptimal collaboration with partners, and technical challenges.⁷¹

Given the risk of the Pacific Islands falling behind, the health ministers have proposed several actions for accelerating the implementation and impact of the Healthy Islands vision: reinforcing the vision and operationalizing it at the national level, developing a monitoring and reporting mechanism to improve accountability, and tracking achievements. They also agreed that investing in Pacific leadership with increased coordination among development partners and other sectors will ensure greater accountability and commitment among countries.

CASE STUDY 2
**Pacific NCD
Roadmap**



NCDs, such as diabetes, heart disease, and some cancers, have a disproportionate impact on residents of PICTs. The burden of disease is high, and risk factors, such as smoking, alcohol use, and unhealthy diets, are highly prevalent. In addition, NCDs have significant negative health, social, and economic impacts on individuals, their families, and communities. A 2012 World Bank report on the economic costs of NCDs in Samoa, Tonga, and Vanuatu, for example, found that expenditure on NCD treatment, when managed appropriately, significantly exceeded per capita health expenditure.⁷²

In response to this growing concern, the ministers of finance and health in the Pacific adopted the Pacific NCD Roadmap in 2014. This joint declaration is the first of its kind in the world, reflecting the concerns of Pacific leaders about the combined health and economic impacts of NCDs. The Pacific NCD Roadmap⁷³ consists of over 30 multi-sectoral evidence-based interventions to prevent and reduce NCD prevalence. It includes several WHO “best buys,”⁷⁴ including,

- Strengthening tobacco control, including raising excise duties to 70% of the retail price of cigarettes,
- Reducing consumption of food and drinks directly linked to obesity, heart disease, and diabetes, such as SSBs and salty and fatty foods,
- Improving the efficiency and impact of the health sector for prevention and early treatment, and
- Strengthening monitoring and evaluation of activities to mitigate the burden of NCDs.

The Monitoring Alliance on NCD Action (MANA) Dashboard was adopted in 2017 as the primary tool for monitoring progress on the roadmap’s implementation. The MANA Dashboard consists of global and regional NCD targets, most of which are evidence-based interventions based on WHO best buys. The Dashboard allows not only individual PICTs to monitor their own progress but also global and regional entities to compare progress between nations.

Figure 2 illustrates the latest MANA Dashboard report from the Pacific SIDS, comparing indicators across 2017–2018, 2019–2020, and 2021–2022. Progress has been made on key interventions; for instance, nearly all SIDS have increased taxes on tobacco, and most have increased taxes on SSBs. While some progress has been observed, the PIF Secretariat has indicated that most PICTs are still not on track to meet NCD targets. Additional efforts are required, including investing financial resources, engaging stakeholders, raising or lower appropriate taxes, and implementing NCD prevention policies.⁷⁵ Nevertheless, the NCD Roadmap and MANA Dashboard represent concerted and coordinated endeavors to tackle a critical health issue.

Figure 2: Pacific MANA Dashboard Progress 2017–2018 vs. 2019–2020 vs. 2021–2022

| | | American Samoa | | | Commonwealth of the Mariana Islands | | | Cook Islands | | |
|---------------------------------|---|----------------|---------|---------|-------------------------------------|---------|---------|--------------|---------|---------|
| | | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 |
| Leadership & governance | L1. Multi-sectoral NCD taskforce | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | • | 🟡 |
| | L2. National strategy addressing NCDs and risk factors | • | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | ★★★★ | ★★★★ | ★★★★ |
| | L3. Explicit NCD indicators and targets | ★★ | 🟡 | 🟡 | 🚫 | 🟡 | 🟡 | ★★★★ | ★★★★ | ★★★★ |
| Preventive policies | | | | | | | | | | |
| Tobacco | T1. Tobacco excise taxes | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ |
| | T2. Smoke-free environments | ★★★★ | ★★★★ | ★★★★ | ★★ | ★★ | ★★ | ★★ | ★★★★ | ★★★★ |
| | T3. Tobacco health warnings | 🚫 | 🟡 | • | • | • | • | ★★ | ★★★★ | ★★★★ |
| | T4. Tobacco advertising, promotion and sponsorship | • | ★★ | 🟡 | 🟡 | 🟡 | 🟡 | • | ★★★★ | ★★★★ |
| | T5. Tobacco sales and licencing | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★ | ★ | ★ |
| | T6. Tobacco industry interference | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🟡 | 🚫 | 🟡 | 🟡 |
| Alcohol | A1. Alcohol licencing to restrict sales | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★ | ★★ | ★★ |
| | A2. Alcohol advertising | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🟡 | 🚫 | 🟡 | 🟡 |
| | A3. Alcohol taxation | • | • | • | • | • | • | • | • | • |
| | A4. Drink driving | ★ | ★★ | • | ★ | ★ | ★ | • | ★ | ★★ |
| Food | F1. Reducing salt consumption | 🚫 | 🚫 | 🚫 | 🟡 | 🟡 | • | ★★ | ★★ | ★★ |
| | F2. Trans-fats | 🟡 | • | 🚫 | 🟡 | 🟡 | 🟡 | 🚫 | ★ | ★ |
| | F3. Unhealthy food marketing to children | 🟡 | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | ★★★★ | ★★★★ |
| | F4. Food fiscal policies | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🟡 | ★ | ★ | ★ |
| | F5. Healthy food policies in schools | ★★ | ★★ | ★ | • | • | • | ★ | ★ | ★ |
| | F6. Food-based dietary guidelines | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | ★★ | ★★ | ★★ |
| Physical activity | P1. Compulsory physical education in school curriculum | ★★★★ | 🟡 | 🟡 | 🟡 | ★★★★ | ★★★★ | ★★ | ★★★★ | ★★★★ |
| Enforcement | E1. Enforcement of laws and regulations related to NCD risk factors | 🟡 | ★ | • | ★★★★ | • | • | • | ★★★★ | ★★ |
| Health system response programs | H1. National guidelines for care of main NCDs | ★★ | ★★ | ★★ | 🟡 | 🟡 | ★★ | ★ | ★★★★ | ★★★★ |
| | H2. Essential drugs | • | • | • | ★★★★ | • | • | • | ★★★★ | ★★★★ |
| | H3. Smoking cessation | ★ | ★★ | ★ | ★★ | ★★ | ★★★★ | ★★ | ★★ | ★★★★ |
| | H4. Marketing of breast milk substitutes | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🟡 | • |
| | H5. Baby friendly hospitals | • | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | 🚫 | 🟡 | 🚫 |
| | H6. Maternity leave and breastfeeding | 🚫 | ★★ | 🟡 | 🟡 | ★ | 🟡 | 🟡 | 🟡 | 🟡 |
| Monitoring | M1. Population risk factor prevalence surveys - adults | ★★ | ★★ | ★★ | ★★ | ★★ | 🟡 | ★★★★ | ★★★★ | ★★★★ |
| | M2. Population risk factor prevalence surveys - youth | 🚫 | • | 🚫 | • | • | • | ★★★★ | ★ | 🟡 |
| | M3. Child growth monitoring | 🟡 | 🟡 | 🟡 | ★ | ★ | ★ | ★★ | ★★★★ | 🚫 |
| | M4. Routine cause-specific mortality | ★★ | ★★★★ | • | ★★★★ | ★★★★ | ★ | ★★★★ | ★★★★ | ★★★★ |

Notes: 🚫 = intervention not present; 🟡 = intervention under development; • = intervention present; strength of action of intervention – low ★ medium ★★ high ★★★; N/A: not applicable.

Adapted from: "MANA Dashboard – Pacific Data Hub", Pacific Data Hub, <https://pacificdata.org/health-dashboard>, data current as of July 18, 2023.

Figure 2 (continued): Pacific MANA Dashboard Progress 2017–2018 vs. 2019–2020 vs. 2021–2022

| | | Federated States of Micronesia | | | | | Fiji | | | French Polynesia | | |
|---------------------------------|---|--------------------------------|---------|---------|----|----|---------|---------|---------|------------------|---------|---------|
| | | 2017-18 | 2019-20 | C&K | P | Y | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 |
| | | | | 2021-22 | | | | | | | | |
| Leadership & governance | L1. Multi-sectoral NCD taskforce | 🚫 | 👉 | ★★★★ | ● | ● | 👉 | ★ | ★ | 🚫 | 🚫 | 🚫 |
| | L2. National strategy addressing NCDs and risk factors | ● | ★★★★ | ★★★★ | ● | ● | ★★★★ | ★★★★ | ● | ● | ★★ | ★★★★ |
| | L3. Explicit NCD indicators and targets | ★★★★ | ★★★★ | ★★★★ | ● | ● | ★★★★ | ★★★★ | ● | 👉 | 👉 | 👉 |
| Preventive policies | | | | | | | | | | | | |
| Tobacco | T1. Tobacco excise taxes | ★ | ★ | ★ | ● | ● | ★ | ★ | ★ | ★★★★ | ★★★★ | ★★★★ |
| | T2. Smoke-free environments | 👉 | ★ | ● | ● | ● | ★ | ★★ | ★★ | ★★★★ | ★★★★ | ★★★★ |
| | T3. Tobacco health warnings | 👉 | 👉 | 👉 | 👉 | 👉 | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★ | ★★ |
| | T4. Tobacco advertising, promotion and sponsorship | 👉 | 👉 | 👉 | 👉 | 👉 | ● | ★★ | ★★ | ★★★★ | ★★★★ | ★★★★ |
| | T5. Tobacco sales and licencing | N/A | ★ | ★ | 🚫 | 🚫 | ★★★★ | ★★ | ★★★★ | 🚫 | 🚫 | 🚫 |
| | T6. Tobacco industry interference | 👉 | 👉 | 👉 | 👉 | 👉 | 👉 | 🚫 | 👉 | 🚫 | 🚫 | 🚫 |
| Alcohol | A1. Alcohol licencing to restrict sales | N/A | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ |
| | A2. Alcohol advertising | N/A | ★★★★ | 🚫 | ● | 🚫 | 🚫 | 🚫 | 🚫 | ● | ★★★★ | ● |
| | A3. Alcohol taxation | 👉 | 👉 | ● | ● | ● | ★★★★ | ★★★★ | ● | ● | ● | ● |
| | A4. Drink driving | N/A | ● | 👉 | ● | ● | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ |
| Food | F1. Reducing salt consumption | ★★★★ | ★★ | ★ | ★ | ★ | ★★★★ | ★★★★ | ● | ★★ | ★ | ★ |
| | F2. Trans-fats | 🚫 | 🚫 | 👉 | 👉 | 👉 | 👉 | 👉 | ● | 👉 | 👉 | 👉 |
| | F3. Unhealthy food marketing to children | 🚫 | 👉 | 👉 | 👉 | 👉 | 👉 | 👉 | 👉 | ● | ● | ● |
| | F4. Food fiscal policies | ★ | ★ | ● | ● | ● | ★ | ★ | ★ | ★ | ★ | ★ |
| | F5. Healthy food policies in schools | N/A | 👉 | 🚫 | 🚫 | 🚫 | ★ | ★ | ★ | ★★★★ | ★★★★ | 👉 |
| | F6. Food-based dietary guidelines | ● | ● | ● | ● | ● | ★ | ★ | ★ | ★★ | ★★ | ★★ |
| Physical activity | P1. Compulsory physical education in school curriculum | 👉 | 👉 | 👉 | 👉 | 👉 | 👉 | ★★ | ★★★★ | ★★★★ | ★★★★ | |
| Enforcement | E1. Enforcement of laws and regulations related to NCD risk factors | N/A | ★★ | ● | ● | ● | ● | ● | 👉 | 👉 | 👉 | |
| Health system response programs | H1. National guidelines for care of main NCDs | ● | ★ | ★★ | ★★ | ★★ | ★ | ★ | ★ | ★★★★ | 👉 | ★★★★ |
| | H2. Essential drugs | N/A | ★★ | ● | ● | ● | ★ | ★ | ★ | ★★★★ | ★★★★ | ★★★★ |
| | H3. Smoking cessation | N/A | ● | ● | ★ | 👉 | ★ | ★ | ★ | ★★ | ★★★★ | ★★★★ |
| | H4. Marketing of breast milk substitutes | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | ★★★★ | ★★ | ★★ | ● | ● | ★★★★ |
| | H5. Baby friendly hospitals | ● | 👉 | 👉 | 👉 | 👉 | ★ | ★ | ★★ | 🚫 | 🚫 | 🚫 |
| | H6. Maternity leave and breastfeeding | 👉 | 👉 | 👉 | 👉 | 👉 | ★ | ★ | ★ | ★★★★ | ★★★★ | ★★★★ |
| Monitoring | M1. Population risk factor prevalence surveys - adults | ★★★★ | 👉 | 👉 | 👉 | 👉 | ★ | ★ | 👉 | 👉 | 👉 | 👉 |
| | M2. Population risk factor prevalence surveys - youth | ★★★★ | ★★★★ | ★ | ● | ● | ★ | ★ | 👉 | ★★★★ | ★★★★ | ★★★★ |
| | M3. Child growth monitoring | 👉 | 🚫 | 👉 | 👉 | 👉 | 👉 | 👉 | ★★ | 👉 | 👉 | 👉 |
| | M4. Routine cause-specific mortality | ★★ | ★★ | ★★ | ● | ● | ★ | ★ | ★★ | ★★★★ | ★★ | ● |

Notes: Federated States of Micronesia – C&K = Chuuk and Kosrae; P = Pohnpei; Y = Yap; 🚫 = intervention not present; 👉 = intervention under development; ● = intervention present; strength of action of intervention – low ★ medium ★★ high ★★★★; N/A: not applicable.

Figure 2 (continued): Pacific MANA Dashboard Progress 2017–2018 vs. 2019–2020 vs. 2021–2022

| | | Guam | | | Kiribati | | | Nauru | | |
|---------------------------------|---|---------|---------|---------|----------|---------|---------|---------|---------|---------|
| | | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 |
| Leadership & governance | L1. Multi-sectoral NCD taskforce | ★★★★ | ★★★★ | ● | ● | ● | ● | ● | ★★ | ★★ |
| | L2. National strategy addressing NCDs and risk factors | ★★★★ | ★★★★ | ● | ● | ● | ★★★★ | ● | ● | ● |
| | L3. Explicit NCD indicators and targets | ★★★★ | ★★★★ | ★★★★ | ★★ | ★★ | | ● | ★★★★ | ★★★★ |
| Preventive policies | | | | | | | | | | |
| Tobacco | T1. Tobacco excise taxes | ★ | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● |
| | T2. Smoke-free environments | ★★★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★★★ | ★★★★ | ★★★★ |
| | T3. Tobacco health warnings | ★ | ★ | ● | ● | ● | ★ | ● | ● | ● |
| | T4. Tobacco advertising, promotion and sponsorship | ● | ● | ● | ★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★ |
| | T5. Tobacco sales and licencing | ★★ | ★★ | ★★ | ★ | ★ | ★ | ★★ | ★★ | ★★ |
| | T6. Tobacco industry interference | ⊘ | ⊘ | ⊘ | ⊘ | ⊘ | ⊘ | ⊘ | ⊘ | ⊘ |
| Alcohol | A1. Alcohol licencing to restrict sales | ★★★★ | ★★★★ | ★★★★ | ★★ | ★★ | ★★ | ★★ | ★★★★ | ★★★★ |
| | A2. Alcohol advertising | ● | ● | ● | ⊘ | ⊘ | ⊘ | ⊘ | ● | ● |
| | A3. Alcohol taxation | ● | ● | ● | ● | ● | ● | ★★★★ | ★★★★ | ★★★★ |
| | A4. Drink driving | ★★ | ★★ | ● | ★ | ★ | ● | ★★ | ★★ | ★★ |
| Food | F1. Reducing salt consumption | ★★ | ★★ | ★ | ★★ | ★★★★ | ★★★★ | ★ | ★ | ★ |
| | F2. Trans-fats | ● | ● | ⊘ | ● | ● | ⊘ | ⊘ | ● | ● |
| | F3. Unhealthy food marketing to children | ● | ● | ⊘ | ★★★★ | ★★★★ | ★★★★ | ⊘ | ⊘ | ⊘ |
| | F4. Food fiscal policies | ⊘ | ⊘ | ⊘ | ★★★★ | ★★★★ | ★★ | ★★★★ | ★★★★ | ● |
| | F5. Healthy food policies in schools | ★★★★ | ★★★★ | ★★ | ★ | ★ | ★ | ⊘ | ★★ | ★★ |
| | F6. Food-based dietary guidelines | ★★ | ★★ | ★★ | ★★★★ | ★★★★ | ★★★★ | ● | ● | ● |
| Physical activity | P1. Compulsory physical education in school curriculum | ★ | ★ | ● | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ |
| Enforcement | E1. Enforcement of laws and regulations related to NCD risk factors | ★ | ★ | ● | ★ | ★★★★ | ★★★★ | ● | ● | ● |
| Health system response programs | H1. National guidelines for care of main NCDs | ★★ | ★★ | ★★ | ★ | ★ | ★ | ★ | ★★ | ★★ |
| | H2. Essential drugs | ● | ★★★★ | ● | ★★ | ★★ | ★★ | ★★ | ★★★★ | ★★★★ |
| | H3. Smoking cessation | ★★ | ★★★★ | ★★★★ | ● | ● | ● | ● | ● | ● |
| | H4. Marketing of breast milk substitutes | ⊘ | ⊘ | ⊘ | ● | ★★ | ★★ | ⊘ | ⊘ | ⊘ |
| | H5. Baby friendly hospitals | ⊘ | ⊘ | ⊘ | ● | ● | ● | ● | ⊘ | ⊘ |
| | H6. Maternity leave and breastfeeding | ● | ★★★★ | ● | ★ | ★ | ● | ● | ● | ● |
| Monitoring | M1. Population risk factor prevalence surveys - adults | ★ | ★★ | ★ | ★★ | ★★★★ | ● | ★★ | ★★ | ● |
| | M2. Population risk factor prevalence surveys - youth | ● | ● | ● | ⊘ | ⊘ | ⊘ | ⊘ | ● | ● |
| | M3. Child growth monitoring | ● | ● | ● | ● | ● | ● | ★★★★ | ★★★★ | ★★★★ |
| | M4. Routine cause-specific mortality | ★ | ★ | ★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ |

Notes: ⊘ = intervention not present; ● = intervention under development; ★ = intervention present; strength of action of intervention – low ★ medium ★★ high ★★★

Figure 2 (continued): Pacific MANA Dashboard Progress 2017–2018 vs. 2019–2020 vs. 2021–2022

| | | Niue | | | New Caledonia | | | Palau | | |
|---------------------------------|---|---------|---------|---------|---------------|---------|---------|---------|---------|---------|
| | | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 |
| Leadership & governance | L1. Multi-sectoral NCD taskforce | 🟡 | 🚫 | 🚫 | 🟡 | 🟡 | 🟡 | ★★★★ | ★★★★ | ★★★★ |
| | L2. National strategy addressing NCDs and risk factors | ★★★★ | ★★★★ | 🟡 | 🟡 | ★ | ★ | • | ★★ | 🟡 |
| | L3. Explicit NCD indicators and targets | • | ★ | ★ | • | 🟡 | 🟡 | ★★★★ | ★★★★ | 🟡 |
| Preventive policies | | | | | | | | | | |
| Tobacco | T1. Tobacco excise taxes | ★ | ★ | ★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ |
| | T2. Smoke-free environments | 🟡 | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★ | ★★ | ★★ |
| | T3. Tobacco health warnings | 🟡 | ★★★★ | ★★★★ | ★ | ★★ | ★ | 🚫 | 🟡 | 🟡 |
| | T4. Tobacco advertising, promotion and sponsorship | 🟡 | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ |
| | T5. Tobacco sales and licencing | 🟡 | ★★★★ | ★★★★ | • | 🚫 | 🚫 | ★★★★ | ★★★★ | ★★★★ |
| | T6. Tobacco industry interference | 🟡 | ★★★★ | ★★★★ | 🚫 | 🚫 | 🚫 | 🚫 | 🟡 | 🟡 |
| Alcohol | A1. Alcohol licencing to restrict sales | ★★ | ★★ | ★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ |
| | A2. Alcohol advertising | 🚫 | 🚫 | 🚫 | ★★ | ★★★★ | ★★★★ | • | 🟡 | 🟡 |
| | A3. Alcohol taxation | • | • | • | ★★★★ | ★★★★ | ★★★★ | • | • | • |
| | A4. Drink driving | ★ | ★ | ★ | ★★ | ★★★★ | ★★★★ | ★★ | ★★ | ★★ |
| Food | F1. Reducing salt consumption | • | • | ★ | ★★ | ★★ | ★ | ★ | ★ | ★ |
| | F2. Trans-fats | 🚫 | • | • | 🚫 | 🚫 | 🚫 | 🟡 | 🟡 | 🟡 |
| | F3. Unhealthy food marketing to children | 🚫 | • | • | 🚫 | 🚫 | 🚫 | 🟡 | 🚫 | 🚫 |
| | F4. Food fiscal policies | ★★ | ★★ | ★★ | 🟡 | ★ | ★ | 🚫 | 🚫 | 🟡 |
| | F5. Healthy food policies in schools | ★★ | ★★★★ | ★★★★ | ★ | ★ | ★ | 🟡 | ★★ | ★★ |
| | F6. Food-based dietary guidelines | ★★★★ | ★★★★ | ★★★★ | ★★ | ★★★★ | ★★★★ | 🟡 | ★★ | ★★ |
| Physical activity | P1. Compulsory physical education in school curriculum | ★★★★ | ★★★★ | ★★★★ | • | ★★ | ★★★★ | 🟡 | • | • |
| Enforcement | E1. Enforcement of laws and regulations related to NCD risk factors | • | • | • | • | 🟡 | 🟡 | 🟡 | ★ | ★ |
| Health system response programs | H1. National guidelines for care of main NCDs | ★★★★ | ★★ | ★★ | ★★★★ | ★★★★ | ★★★★ | 🚫 | ★★ | ★★ |
| | H2. Essential drugs | ★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | 🚫 | 🚫 | ★ |
| | H3. Smoking cessation | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★ | ★ | ★★ | ★★ |
| | H4. Marketing of breast milk substitutes | 🚫 | 🟡 | 🚫 | • | 🚫 | 🚫 | ★★★★ | ★★★★ | ★★★★ |
| | H5. Baby friendly hospitals | 🚫 | 🚫 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 |
| | H6. Maternity leave and breastfeeding | • | • | • | • | ★★★★ | ★★ | 🟡 | 🟡 | 🟡 |
| Monitoring | M1. Population risk factor prevalence surveys - adults | 🟡 | 🟡 | 🟡 | ★★★★ | 🟡 | 🟡 | ★★ | ★★ | ★★ |
| | M2. Population risk factor prevalence surveys - youth | 🟡 | ★★★★ | ★★★★ | • | 🚫 | • | ★★★★ | ★★★★ | ★★★★ |
| | M3. Child growth monitoring | ★★★★ | ★★★★ | ★★★★ | 🟡 | • | ★★★★ | ★★★★ | ★ | ★★★★ |
| | M4. Routine cause-specific mortality | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★ | • |

Notes: 🚫 = intervention not present; 🟡 = intervention under development; • = intervention present; strength of action of intervention – low ★ medium ★★ high ★★★

Figure 2 (continued): Pacific MANA Dashboard Progress 2017–2018 vs. 2019–2020 vs. 2021–2022

| | | Papua New Guinea | | | Republic of the Marshall Islands | | | Samoa | | |
|---------------------------------|---|------------------|---------|---------|----------------------------------|---------|---------|---------|---------|---------|
| | | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 |
| Leadership & governance | L1. Multi-sectoral NCD taskforce | ⊘ | ⊘ | ⊘ | 🟡 | ★ | ★ | ★★★ | ★★★ | ⊘ |
| | L2. National strategy addressing NCDs and risk factors | ★★★★ | ★★★★ | • | ⊘ | 🟡 | 🟡 | ★★★★ | ★★★★ | ★★★★ |
| | L3. Explicit NCD indicators and targets | ★★★★ | ★★★★ | • | ⊘ | 🟡 | 🟡 | ★★ | ★★★★ | ★★★★ |
| Preventive policies | | | | | | | | | | |
| Tobacco | T1. Tobacco excise taxes | • | ★★ | ★★ | 🟡 | ★ | ★ | ★★ | ★★ | ★ |
| | T2. Smoke-free environments | ★★★★ | ★★★★ | ★★★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★★★ |
| | T3. Tobacco health warnings | ★★ | ★★★★ | ★★★★ | • | • | • | ★★ | ★★★★ | ★★★★ |
| | T4. Tobacco advertising, promotion and sponsorship | ★★ | ★★ | ★★ | ★★ | • | 🟡 | ★★★★ | ★★ | ★★★★ |
| | T5. Tobacco sales and licencing | ★★★★ | ★★ | ★★ | ⊘ | ★ | 🟡 | 🟡 | ★★★★ | ★★★★ |
| | T6. Tobacco industry interference | 🟡 | ⊘ | ⊘ | ⊘ | ⊘ | 🟡 | ⊘ | ★★★★ | ★ |
| Alcohol | A1. Alcohol licencing to restrict sales | ★★ | ★★★★ | ★★★★ | ★★ | ★★ | ★ | ★★ | ★★★★ | ★★★★ |
| | A2. Alcohol advertising | • | ⊘ | ⊘ | ⊘ | ⊘ | ⊘ | • | • | • |
| | A3. Alcohol taxation | • | ★★ | ★★ | 🟡 | • | • | ★ | ★ | ★★ |
| | A4. Drink driving | 🟡 | • | 🟡 | ★ | ★ | • | • | ★ | ★★ |
| Food | F1. Reducing salt consumption | ★ | • | • | ⊘ | ⊘ | • | ★★★★ | ★★★★ | ★★★★ |
| | F2. Trans-fats | 🟡 | 🟡 | 🟡 | 🟡 | ⊘ | • | 🟡 | ★★ | ★★ |
| | F3. Unhealthy food marketing to children | ⊘ | 🟡 | 🟡 | ⊘ | ⊘ | 🟡 | ⊘ | ★ | ★ |
| | F4. Food fiscal policies | 🟡 | 🟡 | 🟡 | ★ | ★ | ★ | ★★★★ | ★★★★ | ★★ |
| | F5. Healthy food policies in schools | ⊘ | • | • | 🟡 | ⊘ | • | ★ | ★★★★ | ★★★★ |
| | F6. Food-based dietary guidelines | 🟡 | ⊘ | ⊘ | ★ | ★ | ★ | ★★★★ | ★★★★ | ★★★★ |
| Physical activity | P1. Compulsory physical education in school curriculum | ★★ | ★★★★ | ★★ | ⊘ | 🟡 | • | ★★ | ★★★★ | ★ |
| Enforcement | E1. Enforcement of laws and regulations related to NCD risk factors | • | • | • | ⊘ | ⊘ | 🟡 | • | ★★ | ★★★★ |
| Health system response programs | H1. National guidelines for care of main NCDs | ★ | ★ | ★ | • | • | • | ★ | ★★ | ★★ |
| | H2. Essential drugs | 🟡 | • | • | 🟡 | • | • | ★★ | ★★★★ | ★★★★ |
| | H3. Smoking cessation | ⊘ | ★ | ★ | ⊘ | 🟡 | ★ | • | • | ★ |
| | H4. Marketing of breast milk substitutes | • | 🟡 | 🟡 | ⊘ | ⊘ | ⊘ | 🟡 | • | • |
| | H5. Baby friendly hospitals | 🟡 | • | ★★★★ | 🟡 | ⊘ | ⊘ | 🟡 | 🟡 | 🟡 |
| | H6. Maternity leave and breastfeeding | 🟡 | 🟡 | 🟡 | ⊘ | ⊘ | ⊘ | 🟡 | ★★★★ | 🟡 |
| Monitoring | M1. Population risk factor prevalence surveys - adults | ★ | ⊘ | ⊘ | ⊘ | ★★ | ★★ | ★★★★ | 🟡 | 🟡 |
| | M2. Population risk factor prevalence surveys - youth | • | • | ⊘ | ★ | ★ | ★★★★ | 🟡 | ★★★★ | 🟡 |
| | M3. Child growth monitoring | ★★★★ | ★★ | ★★ | 🟡 | ★★★★ | ★★★★ | • | • | • |
| | M4. Routine cause-specific mortality | 🟡 | • | ★★★★ | ★★ | ★★ | ★★ | ★★★★ | ★★★★ | ★★★★ |

Notes: ⊘ = intervention not present; 🟡 = intervention under development; • = intervention present; strength of action of intervention – low ★ medium ★★ high ★★★

Figure 2 (continued): Pacific MANA Dashboard Progress 2017–2018 vs. 2019–2020 vs. 2021–2022

| | | Solomon Islands | | | Tokelau | | | Tonga | | |
|---------------------------------|---|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 |
| Leadership & governance | L1. Multi-sectoral NCD taskforce | 🟡 | 🟡 | 🟡 | 🚫 | • | 🟡 | ★★★★ | ★★★★ | ★★★★ |
| | L2. National strategy addressing NCDs and risk factors | 🟡 | ★★★★ | ★★★★ | 🟡 | • | • | ★★★★ | ★★★★ | ★★★★ |
| | L3. Explicit NCD indicators and targets | 🟡 | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ | ★★★★ |
| Preventive policies | | | | | | | | | | |
| Tobacco | T1. Tobacco excise taxes | 🟡 | • | • | 🟡 | • | • | ★★★★ | ★★★★ | ★★★★ |
| | T2. Smoke-free environments | ★ | ★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ | ★★ |
| | T3. Tobacco health warnings | ★★ | ★★ | ★★★★ | 🚫 | 🟡 | 🚫 | ★★ | ★★ | ★★ |
| | T4. Tobacco advertising, promotion and sponsorship | • | • | ★★ | 🚫 | ★ | 🚫 | ★★ | ★★ | ★★ |
| | T5. Tobacco sales and licencing | ★★★★ | ★★★★ | ★★★★ | 🚫 | • | • | ★ | ★ | ★ |
| | T6. Tobacco industry interference | 🟡 | 🟡 | 🟡 | 🚫 | 🚫 | 🚫 | 🟡 | 🟡 | 🟡 |
| Alcohol | A1. Alcohol licencing to restrict sales | ★★★★ | ★★★★ | ★★★★ | ★★ | ★★ | ★★ | ★★★★ | ★★★★ | ★★★★ |
| | A2. Alcohol advertising | 🟡 | 🟡 | 🟡 | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🟡 |
| | A3. Alcohol taxation | ★★ | ★★ | ★★ | • | • | • | • | • | ★★★★ |
| | A4. Drink driving | ★★ | ★★ | ★★ | • | • | • | ★★ | ★★ | ★★ |
| Food | F1. Reducing salt consumption | • | ★ | ★ | 🟡 | 🟡 | 🟡 | 🚫 | ★ | ★ |
| | F2. Trans-fats | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🟡 | ★ |
| | F3. Unhealthy food marketing to children | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🟡 |
| | F4. Food fiscal policies | 🟡 | 🟡 | ★★ | ★★★★ | 🚫 | 🚫 | ★★★★ | ★★★★ | ★★★★ |
| | F5. Healthy food policies in schools | 🟡 | 🟡 | 🟡 | 🟡 | 🟡 | • | 🟡 | ★★★★ | ★★★★ |
| | F6. Food-based dietary guidelines | ★★★★ | ★★★★ | ★★★★ | 🟡 | 🟡 | 🟡 | ★★ | 🟡 | ★★★★ |
| Physical activity | P1. Compulsory physical education in school curriculum | ★★ | ★★ | ★★ | ★★ | ★★ | ★★★★ | ★ | • | • |
| Enforcement | E1. Enforcement of laws and regulations related to NCD risk factors | ★ | • | • | 🚫 | • | • | ★ | ★★★★ | ★★★★ |
| Health system response programs | H1. National guidelines for care of main NCDs | ★★★★ | ★★★★ | ★★★★ | ★★ | ★★ | ★★ | ★★★★ | ★★★★ | ★★★★ |
| | H2. Essential drugs | 🟡 | • | • | ★★★★ | ★★★★ | • | ★★★★ | ★★★★ | ★★★★ |
| | H3. Smoking cessation | ★★ | • | • | • | • | 🟡 | ★★★★ | ★★★★ | ★★★★ |
| | H4. Marketing of breast milk substitutes | • | • | • | 🟡 | 🟡 | 🚫 | 🟡 | 🟡 | 🟡 |
| | H5. Baby friendly hospitals | • | • | ★ | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 | 🚫 |
| | H6. Maternity leave and breastfeeding | • | • | 🟡 | 🚫 | 🟡 | 🟡 | 🟡 | 🟡 | • |
| Monitoring | M1. Population risk factor prevalence surveys - adults | ★★ | ★★ | 🟡 | ★★★★ | ★★★★ | 🟡 | ★★★★ | ★★★★ | ★★★★ |
| | M2. Population risk factor prevalence surveys - youth | 🟡 | 🟡 | 🚫 | ★★★★ | ★★★★ | 🟡 | ★★★★ | ★★★★ | ★★★★ |
| | M3. Child growth monitoring | • | • | • | ★ | ★ | ★ | 🟡 | ★ | ★ |
| | M4. Routine cause-specific mortality | 🟡 | 🟡 | ★ | • | • | ★ | ★★ | ★★ | ★★ |

Notes: 🚫 = intervention not present; 🟡 = intervention under development; • = intervention present; strength of action of intervention – low ★ medium ★★ high ★★★

Figure 2 (continued): Pacific MANA Dashboard Progress 2017–2018 vs. 2019–2020 vs. 2021–2022

| | | Tuvalu | | | Vanuatu | | | Wallis and Futuna | | |
|---------------------------------|---|---------|---------|---------|---------|---------|---------|-------------------|---------|---------|
| | | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 | 2017-18 | 2019-20 | 2021-22 |
| Leadership & governance | L1. Multi-sectoral NCD taskforce | ☆☆ | ☆☆ | ☆☆☆ | ● | ● | ● | ● | ● | ● |
| | L2. National strategy addressing NCDs and risk factors | ☆☆☆ | ☆☆☆ | ☆☆☆ | ☆☆☆ | ☆☆☆ | ☆☆☆ | ○ | ○ | ○ |
| | L3. Explicit NCD indicators and targets | ☆☆ | ☆☆ | ☆☆ | ☆☆☆ | ☆☆☆ | ☆☆☆ | ○ | ○ | ○ |
| Preventive policies | | | | | | | | | | |
| Tobacco | T1. Tobacco excise taxes | ☆☆ | ★ | ☆☆☆ | ★ | ★ | ☆☆ | ☆☆☆ | ☆☆☆ | ☆☆☆ |
| | T2. Smoke-free environments | ☆☆☆ | ☆☆ | ☆☆ | ☆☆☆ | ☆☆☆ | ● | ● | ● | ● |
| | T3. Tobacco health warnings | ★ | ● | ● | ☆☆☆ | ☆☆ | ☆☆ | ● | ● | ● |
| | T4. Tobacco advertising, promotion and sponsorship | ☆☆☆ | ☆☆ | ☆☆ | ☆☆ | ☆☆☆ | ★ | ☆☆☆ | ☆☆☆ | ☆☆☆ |
| | T5. Tobacco sales and licencing | ☆☆☆ | ☆☆☆ | ☆☆☆ | ☆☆☆ | ☆☆☆ | ☆☆ | ○ | ○ | ○ |
| | T6. Tobacco industry interference | ○ | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ |
| Alcohol | A1. Alcohol licencing to restrict sales | ☆☆☆ | ☆☆☆ | ☆☆☆ | ☆☆ | ☆☆ | ☆☆ | ☆☆ | ☆☆ | ☆☆ |
| | A2. Alcohol advertising | ● | ● | ● | ○ | ○ | ○ | ● | ● | ● |
| | A3. Alcohol taxation | ☆☆☆ | ☆☆ | ☆☆ | ● | ● | ● | ● | ● | ● |
| | A4. Drink driving | ★ | ★ | ★ | ● | ● | ● | ☆☆☆ | ☆☆ | ☆☆ |
| Food | F1. Reducing salt consumption | ● | ★ | ★ | ● | ● | ● | ○ | ○ | ○ |
| | F2. Trans-fats | ● | ★ | ★ | ○ | ○ | ○ | ○ | ○ | ○ |
| | F3. Unhealthy food marketing to children | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | F4. Food fiscal policies | ● | ● | ★ | ☆☆ | ☆☆ | ☆☆☆ | ★ | ★ | ★ |
| | F5. Healthy food policies in schools | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ |
| | F6. Food-based dietary guidelines | ● | ☆☆☆ | ☆☆☆ | ● | ● | ● | ○ | ○ | ○ |
| Physical activity | P1. Compulsory physical education in school curriculum | ● | ● | ★ | ● | ● | ● | ☆☆☆ | ☆☆☆ | ☆☆☆ |
| Enforcement | E1. Enforcement of laws and regulations related to NCD risk factors | ☆☆ | ☆☆ | ☆☆ | ● | ● | ● | ☆☆☆ | ☆☆☆ | ☆☆☆ |
| Health system response programs | H1. National guidelines for care of main NCDs | ☆☆ | ☆☆ | ☆☆☆ | ★ | ★ | ★ | ☆☆☆ | ☆☆☆ | ☆☆☆ |
| | H2. Essential drugs | ☆☆ | ☆☆ | ☆☆☆ | ● | ● | ● | ☆☆☆ | ☆☆☆ | ☆☆☆ |
| | H3. Smoking cessation | ● | ● | ● | ★ | ★ | ★ | ● | ● | ● |
| | H4. Marketing of breast milk substitutes | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | H5. Baby friendly hospitals | ○ | ○ | ○ | ● | ● | ● | ○ | ○ | ○ |
| | H6. Maternity leave and breastfeeding | ● | ● | ● | ● | ● | ● | ○ | ● | ● |
| Monitoring | M1. Population risk factor prevalence surveys - adults | ☆☆☆ | ☆☆☆ | ● | ● | ● | ● | ● | ☆☆ | ☆☆ |
| | M2. Population risk factor prevalence surveys - youth | ☆☆☆ | ☆☆ | ☆☆☆ | ☆☆☆ | ☆☆☆ | ★ | ☆☆☆ | ☆☆☆ | ☆☆☆ |
| | M3. Child growth monitoring | ☆☆ | ☆☆ | ☆☆ | ● | ● | ★ | ● | ● | ● |
| | M4. Routine cause-specific mortality | ☆☆☆ | ☆☆☆ | ☆☆☆ | ● | ● | ● | ○ | ● | ● |

Notes: ○ = intervention not present; ● = intervention under development; ★ = intervention present; strength of action of intervention – low ★ medium ☆☆ high ☆☆☆

2. DOMAIN 2

Environmental sustainability



2.1 Threats of climate change

The climate crisis is the most important threat to the lives and livelihoods of the people of the Pacific Islands. PICTs generate less than 0.03% of total greenhouse gas (GHG) emissions,⁷⁶ yet they are most severely impacted by the climate crisis.

The climate crisis has increased the frequency and intensity of severe weather events, such as tropical cyclones, causing considerable damage to crops and infrastructure. Water scarcity is an ongoing concern, even without considering the impact of the climate crisis. Because many communities in the Pacific Islands rely on rainwater catchments for water, water scarcity may further exacerbate emigration from the area. It also negatively impacts agricultural production; the effects are expected to be most severe for small communities growing their own crops. Increased ambient temperatures will also affect agricultural yields, which are expected to halve by 2050.⁷⁷

Rising sea levels, which result in saltwater intrusion and groundwater contamination, is an additional concern for coastal Pacific communities in low-lying atolls. The media narrative surrounding the threat of rising sea levels engulfing islands has gained considerable attention in the Pacific region. However, forecasts indicate that the actual impacts of sea level rise may not be as extreme as portrayed in media reports. A 2022 technical report by the US National Oceanic and Atmospheric Administration stated that sea levels are expected to rise between 0.2 and 2m by 2100,⁷⁸ whereas the Asian Development Bank estimates that the sea level rise is unlikely to exceed 1m by 2100 relative to the 1985–2005 baseline.⁷⁹ In the Pacific, the effects of rising sea levels are likely to affect different regions unevenly. Nevertheless, rising sea levels will exacerbate the hazards posed by climate change, such as increased storms, waves, temperatures, and precipitation, to infrastructure, freshwater supplies, agriculture, and habitats for threatened and endangered species.

Pollution of the Pacific Ocean has become an important additional concern. The people of the region have been careful stewards of the Pacific Ocean for decades, but commercialization of the region's fisheries and increased tourism have added environmental pressure. Eighty percent of pollution to the marine environment comes from the land in the form of discarded plastic bags, bottle caps, plastic water bottles, and Styrofoam cups.⁸⁰ Discarded fishing gear has become an additional threat to the natural environment. Marine debris and pollution are destructive to the habitat of many species and harmful to marine life. Pacific habitats and species are threatened by coastal development, overfishing, destructive fishing, ocean acidification, and climate change. Heavy metals and other contaminants can accumulate in seafood, making it harmful for humans to consume. Microplastics can be ingested by fish and other species that filter their food out of the water.

2.2 Impact of climate change on health and livelihoods

The burden of NCDs is compounded by the health impacts of the climate crisis; severe weather events, flooding, rising sea levels, and ocean warming and acidification negatively impact the broader social determinants of health. For instance, ocean warming and acidification result in coral bleaching and damage to fisheries, undermining the primary source of protein for Pacific populations, for whom 80% of dietary protein comes from fish and seafood. Pelagic (open-ocean) fish species are expected to move further east, away from population centers. Reduced fishing and agricultural yields will thereby force increased consumption of imported and highly processed food items, further increasing the NCD prevalence. Vector-borne diseases are also expected to spread beyond their current endemic areas. Dengue fever is now a constant threat to human health in the region, and waterborne diseases affecting children will increase further.⁸¹ This syndemic of NCDs and the health impacts of the climate crisis will severely compromise the development potential of the Pacific, incurring significant social and economic costs to individuals, their families, and nations.

In addition to physical health, mental health is also affected by climate change. There is considerable anxiety in Pacific communities about the climate crisis and the potential to be displaced by rising sea levels and severe weather events.⁸² Depression and post-traumatic stress disorder are also common following climate-induced disasters, which often cause damage to critical infrastructure such as essential services, food, and housing. It can also lead to various other psychological effects such as substance abuse and survivor's guilt. However, data on the burden of psychological distress (i.e., symptoms of depression and anxiety) and mental disorders are scarce, dated, and, in some cases, unreliable for the Pacific Islands region. In the WHO Western Pacific region, which includes PICTs and some East Asian countries, it is estimated that over 215 million people are living with some form of mental disorder.⁸³ The 2019 Global Burden of Disease report provides evidence of the significant increase in the burden of mental disorders between 1990 and 2019, with modelling predicting further increases in the coming decade. Although the increased disease burden due to mental disorders in this region is consistent with global trends, the role of climate change in mental health cannot be overlooked.⁸⁴

Moreover, responding to the impact of the climate crisis will likely reduce resources available for the prevention and control of NCDs and other health concerns. Climate change also damages healthcare infrastructure—many hospitals and health centers are located along coastlines and exposure to severe weather events can reduce their lifespans. A recent report commissioned by SPC indicated that most healthcare facilities in the region are vulnerable to the climate crisis and significant investment is required to modernize and future-proof these essential facilities.⁸⁵ (See Domain 4: Medicines and Technology for further details on the impact of climate change on healthcare infrastructure.)

The climate and environmental crisis also have critical economic dimensions. Fish from the Pacific region contribute to the diets of people in other parts of the world, with the Western and Central Pacific Ocean accounting for almost 60% of the global tuna catch; approximately two-thirds of which come from the waters of PIF member countries.⁸⁶ Tuna fishing is an important part of many Pacific economies, second only to tourism as a source of foreign earnings. Climate-induced changes to tuna populations have not only economic but also health consequences in the Pacific.

2.3 Climate crisis in RMI, Tonga, and Vanuatu

RMI, with its largest island spanning just 16 km² in land area and an average altitude of just over 2 m above sea level, is one of the world's most vulnerable nations to the climate crisis. RMI is severely impacted by coastline erosion, storm surges, and changing rainfall patterns. RMI is becoming more vulnerable to drought: the government declared states of disaster for prolonged, unseasonal droughts in 2013 and 2016.⁸⁷ RMI is also vulnerable to tropical storms, typhoons, and spring tides due to rising sea levels and global temperatures. As with other islands in the Pacific, the health impact of the climate crisis is felt acutely in RMI due to challenges with water and food security, with shortages of fresh fish driving people toward imported food items responsible for the burden of NCDs. Difficulties with access to clean water remains an important public health threat to children in RMI.

Tonga and Vanuatu are also experiencing a number of adverse weather events, a well-established consequence of climate change. Tonga was also severely impacted by a volcanic eruption and tsunami in early 2022, which resulted in some communities being relocated to other islands.

Vanuatu is also highly vulnerable to both weather-related and geophysical natural disasters due to its location in the South Pacific tropical cyclone basin and the Pacific Ring of Fire. Tropical cyclones, volcanic activity, and severe weather events regularly affect Vanuatu, with 40 natural disasters recorded between 1980 and 2020.⁸⁸ It is regularly listed as the most at-risk nation by the World Economic Forum Global Risk Report.⁸⁹ In March 2015, Category 5 Tropical Cyclone Pam struck 22 of Vanuatu's islands, causing economic losses estimated to total 64% of GDP. The storm damaged

95% of crops in affected areas, more than 70% of health facilities, and 50% of schools. Sixteen deaths were recorded. In 2020, Tropical Cyclone Harold caused an estimated US\$ 617 million (61% of GDP) in economic damage when Vanuatu was still rebuilding from the damage caused by Tropical Cyclone Pam. Apart from disrupting livelihoods, causing human suffering, and persistently harming human development—particularly for the poor and most vulnerable – disasters have immediate and long-term adverse impacts on macro-fiscal outcomes.⁹⁰

2.4 Policy efforts to address climate change in the Pacific

Facing the existential threat of climate change, the Pacific Islands have embarked on a concerted effort to address this pressing issue at national, regional, and global levels.

Regional cooperation has been instrumental in amplifying the voices and actions of PICTs on the global stage. The Niue Declaration on Climate Change,⁹¹ adopted in 2008 by PIF, expresses the deep concern of PICTs about the impacts of climate change and calls for urgent action by Forum members, development partners, and regional and global organizations to reduce emissions and support adaptation in the Pacific region. The declaration has played a crucial role in raising awareness of the vulnerabilities of PICTs due to climate change and advocated for increasing support. The Pacific Adaptation to Climate Change Project,⁹² taking place from 2009 to 2014, was the first and largest climate change adaptation initiative in the region, with 14 PICTs contributing.

More recently, the Pacific Islands Action Plan on Climate Change and Health was launched by the Pacific health leaders attending the World Health Assembly in May 2018. The plan's vision is that by 2030, all health systems in the Pacific will be resilient to climate variability and change. RMI, Tonga, and Vanuatu are members of the WHO Special Initiative on Climate Change and Health in SIDS, through which the WHO supports member states to implement this Action Plan.⁹³ The Cleaner Pacific 2025 strategy also provides a blueprint to improve waste management and pollution.⁹⁴

At the national level, several PICTs have established comprehensive policies and commitments to mitigate emissions, enhance adaptation measures, and foster resilience within their communities. Examples include Vanuatu's National Climate Change and Disaster Risk Reduction Policy (2015) and Palau's Climate Change Policy (2015). Notably, in 2015, RMI committed to reducing GHG emissions by 32% by 2025, marking it as the first PICT to make such a commitment. In 2018, RMI unveiled its 2050 Climate Strategy, outlining a path to achieve net-zero emissions and widespread renewable energy adoption.⁹⁵

However, Fiji is currently the only Pacific nation with a health plan in response to the climate crisis. In alignment with the Fiji National Action Plan, Fiji's Ministry of Health and Medical Services (MOHMS) developed the National Climate Change and Health Strategic Action Plan in 2016. The action plan outlines establishing a climate change and health unit within the MOHMS, identifying and monitoring vulnerable communities, increasing access to essential health products and services, and investing in climate-resilient infrastructure, among other actions.⁹⁶ In addition, the Strengthening Health Adaptation Project: Responding to Climate Change in Fiji (SHAPE) project (2019–2024) is designed to protect the health of Fijians from the adverse impacts of climate change. In a Western Pacific first, the WHO is supporting the Fijian MOHMS and completed a climate hazard and vulnerability assessment of 205 healthcare facilities to identify the most at-risk facilities to be prioritized for upgrades.⁹⁷ The 15th Pacific Health Ministers Meeting recommended taking the Fijian example to “inform country-level initiatives, starting by evaluating health care facility resilience.”⁹⁸ Several countries, including RMI, Tonga, and Vanuatu, are using the findings of their intra-action reviews to characterize and bolster their health systems and disaster preparedness.

At a global level, countries around the world are making greater strides to address climate change. The Paris Agreement (2015), which sought to limit global warming to “well below 2°C,” was heralded as a landmark achievement in international cooperation on climate change.⁹⁹ The Green Climate Fund,¹⁰⁰ established in 2010 as a principal result of the Paris Agreement, serves as a critical

mechanism for mobilizing climate finance to developing countries, enabling them to implement climate-resilient and low-emission development strategies.

Pacific leaders have also consistently lobbied for more decisive action by the world's main polluters to reduce harmful GHGs, seeking recognition for losses and damage to their communities as a matter of fairness and social justice. After years of advocacy, these concerns have recently gained recognition, with the UN Conference of the Parties in 2023 establishing a dedicated "Loss and Damage" fund for vulnerable countries hit hard by floods, droughts, and other climate disasters.¹⁰¹

2.5 Community efforts to adapt to climate change

Beyond the policy arena, many local communities in the Pacific Islands have undertaken efforts to adapt to the impacts of climate change. Coastal fishing communities, such as the Ahus in PNG, have started to introduce household gardens. Residents of Oneisomw in the Federated States of Micronesia have cleaned and rehabilitated traditional wells, established vegetation buffer strips, and installed concrete covers to reduce pollution. These community-driven initiatives showcase adaptive strategies addressing climate impacts while emphasizing the integration of traditional and modern practices for sustainable development. However, the implementation of these adaptation strategies faces various challenges, including the remoteness of some islands, a scarcity of expertise and capacity, resource and financial constraints, ineffective governance structures, and inadequate methods for measuring the effectiveness of adaptation measures.¹⁰²

2.6 Recommendations

RECOMMENDATION 2A

Develop policy responses to address the health impact of the climate crisis and secure environmental sustainability

In addition to the impacts of the climate crisis, all PICTs are increasingly exposed to various environmental hazards that threaten the health of the population in the region. These include unsafe water, poor sanitation, air pollution, habitat destruction, hazardous chemicals, and occupational hazards. RMI, Tonga, and Vanuatu should not only develop their own health plans in response to the climate crisis but also implement the Cleaner Pacific 2025 strategy. To this effect, PICTs will require financial support for adaptation and mitigation measures, skilled human resources, and support for local staff, as well as data management and information systems expertise, most of which are likely to come from external assistance.

RECOMMENDATION 2B

Improve mental health services, especially for disorders arising from climate change, following a comprehensive national mental health survey, where needed

Mental health and well-being have become a priority for PICTs, especially following several natural disasters and the ongoing challenges presented by the climate crisis. Pacific communities are concerned about the prospect of relocating their villages to higher ground and leaving their homes behind, though data availability is poor. Young people are concerned about identity and prospects for employment in nations where unemployment among young people approaches 65%. Supporting and building resilience among young people is critical.

3. DOMAIN 3
Workforce



3.1 Workforce shortages in PICTs

PICTs constantly face the challenge of ensuring an appropriate number of trained HCWs to sustainably meet current and future healthcare needs, which are fast moving and have limited data. This challenge is evolving rapidly, and data are often unreliable to assess the full extent of this issue. While Polynesia and Micronesia deal with chronic outmigration of HCWs, Melanesia faces shortages of HCWs due to insufficient training opportunities; HCW-to-population ratios are worse in Melanesian nations than in Polynesia and Micronesia. HCW shortages in the Pacific Islands also disproportionately affect rural and outer island communities, where recruiting and retaining HCWs pose significant challenges. Many small, remote communities on outer islands often experience extended periods without access to trained HCWs.

The reasons for these shortages are a complex mix of “push” and “pull” factors. “Push” factors relate to heavy workloads, little remuneration, challenging working conditions, and lack of professional development opportunities, especially if island systems do not recognize specific health specializations. “Pull” factors relate to higher rewards and remuneration, better working conditions, and greater opportunities for advancement abroad. For example, registered nurses from the Pacific Islands are regularly recruited to work as healthcare assistants in the aged care industry in Australia and New Zealand, with higher salaries than they can earn at home.¹⁰³

Several strategies have been designed for retaining HCWs within PICTs, with limited success. Efforts to bond students to governmental service following their training have failed to curb outmigration. The use of bonding also raises concerns about potential breaches of individual rights. PICTs have also discussed options for deploying different types of HCWs to work in primary healthcare settings. For instance, independent nurse practitioners have prescribing rights, enabling them to practice independently with support from medical officers in district, regional, or referral hospitals. In 2014, Tonga trained 20 “NCD nurses” to work at the community level, primarily with people living with one or more NCDs such as diabetes and heart diseases.¹⁰⁴

The lack of qualified staff and inability to retain them also hinders the availability of low-volume specialized services. Some of these services, particularly during health crises and natural disasters, are provided on the islands by visiting specialist medical teams from Australia and New Zealand, such as those from the Pasifika Medical Association (PMA). PMA, a network of allied health professionals based out of New Zealand, is generally more agile and responsive than Pacific Rim governments receiving formal requests from PICTs for assistance. Other services are provided off the islands, funded by ODA, insurance, or remittances. For example, the New Zealand Medical Treatment Scheme funds a small number of patients from several PICTs to receive treatment in New Zealand if care is unavailable on their home islands.¹⁰⁵ Patients in Tuvalu, Kiribati, and Nauru can also be referred to Fiji for selected services. Patients in some PICTs have referral options in more distant locations, such as India, Singapore, and Thailand. Telehealth options could help close the gaps in care availability in rural and remote parts of the Pacific; however, this has not been fully developed (see Domain 4: Medicines and Technology).

3.2 Workforce challenges in RMI, Tonga, and Vanuatu

As with other PICTs, RMI, Tonga, and Vanuatu struggle with chronic shortages of trained HCWs. The World Bank and WHO recorded that RMI had 2.35 HCWs per 1,000 population in 2020, 5.1 in Tonga in 2021, 1.5 in Vanuatu in 2019, and 2.4 in Fiji, one of the better resourced PICTs, in 2019,¹⁰⁶ most of which are below the threshold of 4.45 for achieving the UN Sustainable Development Goal of good health and well-being.

RMI is heavily reliant upon expatriate and foreign-trained workers, particularly in medicine and nursing. This is due to various factors, such as the outmigration of health professionals, especially to the US, failure of scholarship recipients to fulfill their bonding agreements, aging of the local

workforce, poor opportunities for continuing professional education and upskilling, lack of proper recruitment and retention plans, and an inferior compensation system. Although reliance on foreign workers meets the immediate needs and registration requirements usually ensure quality of care, this is not sustainable in the long term, especially in the absence of a clear policy to recruit international medical graduates.

Outmigration of trained HCWs is also a particular challenge for Tonga. Low salaries and challenging working conditions causes an outmigration of nearly half of the trained staff, primarily to Australia and New Zealand. Data from a 2006 census indicated that the number of Tongan-born doctors working in Australia and New Zealand approximately matched those in the domestic workforce, while the Tongan nursing workforce abroad exceeded that remaining in Tonga.¹⁰⁷ More recent studies on this issue are unavailable. Since establishing the Tonga Health Promotion Foundation and investment in the workforce, however, Tonga has reported better retention of trained HCWs given increased resources to improve compensation, working conditions, and professional development opportunities.

Vanuatu, along with PNG and the Solomon Islands, has among the lowest HCW-to-population ratios in the Pacific region. This is a consequence of Vanuatu's low expenditure on healthcare, hindering the training and retention of sufficient HCWs. In 2023, for example, Vanuatu's nursing school was closed due to financial and skill shortages. Currently, the number of local nursing graduates does not replace those retiring. Vanuatu urgently needs to train more HCWs and adopt measures to retain HCWs in the workforce.

Rigorous data to characterize and quantify the full extent of these issues (e.g., HCW distribution and outmigration) is not readily available.

3.3 Recommendations

RECOMMENDATION 3A

Consider a regional conference on measures to retain healthcare workers in the Pacific Region

Outmigration of HCWs out of the Pacific Islands is likely to continue as the demand for workers, especially in nursing, remains high in Pacific Rim countries where salaries and working conditions are better. Partners working in health in the region should consider establishing a pool of doctors that can circulate among PICTs, supported by professional development opportunities and better working conditions. This endeavor will entail coordinated efforts and financial commitments by all participating countries, streamlined registration requirements, and effective planning and management overseen by a credible organization. A regional conference to consider further challenges and solutions to address the workforce shortage is also recommended.

RECOMMENDATION 3B

Train and employ independent nurse practitioners and other HCWs to enhance primary care delivery

Leaders in the Pacific region should consider training and employing more independent nurse practitioners with prescribing rights as the main primary care providers, especially in outer islands and rural areas. These independent nurse practitioners can provide cost-effective basic care at the community level and in chronically underserved areas. This model has increased access to care in places like Fiji, where a framework for nurse practitioners has been in place since 1999.¹⁰⁸ Expanding the independent nurse practitioner role across the region will require a regulatory framework that defines the scope of work and ensures legal protection. In addition, other HCWs can be trained and placed in communities to care for people with chronic conditions and NCDs, similar to Tonga's NCD nursing program.

RECOMMENDATION 3C

Build on the successes of the COVID-19 response and train more staff in disease surveillance and outbreak response

Despite the effectiveness of PICTs' COVID-19 response, sustained efforts are crucial to enhance resilience in future crises. PICTs governments are encouraged to document key learnings from the pandemic, foster cross-sector and cross-border collaboration, and implement comprehensive training initiatives for emergency response.

RECOMMENDATION 3D

Increase investments in healthcare workforce education and training

The closure of Vanuatu's sole nursing school in 2023 due to financial constraints has created a pressing need for substantial interventions in healthcare workforce education and training. It is imperative that existing government funds be allocated to establish a new nursing school, or alternatively, new funds should be procured through collaborative efforts with development partners and international organizations. PICTs may also benefit from increasing the number of nursing training institutions.

4. DOMAIN 4
Medicine
and
technology



4.1 Infrastructure

The physical healthcare infrastructure in many PICTs is dated and fragile, with many facilities no longer deemed fit for purpose. The “build–neglect–rebuild” syndrome is common in the Pacific region, where facilities are built but poorly maintained, resulting in facilities with shortened lifespans that must be rebuilt. PICTs tend to rely on development partners for funding to build and rebuild healthcare facilities. The climate crisis exacerbates these existing issues (see Domain 2: Environmental Sustainability). Four of the PICTs have only one hospital for the entire country, and most others have only one hospital per island, atoll, or island chain, thereby increasing the vulnerability of the population to a loss of healthcare in the event of hospital unavailability.

Many healthcare facilities in the Pacific SIDS also do not have the necessary equipment, thereby limiting health systems’ ability to provide quality healthcare. Equipment is often old and poorly maintained. Donated equipment from charitable organizations in Pacific Rim countries provides much-needed support as government budgets do not have the capital to provide new equipment or support healthcare facilities.

Over the past decade, both Tonga and Vanuatu have experienced a significant decline in the stability of their healthcare infrastructure. Vanuatu grapples with shortages in surgical equipment and infrastructure, while Tonga faces challenges in maintaining its health facilities.¹⁰⁹ Tonga has an active facility modernization program, including a new hospital in Vavau. Given the data scarcity, this is another area that could benefit from increased research focus.

4.2 Digital technology

Mobile phone technology has had increasing penetration over the past two decades in many PICTs. However, many people are still unable to access the internet consistently or reliably.¹¹⁰ The “digital divide,” which is the result of a mix of affordability, safety and security, literacy, and infrastructure issues, especially affects people living in outer islands and rural communities.

Technology offers promising opportunities for telehealth in the region, thereby improving healthcare delivery and access for Pacific Islanders. Telehealth was a useful tool for remote consultations between HCWs and patients in the PICTs during the COVID-19 pandemic, when movement and in-person consultations were restricted. For example, the Pacific’s Telehealth COVID-19 Response Project supported by the UN provided virtual sexual and reproductive health and gender-based violence services.¹¹¹ However, telehealth options remain limited due to poor internet connectivity and limited digital literacy in the region.

Telehealth remains a high-potential option for some PICTs, and the COVID-19 pandemic has set the stage for its usage by promoting the use of digital tools and increasing dependence on the internet. Support from Pacific Rim countries and developmental partners is crucial to implement and maintain telemedicine and other digital medical tools. For example, in RMI and other US-affiliated PICTs, the Pacific Basin Telehealth Resource Centre (PBTRC) is one of the telehealth resource centers funded by the US Federal Office for the Advancement of Telehealth. The PBTRC assists healthcare organizations, networks, and providers in implementing cost-effective telehealth programs for rural areas and medically underserved populations. Limited telehealth programs are in use in Tonga and Vanuatu.

4.3 Medicines

Budgets for pharmaceuticals in PICTs are small and unable to sustain a consistent supply of medications for common conditions. Most PICTs are unable to fund adequate volumes and mixes of medicines, and patients often resort to sourcing medications from the internet or family members in Australia, New Zealand, or the US. There are no regulatory controls on medication

imports, fueling concerns about antimicrobial resistance in the region as antibiotics are used widely without prescription. Treatment of common NCDs such as diabetes and high blood pressure have been hampered by an inadequate and irregular supply of recommended (i.e., by the WHO as “best buys”)¹¹² cost-effective medications and interventions.

Addressing the lack of sufficient medicines relies heavily on regional collaboration and international support. Efforts to combine the purchasing power of PICTs through bulk purchasing arrangements have failed because members have failed to pay for their supplies on time due to financial constraints. Renewed efforts are underway to assist PICTs through medicine-buying agencies in Australia and New Zealand. In 2019, the New Zealand government announced that it will support Polynesian countries in exploring ways of reliably purchasing and managing essential medicines while providing US\$8.1 million over 5 years.¹¹³ UNICEF buys vaccines for routine childhood immunizations for several PICTs. This arrangement has been in place for many years and is widely regarded as being part of the success of immunization programs in the Pacific, whereas bulk purchasing must rely on the coordination of national funding within the region.

4.4 Data and health information systems

A fully functioning national health information system (HIS) can substantially help develop more resilient health systems in the Pacific. While establishing HISs has been a regional development priority for several years, most nations do not yet have well-functioning systems for data collection or management. Considerable data are routinely collected manually but require a skilled workforce to analyze and use for planning or management. Patient management systems and electronic medical records are already part of some health systems in PICTs, but they are typically introduced by clinicians and often disconnected from national HIS. A review of Vanuatu’s HIS found the following challenges that are typical of many PICTs:¹¹⁴

- **Human resourcing needs and HIS governance** must be resolved within the Ministry of Health to ensure the sustainability of human and technical resources.
- **Current data collection methods are overly complicated** and create a burden on clinicians. Community health data collection must be simplified by reducing the monthly HIS requirements and establishing a culture where that data is actively used in decision-making.
- **Health data must be comparable**, using the same definitions and methods for collection across settings. A set of national health information standards (including a health data dictionary, standards for information and communications technology, data analysis, and use) is required.

Tonga is widely regarded as having the most well-developed HIS, which has been made possible by support from the Asian Development Bank. This assistance since 2020 has aimed to foster a conducive environment for the use of digital health data and improve the quality and reliability of health statistics in Tonga. The project supports the government’s commitment to e-governance in the health sector by delivering essential public health services using a digital HIS, including digital patient records, that will enhance continuity in patient care and data-driven decisions. The project also supported the development of a gender-sensitive digital health strategy and work to review and amend legislation, policies, and regulations related to the health sector and the use of digital solutions. The digital HIS includes patient, facility, and workforce registries and reports data on births and deaths to the government’s population databases.

The HIS project is reported to have contributed to improvements in the health system in Tonga because it connects all health facilities and integrates previously disparate systems, including electronic medical records, birth, death, and cancer registries, and laboratory and logistics information systems. In contrast, although most births are registered in Vanuatu and RMI, recording of deaths and causes of death remains somewhat limited because many deaths occur outside health systems in remote communities. Many Pacific Island countries still use WHO estimations in

reporting their mortality data. Despite the strengths of Tonga's national HIS, the system is vulnerable to epidemics and natural disasters and the local workforce remains insufficient to implement and maintain the system.¹¹⁵

The Pacific Health Information Network (PHIN) was established in 2006 to provide a mechanism for networking, support, information sharing, and training for health information professionals in the region.¹¹⁶ PHIN is working to apply the lessons learned from Tonga's HIS in other PICTs. PHIN has identified the following priorities for PICTs:

- Build a more effective HIS workforce for the region.
- Complete HIS assessments to better understand the capability needed to improve data management.
- Develop an HIS roadmap that includes understanding the types of systems and appropriate technologies needed.
- Continue to improve birth and death registration, including data on causes of death, especially for NCDs.

4.5 Recommendations

RECOMMENDATION 4A

Update the physical healthcare infrastructure by incorporating sustainable practices

PICTs are encouraged to act on the findings of Natuzzi (2023), who argued that vulnerable Pacific Island hospitals must be regarded as critical infrastructure that should be updated.¹¹⁷ Modernization and future-proofing strategic facilities should include the use of renewable energy and improved waste disposal arrangements.

RECOMMENDATION 4B

Increase investments to ensure a stable supply of essential medicines, especially for NCDs

Increased investment in healthcare financing should include plans for the funding and supply of essential medicines consistently, especially for clinics in rural areas and outer islands. Priority should be given to recommended cost-effective medicines used to treat common conditions such as heart disease and diabetes.

RECOMMENDATION 4C

Execute a comprehensive upgrade of digital infrastructure in alignment with the priorities identified by the PHIN

Digitalization will benefit Pacific health systems in public health, healthcare delivery, and health governance. In accordance with the priorities outlined by the PHIN, projects to develop and integrate HIS can be implemented across the Pacific, including training and employing a HIS workforce, developing a HIS roadmap, and other relevant components.

RECOMMENDATION 4D

Enhance data collection and reporting mechanisms to guide evidence-based decision-making

Significant gaps in addressing healthcare challenges in the Pacific Islands are the limited availability of comprehensive and up-to-date data, and the application of that data in decision-making, policy development, and healthcare planning. Enhancing data collection and reporting includes improving

systems and infrastructure, standardizing data collection, promoting digitalization, and fostering collaboration to address this issue. A culture in which data is actively used to guide decision-making is also critical.

RECOMMENDATION 4E

Explore and implement telehealth solutions to enhance healthcare delivery within and between islands

Telehealth has the potential to address workforce shortages and infrastructure gaps, particularly in outer islands and remote communities. PICTs should prioritize the establishment of telehealth infrastructure, ensuring reliable internet connectivity and accessibility. Additionally, comprehensive training programs should be instituted to enhance the digital literacy of healthcare professionals and community members, facilitating the seamless adoption and utilization of telehealth services. Investing in telehealth options is urgent as PICTs develop national responses to pandemic threats and the climate crisis.

5. DOMAIN 5
**Service
delivery**



5.1 Access and cost of care

RMI, Tonga, and Vanuatu are all making good progress toward UHC despite financial, workforce, and logistical challenges. These island nations reported UHC service coverage index scores in 2021 of 59, 57, and 47, respectively, representing significant improvements from 2000.¹¹⁸ While progress is being made, there is still work to be done, as many people still do not receive the care they need in a timely manner.

Governments are the primary financiers and providers of healthcare services in the region. In RMI, basic health insurance is provided by the government to all citizens, enabling public healthcare services to be accessed for a small copayment. Private supplemental insurance is also available, providing better options for off-island care.¹¹⁹ Public healthcare services in Tonga are free to citizens, although some services (e.g., dental care) require a copayment at the point of care.¹²⁰ In Vanuatu, patients pay modest contributions for inpatient care and outpatient services in public facilities.¹²¹

The provision of healthcare services in PICTs poses significant challenges and high costs due to the presence of isolated and dispersed small communities across several outer islands and rural locations. In these locations, there are considerable obstacles in recruiting and retaining enough HCWs to deliver care.

5.2 Provision of care

Healthcare systems in RMI, Tonga, and Vanuatu are built around primary health and public health services delivered in healthcare centers, district or regional hospitals, and referral hospitals located in each respective capital. RMI has two major hospitals in the urban Ebeye and Majuro atolls, which provide primary, secondary, and some tertiary care, as well as approximately 60 public health centers and clinics in surrounding islands.¹²² As of 2019, Tonga has 1 national referral hospital, 3 community hospitals, 14 health centers, and 34 reproductive and child health clinics, with approximately 90% of health services provided at hospitals.¹²³ Vanuatu has five public hospitals (one in each province) and one private hospital, as well as several dozen health centers and a few hundred aid posts in outer islands.¹²⁴ Data on the number of hospital beds (i.e., hospital beds per 1,000 people) have been sparse and unreliable; the most recent World Bank data (2008–2020) indicates values of 1.7–2.7.¹²⁵

While most people in PICTs use the available public health system, a small private healthcare sector is present in some islands. However, the high cost of care means that only those with the financial means or insurance can access these services. Prospects for increased private sector involvement are limited given the funding, insurance, and delivery models operating on these islands. Concerns about the quality of care of public health services often drive residents to private providers. However, data and information on the quality of healthcare in most PICTs remains limited and warrants further research.

Low-volume, highly specialized health services, such as kidney dialysis and cardiology services, are not routinely available and often rely on periodic visiting medical specialist teams from Pacific Rim nations, such as those from the PMA. Such visits were suspended during the COVID-19 pandemic, raising concerns about sustainable healthcare delivery going forward. Residents with the financial means can also be referred for healthcare in Pacific Rim nations, with costs covered by remittances from the PICTs diaspora or through private insurance coverage. New Zealand also supports the treatment of Tongan patients in its facilities when local treatment is unavailable.

5.3 Recommendation

RECOMMENDATION 5A

Accelerate the implementation of UHC

The challenges of service delivery in Pacific health systems are closely related to challenges in the workforce, essential medicines, medical infrastructure and technology, and financing. Limited diagnostic laboratory and radiology capacity can also restrict what services can be offered locally. These interrelated challenges require a commitment to implementing UHC to enhance the resilience and sustainability of health systems in the region, thereby improving service delivery. RMI, Tonga, and Vanuatu are committed to UHC, with a focus on primary healthcare and public health. The UHC strategy should incorporate regional and global commitments by RMI, Tonga, and Vanuatu through the WHO's UHC Partnership to achieving NCD targets and mental health and well-being.

6. DOMAIN 6
Financing



6.1 Spending on healthcare

Many PICTs allocate less than 5% of their GDP to healthcare, which is much lower than the global average of 10.89% of GDP in 2020. In 2020, the health expenditure (% of GDP) in Vanuatu was 3.97%, a notable increase from 2.76% in 2017, though still among the lowest in the Pacific region. That same year, Tonga's health expenditure was 5.32% of GDP.¹²⁶ The reason for such low spending on healthcare is largely the result of tight budgets, reliant on foreign aid, with limited capacity for expansion. PICT economies are small, and there is little prospect of increasing allocation to health from national budgets.

While there is no official threshold, it is generally regarded that a health expenditure of less than 5% of GDP severely limits the ability of nations to provide basic health services, such as routine immunization and supervision of births by trained attendants.¹²⁷ This is especially evident in Vanuatu, where low investments in the healthcare sector have resulted in the inability to train and retain HCWs. As such, greater investment in healthcare is required within Tonga and Vanuatu to ensure their capacity to deliver essential health services.

In contrast, in 2020, RMI spent 13.01% of its GDP¹²⁸ on healthcare, among the highest in the region, but health outcomes are comparable to other PICTs that spend less. The high cost of healthcare in RMI partly reflects healthcare funding and provision akin to that of the US. In particular, offshore referrals to Hawaii and the mainland US for conditions not able to be treated locally are expensive. RMI may benefit from a reevaluation of existing healthcare investments.

6.2 Sources of healthcare funds

As described in the "Background Information" section of this report, a significant share of the funds available to the governments and residents of PICTs come from ODA and other foreign aid and remittances from the diaspora. Conversely, a relatively restricted share of funds comes from internal sources such as taxes on revenue or income, due to residents' dependence on subsistence activities for livelihood and small economies.

ODA is mainly applied to the training of HCWs, strengthening health systems and the provision of specialist services offshore or by visiting specialist teams in Tonga and Vanuatu. For example, Australia is the largest funder and supporter of healthcare delivery in Vanuatu, providing approximately AUD 5 million (US\$ 3.2 million) annually in bilateral support.¹²⁹

Moreover, the US provides more than US\$ 80 million in assistance every year to RMI to promote economic advancement and self-sufficiency across sectors. The 20-year funding agreement under the current COFA ends in December 2023, another 20-year agreement worth US\$ 2.3 billion was signed in October 2023.¹³⁰ Remittances are also sent by overseas diaspora to families back in the PICTs to finance out-of-pocket health expenditures. Given the predominantly external nature of these funding mechanisms, ensuring the long-term financial sustainability of healthcare systems in these regions becomes a critical concern.

During the COVID-19 pandemic, significant additional funding was provided to PICTs by development partners and international organizations, including the WHO and Gavi. These resources were directed at pandemic preparedness, diagnostic tests, and vaccine supply.¹³¹ Meanwhile, other routine services were canceled or postponed to free up resources.

While donors aim to address local priorities, achieving a truly coordinated approach to development assistance is often challenging due to variations in priorities and misaligned timelines and reporting requirements.

6.3 Allocation of healthcare funds

In principle, healthcare delivery in PICTs is strongly focused on primary healthcare and public health. Despite this orientation, much of the healthcare budgets are allocated to curative and treatment services. Some services such as dental care and mental health are not well funded, and patients are often required to pay for these services at the point of care. People with mental health disorders often miss out completely and are instead cared for within the wider family and community networks.

6.4 Recommendations

The most important and urgent recommendation for Tonga and Vanuatu, and other PICTs with low expenditure on health, is to secure increased investment in health. RMI, where health expenditure as a portion of GDP is high, should prioritize the effective allocation of its existing healthcare investments. As such, the following tactical recommendations are provided:

RECOMMENDATION 6A

Explore and evaluate alternative healthcare financing models, such as social insurance

The governments of Tonga and Vanuatu primarily fund their public healthcare services through local taxes and ODA, offering these services to residents mostly free of charge, with occasional modest copayments. As this funding model may not be sustainable in the long term, these countries should explore alternative financing models, such as social insurance. The Republic of Palau's Healthcare Fund (HCF) is one model that can be considered. The HCF consists of two components: an individual Medical Savings Account funded by mandatory deductions on earned income and an employer-funded National Health Insurance. In 2021, one decade after its establishment, the HCF has been able to insure 94% of the Palau population, amassing US\$ 17.8 million in invested assets along with US\$ 3.1 million in operational funds.¹³² In adopting this model to other PICTs, careful consideration should be given to the fact that most individuals in the Pacific islands earn a subsistence living as mandatory contributions and deductions are determined.

RECOMMENDATION 6B

Examine different approaches to allocate and utilize ODA for healthcare

The allocation and utilization of ODA for health can take various forms, including both government-directed and alternative pathways, such as routing ODA through nongovernmental organizations (NGOs). These alternative approaches can influence and guide resource allocation priorities within the healthcare sector. By conducting a comprehensive examination of these diverse methods, PICTs can identify the most effective and efficient means of allocating and utilizing ODA to address healthcare challenges, promote health equity, and optimize the overall impact of these resources.

RECOMMENDATION 6C

Assess alternative internal sources of revenue, such as increased taxes on unhealthy consumer products

Implementing taxes on tobacco, alcohol, SSBs, and other unhealthy consumer products can be instrumental in generating additional funds while promoting healthy living. These dedicated taxes can provide a stable source of income that can be allocated to essential public services, thus reducing reliance on external aid and promoting fiscal autonomy. The Tonga Health Promotion Foundation is a good example of a health promotion entity funded in part from taxes on tobacco, alcohol, and unhealthy food items.

RECOMMENDATION 6D

Engage in proactive negotiations on ODA and foreign aid contracts for improved sustainability

The governments of the Pacific Islands heavily depend on ODA and foreign aid to support vital sectors, including healthcare. However, the expiration of agreements (e.g., COFAs) and the social, economic, and political issues involved in negotiating new ones, pose a significant threat to sustainable funding. In light of this, it is imperative for these governments to explore strategies for bolstering the long-term viability of aid. One viable approach is to engage in negotiations aimed at securing more extended, more predictable aid agreements, rather than project-based financing, that provide stability and ensure the continuous provision of essential services.

RECOMMENDATION 6E

Conduct a comprehensive review of the current healthcare expenditure and financing model to identify inefficiencies and potential areas for optimization

RMI may benefit from a review of the healthcare expenditure and financing model given the high proportion of GDP spent on health, with similar health outcomes to other PICTs that spend less. Such an assessment will enable the identification of opportunities for streamlining expenditure, enhancing cost-effectiveness, and ultimately improving the overall efficiency of the healthcare system. A review of offshore referrals is recommended to evaluate cost-benefit and explore alternative management options.

7. DOMAIN 7

Governance



7.1 Leadership and governance structures

7.1.1 Pacific Islands regional level

The SPC Public Health Division oversees regional health matters. The organization convenes the Heads of Health meeting annually to debate and agree on regional health priorities and policies. Once agreed, these policies are referred to the WHO/SPC Pacific Health Ministers Meeting held every 2 years. Ministers of Health of PICTs can also advance regional issues to the World Health Organization (WHO) at the Regional Committee of WHO for the Western Pacific or the World Health Assembly.

7.1.2 National level

National healthcare governance is similar across RMI, Tonga, and Vanuatu, reflecting broader similarities in political systems. Typically, a Minister of Health is accountable for funding allocation, service delivery oversight, and policy formulation within the healthcare sector. However, these ministers are often political appointees and lack the healthcare knowledge and experience to govern complex health systems. Furthermore, the typically short political cycles, lasting just 3–4 years, hinder longer-term governance and efforts to address medium and long-term health system challenges, such as workforce shortages. Pacific countries also continually remain under siege responding to outbreaks and climate-related events such that long-term investments in systems are often not able to be prioritized.

However, there are exceptions to this pattern. Take, for instance, Tonga, which boasts an excellent track record of good health governance, leadership, and management of the health system. Most of its recent health ministers have had medical or nursing training and served more than one term of government. They have also been influential in providing advice and support at regional and global levels. On the other hand, RMI and Vanuatu have had frequent turnover of health ministers, as well as management-level turnover in the case of Vanuatu. Such frequent turnover of key leadership roles does not provide the political support or stability that is foundational for healthcare management.

Ministers of Health are supported by a permanent head of the health service who is responsible for providing advice to the Ministry and for leading and managing the health service. These individuals are public servants, adhering to local public service regulations, and are responsible for personnel matters, including training, recruitment, and retention in healthcare.

7.1.3 Local level

Some, but few, PICTs have additional governance arrangements at the village and community level. Regional and district hospitals and health services often have a Health Committee that supports the facility and staff with additional fundraising for local health services. In some PICTs, churches are also involved in healthcare delivery, which is typically self-regulating. Moreover, most islands have a small private healthcare sector and have the capacity to refer patients to metropolitan countries in the Pacific Rim, often funded through development assistance, insurance, or fundraising by families.

7.2 Governance priorities in healthcare delivery

Specific priorities guide the actions and strategies of RMI, Vanuatu, and Tonga on healthcare delivery.

RMI: according to the National Strategic Plan 2020–2030, the key healthcare goal is to enable “healthy lives and well-being for all ages” based on the theme of “Kumit Ejmour,” where health is a shared responsibility. This includes strengthening responses to NCDs, improving maternal and child

health, enhancing resilience against communicable diseases and health emergencies, optimizing resource management, expanding healthcare infrastructure, bolstering services in outer islands, and addressing the health impacts of climate change.¹³³

Vanuatu: a comprehensive approach to healthcare is outlined through two key strategic documents: the Vanuatu Health Sector Strategy 2021–2030 (VHSS 2021–2030) and the WHO Vanuatu Country Cooperation Strategy 2018–2022. The former outlines six key health service delivery goals, including ensuring all Vanuatu people can receive healthcare services, restoring public trust in the health system, redesigning the health system to be more resilient to health shocks, promoting healthy lifestyles and healthcare-seeking behavior to enhance population health, strengthening health sector management and accountability, and expanding collaboration and partnerships to meet healthcare needs.¹³⁴

Tonga: as laid out in its latest National Health Strategic Plan 2015–2020, Tonga’s overall mission is “to improve the health of the nation by providing quality care through the promotion of good health, reducing morbidity, disability, and premature (death) mortality.”¹³⁵ To achieve these goals, the Ministry of Health developed a three-year Corporate Plan, the latest being from 2019–2020 to 2021–2022, prioritizing areas for health system improvement and addressing critical service delivery gaps.¹³⁶ A major focus in this plan is on the reduction in the prevalence of NCD risk factors, including tobacco use and obesity, and an increase in the budget for preventive healthcare. Australia has provided ongoing support to implement the Corporate Plan through the Tonga Health Systems Support Program since 2009. Tonga is currently developing an updated National Health Strategic Plan.

7.3 Health planning and implementation

In general, the priorities of national and local strategic health plans are appropriate based on local trends and disease burdens, but resource constraints and capacity limitations, and other governance challenges hinder their effectiveness.

One such governance challenge is that Ministries often lack prioritization of policy development skills, and numerous PICT governments lack proficient policy personnel. Consequently, Ministries tend to respond to challenges reactively, lacking clear and structured policies. This issue is partially attributed to funding constraints, but it also signifies a failure to base decisions on rational analysis, data, and evidence. The need for robust policy development is an urgent priority for many Ministries of Health.

Moreover, addressing the socioeconomic and commercial determinants of health, straddling several sectors and public, private, and civil society, poses a formidable challenge. For example, the commercial determinants that drive the rising incidence of NCDs, such as the advertisement and promotion of unhealthy products, often fall between different Ministerial portfolios. The lack of clear accountability for achieving agreed-upon NCD targets obscures the responsibility for fulfilling these commitments, especially as Health Ministers change with political cycles.

Additionally, development partners, primarily driven by their own health priorities and interests, sometimes inadvertently promote repetitive policies and plans that suffer from insufficient execution. The emphasis on transparency and accountability in the use of public funds can also lead to a situation where the extensive reporting requirements detract from the efficient delivery of essential services. The nature of ODA often leads to priorities changing before projects can be completed.

Adding complexity to the healthcare landscape in the Pacific region are political systems strongly influenced by Christian religious values. Consequently, certain policy issues, such as same-sex marriage and homosexuality, remain unresolved. This has implications for sexual and reproductive health, such as bans on the use of contraception.

7.4 Governance in a health crisis

Despite resource constraints and skill shortages, PICTs are generally regarded to have managed the COVID-19 pandemic well with very low case numbers and deaths (see Domain 1: Population Health). The success of the COVID-19 response in the Pacific region was attributed to early and aggressive adoption of public health measures, strong national political leadership, and support from development partners and international organizations.

An important part of the Pacific response was the leadership provided by the PIF. Early in the pandemic, PIF leaders adopted the Pacific Humanitarian Pathway on COVID-19 (PHP-C) to expedite assistance and cooperation between PICTs. The PHP-C provided regional leadership and coordination to support the delivery of medical and humanitarian assistance from regional and international organizations in a timely manner.¹³⁷ The PHP-C was widely regarded as a critical part of the Pacific response to COVID-19.

SPC also provided in-country training on COVID-19 case identification, contact tracing, case investigation, outbreak management, in-country assessment, training on infection control and coordinating the procurement process for point-of-care tests. SPC also played a critical role in leading the regional response and reporting on progress. The Pacific Public Health Surveillance Network further provided a range of services to prevent and respond to epidemics, including coordination of laboratory services, surveillance systems, infection control, alert and communication, knowledge exchange and capacity building.

The WHO also provided significant support to PICTs with the Council of Regional Organizations in the Pacific representation from SPC and PIF through the Joint Incident Management Team process. This process helped address critical supply needs for countries including the procurement of laboratory packaging and personal protective equipment and providing technical advice on a range of public health measures. It was generally regarded as an effective way of coordinating support, sharing information, and reporting to stakeholders.

Once vaccines were developed, although initial concerns arose about equitable distribution to low-income, developing nations, many PICTs received vaccine support from development partners, especially Australia, New Zealand, and China, and global health organizations, including the COVAX Facility. Eventually, high vaccination coverage and public health measures resulted in lower number of cases and death rates across most PICTs (see Domain 1: Population Health).

Australia and New Zealand provided financial support and technical expertise including deployment of clinical teams to several PICTs. In total, Australia provided more than AUD 304.7 million (US\$ 194 million) to PICTs and Timor Leste.¹³⁸ A review commissioned by the Australian government confirmed that this support was relevant and effective.¹³⁹

7.5 Recommendations

RECOMMENDATION 7A

Explore community engagement in collaborative governance platforms to better meet community health needs, leverage local resources, and garner community support for health systems transformation

Given the isolated nature of many communities in the Pacific, community health resources are vital to ensuring accessible and culturally appropriate healthcare services. To address this, community engagement in collaborative governance platforms can be considered. These platforms would facilitate the active participation of local leaders, healthcare providers, and community members in decision-making processes related to healthcare delivery and health systems transformation.

RECOMMENDATION 7B

Train and recruit health policy advisers to enhance local expertise and foster informed decision-making

Recognizing the unique healthcare challenges faced by many Pacific Island communities, there is a pressing need to strengthen the capacity for effective health policy development and implementation. It is recommended to invest in training programs and talent for health policy, ensuring that health policies are grounded in rational analysis and evidence, and aligned with the specific needs of the diverse island populations.

8. Reflections and conclusions



Although relatively few resources are dedicated to health, PICTs have achieved good health outcomes, such as improving life expectancy, high coverage of childhood immunizations, and low case and mortality rates of COVID-19. PICTs benefit substantially from resourcing and expertise provided by development partners, regional and international organizations, and diasporas in Pacific Rim countries. Although health systems in many PICTs remain not fully fit for purpose, their governments remain committed to strengthening primary care and achieving UHC. Regional coordination and leadership also enable the region to advocate for common needs in the international arena. Moving forward, the challenges facing the Pacific Islands across health, the environment, and economy will become more urgent and require enhanced coordination and collaboration from the local to the global level.

Critical gaps in Pacific health systems

Two critical gaps in Pacific health systems – underinvestment in health and the need for more proactive solutions to mitigate the health impacts of the climate crisis – reverberate across domains in the PHSSR research framework.

Governments are the dominant funder and provider of healthcare services (Domains 6 and 7), but the low share of GDP spent on health and the lack of available financial resources means that most PICTs are unable to consistently provide the full range of care (Domain 5). Financial constraints have also led to chronic shortages of trained HCWs (Domain 3), medicines and supplies, and necessary infrastructure and equipment (Domain 4). As a result, service delivery can be unreliable, especially for people living in outer islands and rural areas away from population centers (Domain 5). Low-volume, high-cost services are usually unavailable unless they are provided by visiting specialist teams or patients receive treatment offshore funded by development partners, insurance companies, or family members. Moreover, investment in data management and health information systems has not resulted in anticipated improvements. Much data remains uncollected and that which is collected is often unused, reflecting challenges in both technological capacity (Domain 4) and governance (Domain 7).

The COVID-19 pandemic has also highlighted the vulnerability of Pacific health systems and the urgent need for more investment in health to build resilience across all domains outlined in this report (Domain 1). Despite overall low COVID-19 case and mortality rates, low investments resulted in delays in routine healthcare services to redirect resources for COVID-19 preparedness. This often meant that people living with NCDs such as diabetes and heart disease could not obtain medications or consult with their healthcare providers. Significant external assistance was required to strengthen local diagnostic services and obtain sufficient COVID-19 vaccines.

The impact of the climate crisis has also made the need to build resilient health systems more urgent (Domain 2). Healthcare facilities in many PICTs are located in coastal areas and vulnerable to adverse weather events and sea level rise resulting from climate change. These buildings are old and often overcrowded with patients. Ocean warming and acidification as well as shifting precipitation patterns are destabilizing fishery and agricultural systems. In response, diets traditionally consisting of local seafood and crops are changing to include more imported, processed foods responsible for the increasing incidence of obesity, diabetes, and other NCDs that the health systems are ill equipped to respond to because of inadequate funding and typically, most funds are allocated to curative care (Domains 1, 5, and 6). The current model of care delivery is not well aligned to supporting the care of people with chronic illnesses such as diabetes.

What's next: building resilience from local to global

Challenges to the health systems of the Pacific Islands are connected to the broader governance and financing challenges of the region. Achieving sustainability and resilience in the Pacific will depend on national, regional, and global commitments across health, economic, and ecological systems.

For national governments, meeting NCD targets (Domain 1) will involve not only legislative reform to promote public and preventive health but also increased investments to strengthen the financial base of healthcare (Domain 6) and rebuild, finance, and maintain critical health infrastructure (Domain 4), run by a healthcare workforce that can consistently deliver primary health services and health promotion initiatives (Domain 3) within a data governance system that makes best use of collected information. Accelerating the implementation of UHC to enhance health service delivery also requires innovative financing, staffing, and administrative models to create health systems that are both sustainable and accessible amid the “syndemic” of NCDs, injuries and accidents, and climate change.

At the regional level, coordination and advocacy should expand to enhance talent circulation (Domain 3) and accessibility to key medicines and technologies (Domain 4). Collaborative initiatives and collective action within the region are needed to address the priority areas of improving physical and digital infrastructure (Domain 4), addressing mental health and well-being among young people affected by unemployment and climate change, and enhancing systems for regional surveillance and response to vector- and waterborne diseases (Domain 2). The Pacific Community is providing the leadership and coordination needed in the health sector across the Pacific region supported by WHO and related UN agencies.

Finally, at the global level, adherence to international targets to mitigate climate change will profoundly affect PICTs, which contribute the least to worldwide carbon emissions but are the first to feel the effects of climate change on human health and livelihoods. Continued and consistent support from global partners across health, economic development, and environmental sustainability will be crucial for a resilient Pacific, as well as innovative approaches to allocate and utilize ODA for health goals (Domain 6).

The challenges facing the Pacific region are persistent and transcend national boundaries. Addressing them, from economic development to climate change response, will have effects on the health and livelihoods of local communities in the region. Through collaboration and commitment to innovative change from the local to the global level, the region can take steps toward building a more resilient Pacific.

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