

Disaster Risk Reduction in the Federated States of Micronesia

Status Report



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 **UNDRR**
UN Office for Disaster Risk Reduction

Disaster Risk Reduction in the Federated States of Micronesia

Status Report

Status Report 2022

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About this report

The disaster risk reduction status report provides a snapshot of the state of disaster risk reduction in the Federated States of Micronesia under four priorities of the Sendai Framework for Disaster Risk Reduction 2015-2030. It also highlights progress and challenges associated with ensuring coherence with key global frameworks and provides recommendations for strengthening disaster risk management governance by government institutions and stakeholders at national and local levels.

This report was prepared by the United Nations Office for Disaster Risk Reduction (UNDRR) with support from the Asian Disaster Preparedness Center (ADPC) and Tonkin + Taylor through country consultations and a desk review of key documents, including legal instruments and disaster risk reduction frameworks, policies, strategies, and plans.

This report was made possible with the support of the Government of Ireland, the Ministry of Foreign Affairs and Trade, and the Government of Australia, the Department of Foreign Affairs and Trade.

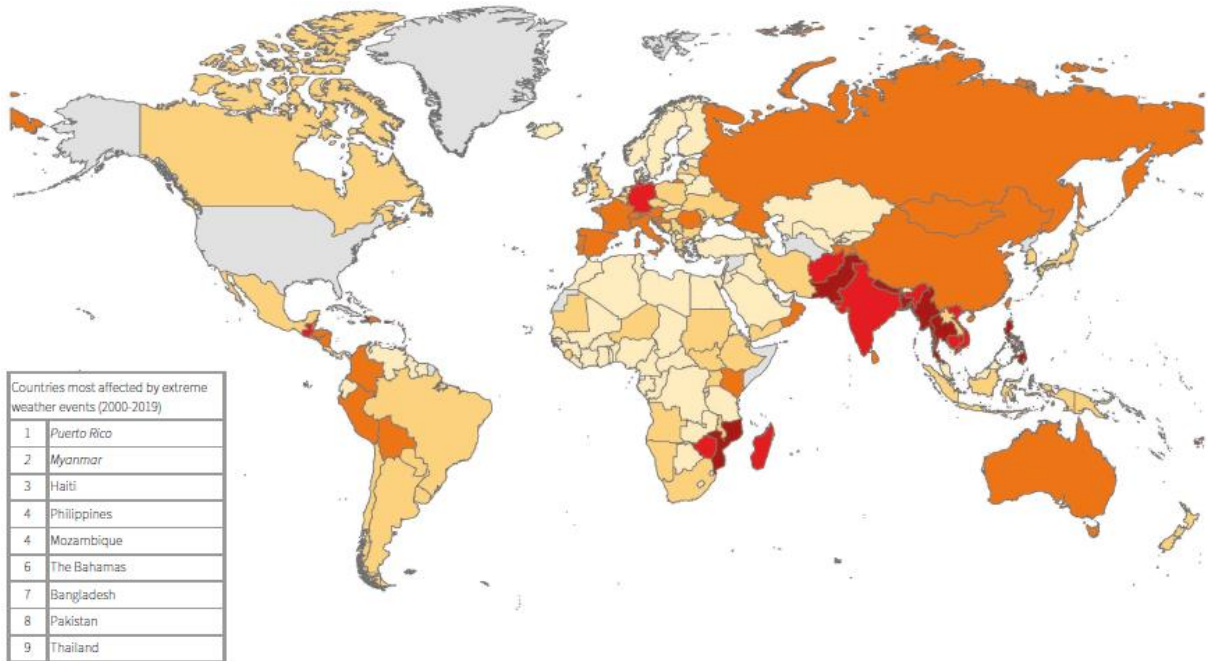
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Country Brief



Italics: Countries where more than 90% of the losses or deaths occurred in one year or event.

(GermanWatch, 2021)

POPULATION 2020	
Total Population	115 021
Urban Population	26 378 (22.9%)
Population Density per Km ²	164
ECONOMIC INDICATORS	
Gross Domestic Product in Current \$US	410.08 million
GDP Per Capita (\$US)	3 565
GDP Growth (Annual %)	-1.7
HUMAN DEVELOPMENT	
Human Development Index	0.620
HDI Rank	136
Income Level Category	Lower-Middle Income

(World Bank, 2022)

(UNDP, 2020)

Climate Risk Index

Rank 40 / Score of 55.67*

INFORM Risk Index

Rank 95 / Medium Risk**

World Risk Index

Rank 81 / Medium***

* Climate Risk Index 2000-2019 analyses how countries have been affected by weather-related losses between 2000-2019. (GermanWatch, 2021)

** INFORM risk index is a global tool that measures the risk of humanitarian crises and disasters based on three dimensions: hazard & exposure, vulnerability, and lack of coping capacity. (INFORM, 2021)

***World Risk Index 2021 assesses the disaster risk for 181 countries based on Exposure, Vulnerability, Susceptibility, Lack of coping capacities, and Lack of adaptive capacities. (Bündnis Entwicklung Hilft, 2021)

1. Introduction

Federated States of Micronesia (FSM) consists of 647 small islands in the Western Pacific. It comprises four semi-autonomous states: Yap, Chuuk, Pohnpei and Kosrae. FSM has 273.5 square miles (around 708 sq km) of land area, with a vast exclusive economic zone (EEZ) covering more than one million square miles (2.5 million sq km). The land area total is made up of Yap State: 46 square miles (119 sq km), Chuuk State: 49 square miles (126 sq km), Pohnpei State: 132 square miles (341 sq km) and Kosrae State: 42 square miles (108 sq km). All states except Kosrae have inhabited outer-island atolls. Pohnpei State, the most significant state, comprises one sizeable volcanic island and six inhabited atolls. [FSM Statistics Office, 2020] [Federated States of Micronesia Department of Finance and Administration, 2017].

The nation's economy depends heavily on subsistence farming and fishing. Agricultural practices remain small-scale – crops grown in the country are tree crops (breadfruit, coconut, and citrus), root crops (taro and yam), pepper, cloves, and tobacco. Fisheries predominantly rely on traditional fishing methods. Copra (dried coconut meat) is the main export, and extra bananas, coconuts, and taro are sold to neighbouring countries. The basic economic unit is the household, and it often includes extended families. Yap state has the most robust economy and highest standard of living. The tradition of sharing, communal labour and giving gifts to tribal leaders remains. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019].

Two-thirds of the labour force are government employees, and the Wholesale and Retail Trade industry is also dominant. Around 22% of the population is unemployed. FSM is among the 45 poorest countries globally, and more than 26% of the population lives below the poverty line. Women's labour force participation rate was only 50.1% in 2000, compared with 67.2% for men. On average, women received less than half the wage of men (4,514 vs 9,286). [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019] [The Pacific Community, 2012] [Federated States of Micronesia].

FSM is located in the Pacific Ring of Fire and is prone to disasters. Common threats and hazards include typhoons, landslides, droughts, earthquakes, and sea-level rise. Frequent typhoons destroy houses, plantations, and environmental assets and claim people's lives and livestock. Landslides are triggered by natural hazards such as earthquakes, floods, volcanic eruptions, or typhoons and sometimes bring more damage and life loss than the primary event. Recently, FSM has experienced moderate to severe drought due to the El Niño phenomenon. The country experienced a series of earthquakes in 2017. Climate change is causing sea-level rise, and the population is already experiencing shortages of drinking water and uncertainty over food security. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019].

Though the country considers it essential to protect ecosystems from natural hazards, overexploitation of biological resources, habitat loss and degeneration, climate change impacts, pollution, the spread of alien invasive species, and infrastructure development threaten ecosystems and biodiversity. [Micronesia Conservation Trust, 2014].

In the Strategic Development Plan (2004-2023), the national strategy was summarised around the four elements: Stability and Security, Improved Enabling Environment for Economic Growth, Improved Education and Health Status, and Assured Self-Reliance and Sustainability. The Stability and Security pillar looks to maintain economic assistance at levels that support macroeconomic stability. The Improved Enabling Environment pillar would be achieved through the continued national commitment to economic reform and the provision of an enabling environment to help open, outward-oriented, and private sector-led development. The Education and Health pillar is concerned with using the annual Compact of Free Association (COFA) grants by the United States to support the provision of basic essential services in education and health. The Self-Reliance and Sustainability pillar's objective would be achieved by establishing a Trust Fund that would replace the annually appropriated transfers from the United States. [Federated States of Micronesia].

1.1 Demographic Characteristics

FSM had 115,021 inhabitants in 2020, with 51% males and 49% females, with an average annual population growth rate of -0.021% since 2000. The population of each state is 11,377 in Yap, 48,654 in Chuuk, 36,196 in Pohnpei, and 6,616 in Kosrae (as of 2010). The population is relatively young, with 35% of the people below 15 years old. However, out-migration and a reduction in fertility rates have recently impacted the demographic proportion of the country, and the group aged 0-19 years old is decreasing. [FSM Statistics Office, 2020] [Federated States of Micronesia Department of Finance and Administration, 2017] [United Nations Children's Fund (UNICEF), Pacific Office, Suva, 2017] [Statistics for Development Division, 2021]

FSM is a culturally and linguistically diverse country of more than 600 volcanic islands and coral atolls. Each district has its constitution and elected government. Among the four states, 47% of the population lives in the Chuuk States, and 35% lives in Pohnpei. Urban population is around 7.4% in Yap, 28.5% in Chuuk, 16.8% in Pohnpei, and 32.6% in Kosrae. Most of the population (77%) lives in rural areas. [United Nations in the Pacific, 2017] [United Nations Children's Fund (UNICEF), Pacific Office, Suva, 2017].

Equality among men and women is still a challenge. In 2013, all 14 members of parliament were men. FSM is one of the few countries globally that has never elected a woman to its national legislature. 68% of women and girls of 15 years old or more are categorised as economically active. Nationwide, one in every three women has experienced physical and/or sexual violence by a partner in their lifetime. However, 35.1% of women had never disclosed intimate partner violence. Prevalence figures of lifetime physical and/or sexual partner violence were over 50% in some FSM States. In the case of non-partner violence, the study shows that about 14% of interviewed women experienced child sexual abuse, and the most common perpetrators were family members. In 2018, the National Gender Policy was endorsed in 2018, whose goals are: better representation of women in decision-making, elimination of gender-based violence, equitable education outcomes, addressing barriers facing women in the workforce, better healthcare for women and improved choices over fertility. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019] [National Government of the Federated States of Micronesia, 2018] [FSM Department of Health and Social Affairs, 2014].

The estimated total population of persons with disabilities was 11,363, 11% of the people in 2010. The distribution of the people of persons with disabilities is similar to the distribution of the overall population. Yap state has the highest proportion of persons with disabilities representing 16.9% of its people, followed by Chuuk, Kosrae, and then Pohnpei. 51% of the people, who reported having disabilities, have one difficulty. [FSM Office of Statistics, 2010].

1.2 Economic Impact of Disasters

Disasters caused by natural hazards have immediate adverse effects on the economy, reduce long-term growth due to interruption of investments, and divert resources from development to reconstruction. According to The Asian Development Bank, FSM's GDP growth rate contracted by 1.1% in 2021 due to the COVID-19 pandemic and is expected to grow by 2.0% in 2022. [Asian Development Bank, 2021] [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

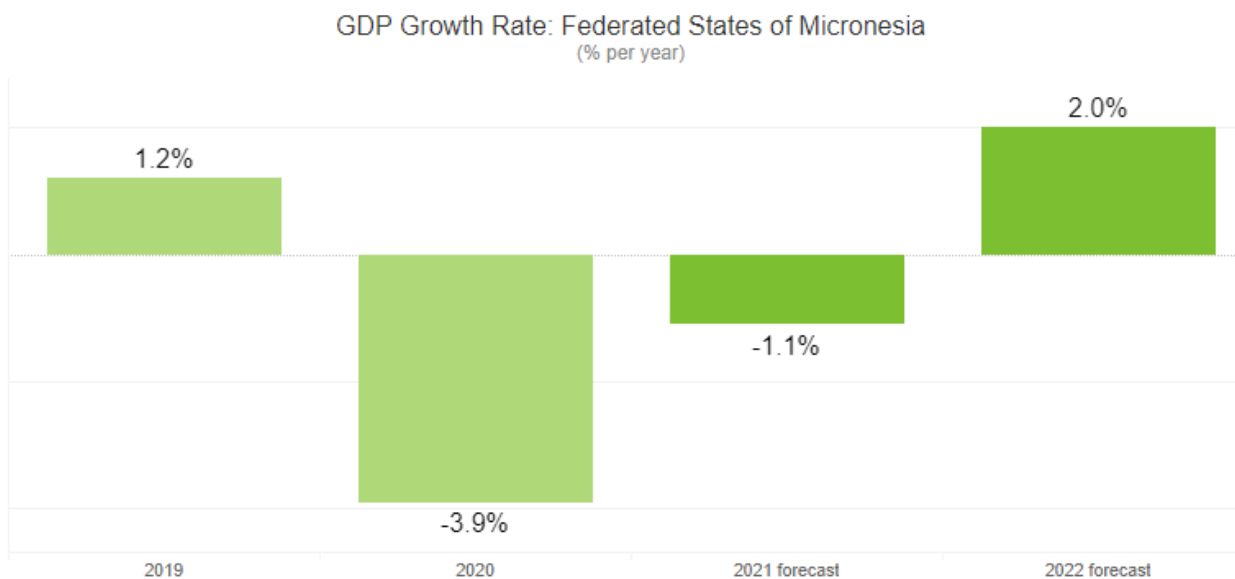


Figure 1. GDP Growth Rate of Federated States of Micronesia [Asian Development Bank, 2021]

Three sectors within the FSM economy are recognised as being vulnerable to climate change: fisheries, agriculture, and tourism. These sectors are also the focus of private sector investment. They are considered the most significant opportunities for short- and long-term economic growth [Department of Resources and Development, Federated States of Micronesia, 2018] [Federated States of Micronesia Department of Finance and Administration, 2017] [Federated States of Micronesia].

FSM's economy depends heavily on subsistence farming and fishing. The subsistence economy revolves around tree crops (breadfruit, coconut, citrus) and root crops (taro and yam). Agricultural practices remain small scale, and traditional fishing methods are continued. These sectors will be heavily impacted during and after disasters. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

Though FSM's tourism strategy had moderate success, FSM started to gain international recognition as a tourist destination. Yap state is known for scuba diving and cultural attractions, and tourism is as a significant engine of economic growth. Historically, the industry suffered from the September 11 attacks and other terrorist incidents, the SARS outbreak, and the Asian flu. The impact of the COVID-19 pandemic on tourism has been significant due to the prolonged isolation and closed borders. FSM's tourism is dependent on the two dominant markets, Japan, and the USA, which together account for over two-thirds of all arrivals. This dependency on two countries will significantly impact the industry when FSM, the two countries, or the world suffers from a disaster. The current closure of the border to inbound travellers due to COVID-19 is impacting the economy. [Federated States of Micronesia] [Radio New Zealand, 2020] [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

According to the Economic and Social Commission for Asia and the Pacific (ESCAP), the Pacific Small Island Developing States are highly vulnerable when assessing the cost of disasters resulting from climate change as a percentage of GDP. FSM might lose up to 14% of its GDP under the worst-case (Representative Concentration Pathways 8.5) climate scenario. [ESCAP, 2021]

1.3 Social Impact of Disasters

Disasters impact people differently due to an individual or community's distinct vulnerabilities in each context that shapes how they experience and recovers from disaster impacts. This is influenced by gender, age, disability, and other socio-economic characteristics. The effects of disasters are sharply felt at the community level. Having limited access to public information broadcasts and communications also increases vulnerability to disasters.

Understanding how people's lives are impacted by gender norms, roles and relations within a given culture and society is critical to performance and reducing disaster risk. Women, girls, men, boys, and people of diverse gender identities have distinct vulnerabilities in each context that influences how they experience and recover from disaster impacts. Gender inequalities result in gender-differentiated disaster impacts. Gender discrimination can impact the control that women and girls have over decisions that govern their lives and their access to resources and opportunities, which heightens risk exposure and can result in disasters having a disproportionate impact on women and girls. During disasters, women and girls have more chances of intimate partner violence and other forms of domestic violence.

FSM experiences a typhoon season every year. At the end of March and the beginning of April 2015, the country experienced Typhoon Maysak with severe consequences. Heavy damage was caused to homes and crops in the Ulithi and Fais islands in the Yap states. The strong winds and heavy rainfall affected Houses and power lines in Chuuk State. At least four individuals were killed, 29,700 people were affected, and houses, crops, fruit trees and public infrastructure were damaged. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019] [United Nations Children's Fund (UNICEF), Pacific Office, Suva, 2017]

The population in FSM is also susceptible to risks of infectious diseases, including tuberculosis, HIV/AIDS, Hansen's disease (leprosy), dengue, chikungunya, Zika virus and leptospirosis. The possibility of hospital disruptions could result in worse health outcomes during disasters. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019].

In 2020, most people reported that there was enough food on Kosrae¹ and Yap², but due to a lack of flights and shipping related to COVID-19 restrictions, there is a possibility of a shortage of stock in stores. Some people reported increases in tinned fish and rice prices, particularly in Yap. [Pacific-European Union Marine Partnership Programme, 2020]

1 21 respondents from all five municipalities were interviewed: Lelu (8), Utwe (4), Malem (5), Tafunsak (3), and Walung (1). Respondents from all age groups were targeted as well as both women (6) and men (15)

2 20 respondents from 10 villages in Tamil Municipality were interviewed: Aff (2), Girgey (2), Thol (2), Maa (2), Doomchuy (2), Dechmur (2), Teb (2), Bugol (2), and Meerur (2). The respondents included 12 men and eight women.

2. Disaster Risk Profile

2.1 Governance and Institutional Mechanism

National Disaster Committee (NDC) is responsible for policy development and disaster management arrangements for preparedness and response activities at national and sectoral levels. The National Disaster Coordination Team (NDCT) and the National Emergency Operations Centre (NEOC) operate under NDC and will be activated for operational management during emergencies. Access to international and regional support will be exercised through NDC, whereas control of the asset will be exercised through the National Disaster Coordination Team (NDCT). [Office of Environment and Emergency Management, FSM National Government, 2017]

State Disaster Committees (SDC) are established to plan and arrange resources for disaster management activities in their states and work closely with NDC during nationally declared emergencies. State Disaster Coordination Teams (SDCTs), their associated sector-based Coordination Working Groups (CWGs), and the State Emergency Operations Centers (SEOCs) are operated under the SDCs during disaster events. [FSM National Government, 2017]

Municipal Disaster Committees support conducting disaster preparedness and response activities and distributing relief items in each municipality during emergencies and disaster events. Village Disaster Management Committees are responsible for facilitating a local network for planning disaster management activities, maintaining connections with villages and settlements, and accommodating local leaderships. [FSM National Government, 2017]

Department of Environment, Climate Change and Emergency Management (DECEM) under the National Government of the Federated States of Micronesia is responsible for protecting the FSM's environment from natural and human-induced threats to ensure sustainable development. Division of Emergency under the DECEM supports the FSM States to develop, sustain, and improve their capacity to prepare, respond, and recover from disasters. Division of Climate Change under the DECEM manages and coordinates the responses and measures to the threats and impacts of climate change. National Ozone Unit under the DECEM manages FMS's national programs to comply with the Montreal Protocol on Substances that Deplete the Ozone Layer. [DECEM, 2022]

Partners, The Micronesia Red Cross Society (MRCS), FANGO (FSM Alliance of NGOs), Pohnpei Women's Council, Chuuk Women's Council, Micronesian Conservation Trust, and civil society agencies assist communities in disaster preparedness, response, and recovery activities, health, education, youth programs, climate change, environment and HIV/AIDS awareness, gender, humanitarian work and education. [FSM National Government, 2017] [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

United Nation's Food and Agriculture Organization (FAO), World Food Program (WFP), United Nations International Children's Emergency Fund (UNICEF), World Health Organization (WHO), United Nations Development Program (UNDP) and United Nations Women are partners in various preparedness and risk reduction projects in FSM and can be accessed during emergencies. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

National and state government agencies, committees, and non-governmental organisations (NGOs) are involved in biodiversity conservation. The President's Environmental Management and Sustainable Development Council, National Biodiversity Strategy and Action Plan (NBSAP) panel, Department of Economic Affairs, Department of Health, Education and Social Affairs, and NGOs such as Micronesian Island Conservation, College of Micronesia, and United States Department of Agriculture National Resources Conservation Office committed to biodiversity conservation. [The Federated States of Micronesia, 2014][The Federated States of Micronesia, 2002]

The private sector is an essential component and resource in disaster management. The private sector is expected to address its disaster management issues, including insurance coverage and

mitigating activities. Critical infrastructure agencies in the private sector must work and participate within the FSM National Disaster Response Plan framework. [Office of Environment and Emergency Management, FSM National Government, 2017]

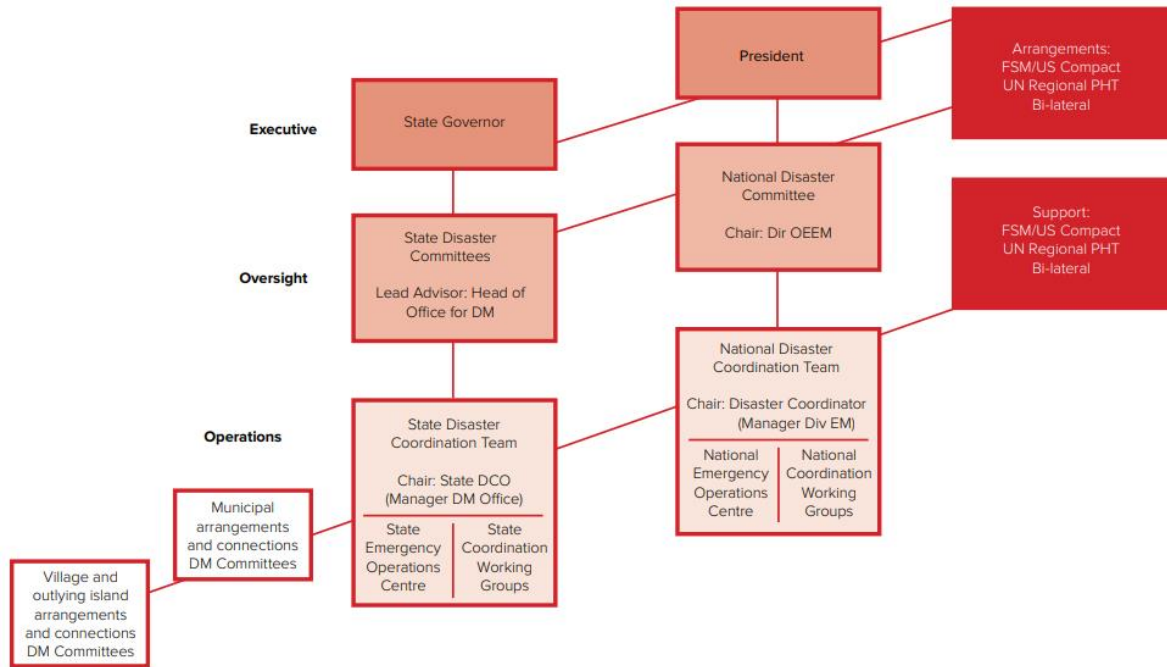


Figure 2: FSM Disaster Management Outline Institutional Framework [FSM National Government, 2017]

In 2017, the National Disaster Response Plan (2016) was published. It aims to establish the national institutional arrangements to respond to emergency and disaster events. The plan includes arrangements for preparedness, monitoring of potential events and national response and local support. It guides states to make disaster response plans by national level arrangements. It also includes provisions for access to international aid. The project has been prepared under the Disaster Relief Assistance Act of 1989 and outlines arrangements as minimum requirements for state disaster response plans. [Office of Environment and Emergency Management, FSM National Government, 2017]

Policies related to disaster risk reduction which have enhanced the disaster risk governance are presented in the table on the next page. [Federated States of Micronesia, 2013]

Legislation/Policy	Scope	Purpose
Disaster Relief Assistance Act of 1989	National, Local	Provide for a permanent, orderly program of National Government assistance to the state and local government in carrying out their responsibilities to alleviate suffering and damage resulting from disasters, and authorise the President to establish a program of disaster preparedness, assistance and relief that utilises the services of all appropriate agencies
Strategic Development Plan (2004-2023)	National, Local	Maintain economic assistance at levels that support macroeconomic stability, provide an improved enabling environment for economic growth, improve education and health status, assure self-reliance and sustainability
Nationwide Integrated Disaster Risk Management and Climate Change Policy (2013)	National, Local	Promote development that proactively integrates the management of disaster and climate-related hazards by investing in DRR, CCA and greenhouse gas emissions reduction
Climate Change Act (2013)	National, Local	Implement specific provisions of the FSM Nationwide Integrated Disaster Risk Management and Climate Change policy
National Disaster Response Plan 2016	National, Local	Establish national institutional arrangements for the FSM government to respond to emergency and disaster events within the country

Table 1. National disaster and climate risk reduction policies, plans and legislation in the FSM

2.2 Hazards and Exposure

FSM experiences various hazards. It ranks 95th among 191 countries on the INFORM 2022 index with a score of 3.6. The most common risks include earthquakes, typhoons, landslides, drought, and sea-level rise, and the possible threats include pandemic, fire, and tsunami. [INFORM, 2021]

State	Key risks
Yap	Typhoons, flooding, droughts, high seas surges
Chuuk	Droughts, typhoons, tropical storms, storm waves, flooding, landslides, high sea surges
Pohnpei	Droughts, variable rainfall patterns, landslides, and typhoons during El Niño
Kosrae	Tropical storms and typhoons, droughts, landslides, higher than normal high tides, large sea swells, increased impact of storm surges, flooding due to sea-level rise

Table 2. Key climate risks by states

[Federated States of Micronesia Department of Finance and Administration, 2017] [Secretariat of the Pacific Community (SPC), 2017] [Secretariat of the Pacific Community (SPC), 2016] [Secretariat of the Pacific Community (SPC), 2015] [Secretariat of the Pacific Community (SPC), 2015]

FSM is in the Pacific Ring of Fire, where volcanic and tectonic activities are frequent and active. The highly active seismic zones have the potential to generate large earthquakes and sometimes significant tsunamis that can travel far distances. The nation experienced earthquakes, especially a series of earthquakes in 2017 that affected communities in the state of Yap, and large tsunamis occurred in 1837, 1849, and 1899. It is projected that the state of Yap is likely to experience light to moderate levels of ground shaking in the next 50 years. [PCRAFI,2011] [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

As FSM is located on the southern edge of the typhoon belt, it occasionally suffers damage, especially in the western islands of Yap. The nation is affected by excessive rainfall associated with El Niño. The eastern high volcanic islands of Kosrae, Pohnpei and Chuuk are prone to heavy rain and strong winds. Typhoon Maysak in 2015 devastated FSM's Chuuk and Yap states by affecting nearly 29,700 people, causing four deaths, and damaging infrastructure and the natural environment. In 2019, Typhoon Wutip, with wind speeds of more than 165 km/ph have, damaged 160 houses in both Chuuk and Yap and displaced nearly 160 people [Federated States of Micronesia Department of Finance and Administration, 2017] [Secretariat of the Pacific Community (SPC), 2017] [Secretariat of the Pacific Community (SPC), 2016] [Secretariat of the Pacific Community (SPC), 2015] [Secretariat of the Pacific Community (SPC), 2015]

In April 2020, FSM experienced an extensive drought. In recent months, the deficit was related to El Niño/Southern Oscillation or ENSO-neutral weather conditions and abnormally warm water near the dateline. Below-average rainfall affected parts,s and drought-affected Yap and Chuuk. In 2010-2011, drought affected the states of Yap and Pohnpei, damaging food crops, vegetation, and water supplies. A state of emergency was declared in Kosrae, Pohnpei, and Chuuk during the drought from 1992-1993. According to the latest global climate model projections, Drought frequency is projected to decrease. [Secretariat of the Pacific Regional Environment Programme (SPREP), 2020] [RadioNew Zealand, 2020]

In December 2021, the Chuuk State Governor declared the State of Emergency for the State of Chuuk due to damages caused by King Tide. The most affected islands faced water and food security issues, approximately 10,000 people were affected, and four families were displaced. [National Joint Validation Team, 2022]

Landslides are often considered secondary disasters triggered by primary disaster events such as earthquakes, floods, or typhoons. Landslides caused by the heavy rains from the 2002 Tropical Storm Chata'an in Chuuk have generated more than 30 landslides and mudslides, killing 47 people and injuring many others. In FSM, deforestation is expected, which increases the probability of landslides. [Secretariat of the Pacific Regional Environment Programme (SPREP), 2012]

Climate change is a significant challenge facing FSM. The latest climate model (General Circulation Model) projections and climate science findings for FSM indicate that El Niño and La Niña events will most likely continue to occur to 2100. Annual average temperature and extremely high daily temperatures will continue to rise. The yearly average rainfall is expected to increase, bringing more extreme rain events. Ocean acidification is projected to continue, and the risk of coral bleaching will increase. The sea level will continue to rise. [Secretariat of the Pacific Regional Environment Programme (SPREP), 2020]

The warming is similar for the next 20 years regardless of the greenhouse gas emissions pathway (1.3°C from 1850-1900, or 0.7°C from 1986-2005). However, there is a notable difference later in the century depending on scenarios; by 2050, it's 0.8°C under a low emissions pathway (Representative Concentration Pathways 2.6) to 1.4°C under a high emissions pathway (RCP8.5). By 2070 it's 0.8°C (RCP2.6) to 2.2°C (RCP8.5), relative to 1986-2005. [CSIRO and SPREP, 2021]

Data from Pohnpei and Yap demonstrate increased average temperature in both locations, with the most robust trend of +0.24 °C per decade since 1950 seen in Pohnpei during the wet season. Waters around the FSM have been warming by approximately 0.11°C per decade in the eastern regions of the FSM and by 0.8°C per decade in the western areas since 1970. [Department of Resources and Development, Federated States of Micronesia, 2018] [Australian Bureau of

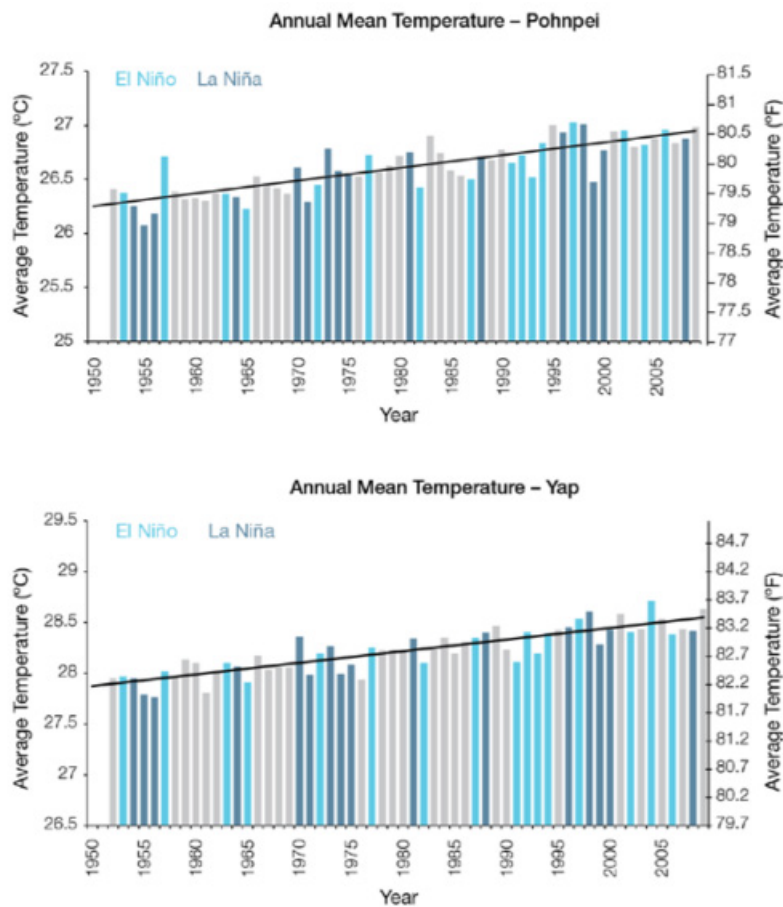


Figure 3. Annual Mean Temperature trends in Pohnpei and Yap

[Australian Bureau of Meteorology and Commonwealth Scientific and Industrial, 2011] p.63

Since 1993, there has been a sea-level rise of over 10 mm per year in FSM, far more significant than the global average of 2.8-3.6mm per year. Rising sea levels erode coastlines, threaten the fishing industry, and contaminate the drinking water with salty ocean water. Under a high global emissions pathway, the research suggested that Antarctic ice sheets may contribute to more extraordinary sea-level rise this century. Sea level projections incorporating the higher Antarctic contribution show a height of between approximately 0.09-0.18 m by 2030 and an increase of 0.66 to 1.23m by 2100 under RCP8.5. The Intergovernmental Panel on Climate Change Sixth Assessment Report emphasises that a 'low likelihood high impact' outcome of much higher sea-level rise under the high emissions pathways can't be excluded. A 2010 study using the Coastal Module of the integrated Climate Framework for Uncertainty, Negotiation and Distribution assessment model suggested a 1-meter sea level rise by 2100 would cost more than 5% of GDP in the FSM. [CSIRO and SPREP, 2021] [Department of Resources and Development, Federated States of Micronesia, 2018] [Australian Bureau of Meteorology and Commonwealth Scientific and Industrial, 2011] [David Anthoff, 2010]

The country's biodiversity condition was researched when developing the initial National Biodiversity Strategy and Action Plan. According to the Strategy and Action Plan, in addition to climate change, FSM faces many biodiversity threats, such as overfishing/overhunting, environmental degradation, waste management, and alien and invasive species. An assessment of selected amphibians, birds, mammals, and plants by Kingsford et al. (2009) shows that 90% of assessed species are affected by habitat loss, 48% by overexploitation, 38% by invasive species,

and 10% by pollution. Environmental degradation is mainly caused by climate change, urbanisation, and damaged vehicles' abandonment. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019] [The Federated States of Micronesia, 2018].

As of February 2022, there are no cases of COVID-19 in FSM, as the country rapidly closed their borders to inbound travellers to prevent disease outbreaks. [World Health Organization, 2022] [Radio New Zealand, 2020]

2.3 Socio-economic Vulnerability

FSM faces a triple burden of infectious diseases, non-communicable diseases, and the health impacts of climate change. The rate of deaths caused by non-communicable conditions is among the highest globally. Health services were financed through the original Compact grant, US Federal Programs, state funds, user fees, insurance and grants from bilateral, multilateral, and non-government donors. Compact-associated funding was the most significant contributor. The weak health system means the country is more vulnerable to biological hazards. According to the “Measuring Overall Health System Performance For 191 Countries” report of the World Health Organization, FSM is ranked 123 out of 191 countries in terms of overall efficiency. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019] [World Health Organization, 2000] [Federated States of Micronesia]

The four districts have their constitutions and elected government. While women’s equal participation and leadership in public life, including disaster risk reduction, is both an important goal and essential for reducing disaster risk and achieving a broad range of sustainable development goals, there are only two female senators among 85 seats across four states legislatures. Women are an essential component of disaster risk mitigation and response planning and actions and enhance disaster planning with different perspectives that often focus on community needs and marginalised groups. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019].

A decline in agriculture, fishing, and local food production over the last 50 years has worsened food security in FSM. People have to incorporate more processed and imported foods because of cost and convenience and the lack of access to fresh and locally produced food. This results in a degradation in nutrition and will carry health, financial, social, and environmental costs in the future. Due to global climate change, this tendency to rely on imported food will further hinder local production.

Expenditure compositions across the four districts vary, as Figure 4 shows. Chuuk State is more dependent on external sources of funding (77%), which are Compact and grant assistance, compared to Pohnpei (60%). Nevertheless, all states depend on external sources for more than 60% of expenditure. The ability of each state government to sustain its current and future spending levels will be important when external sources are reduced in the future, especially as a result of the fiscal gap that is expected to occur from the post-2023 Compact scenario. There is an anticipated annual financing gap of about USD 41 million, 35-45% of current national government expenditure levels. [Pacific Community (SPC) and Pacific Islands Forum Secretariat (PIFS), 2019]

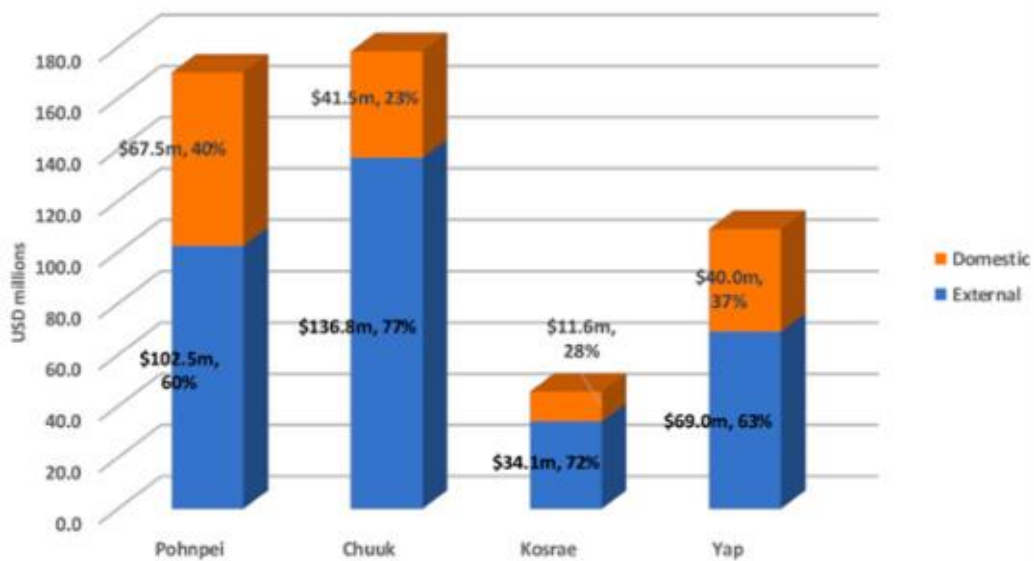


Figure 4. FSM state governments expenditure composition, 2012-2016.
 [Pacific Community (SPC) and Pacific Islands Forum Secretariat (PIFS), 2019] p.64

Figure 5 shows the expenditure of each state on climate change and disaster risk management during 2012-2016. It shows the state governments of Pohnpei and Yap spent relatively more than the other two states due to expenditures on public infrastructure, utilities, public safety and emergency management. Spending on climate change and disaster risk management is weighted relative to the total expenses of each state and is an element of vulnerability to climate change and disaster. [Pacific Community (SPC) and Pacific Islands Forum Secretariat (PIFS), 2019]

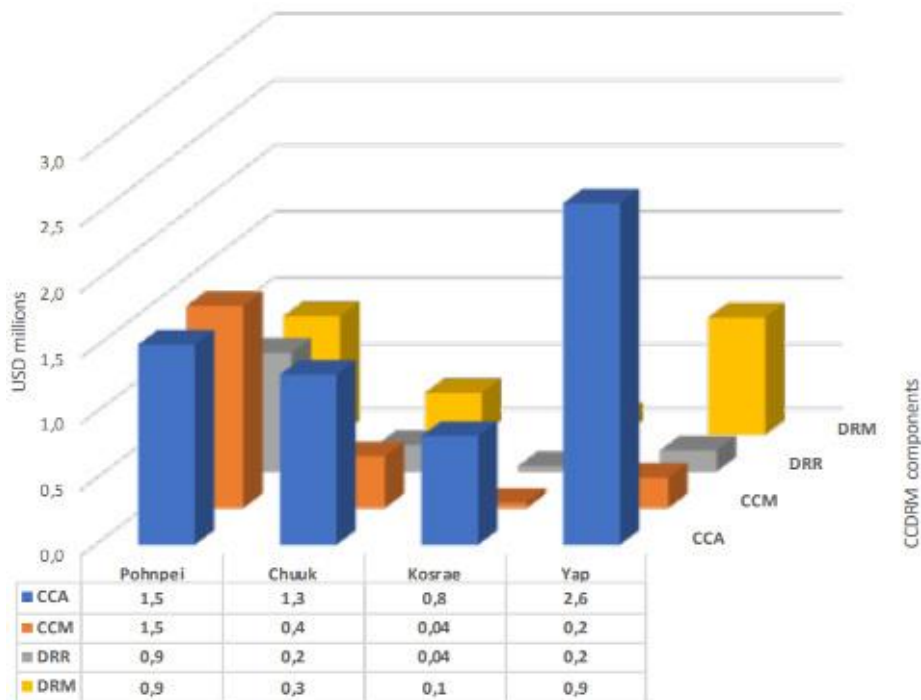


Figure 5. FSM State governments' climate change and disaster risk management – weighted expenditure composition, 2012-2016

[Pacific Community (SPC) and Pacific Islands Forum Secretariat (PIFS), 2019] p.65

Internal conflict is another issue. There is a desire for greater independence from the central government, especially in Chuuk State, with a population counting around half of the country. It has been moving to secede from FSM to become an independent nation called the Republic of Chuuk. In 2014, the President of the FSM publicly rejected the move and urged other citizens to sign a petition against the secession movement. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

2.4 Physical Vulnerability

FSM has around 240 km of highways, most of which are in poor condition, with less than 20% being paved. Most roads are narrow without sidewalks and with little or no shoulder for cars to pull to the side. Most roads are on the main islands, and only a few outer islands have routes, with just small walking tracks connecting villages. There is no railway network, and FSM has no internal waterways. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

All roads are used by vehicles, pedestrians, children at play and animals. Streets often have large holes, and conditions can worsen significantly after frequent heavy rains. The primary source of transportation is private vehicles. There is a limited number of auto repair shops on the islands; there were vehicle recycling services for several years, but they are no longer available. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

Communities often settle on a coast, at the base of a slope and near freshwater. Close to 60% of households live around 180 meters from the shoreline. (70% in Yap, 68% in Pohnpei and 80% in Kosrae.) The settlements along the coasts are threatened by rising sea levels and hazards such as typhoons. Though recommendations are made not to settle in high-risk areas such as steep slopes, streams and rivers, intermittent-stream channels, and the mouths of mountain channels, to avoid repeating past calamities, it is challenging to ask communities to move to a safer area. [FSM Statistics Office, 2020] [Federated States of Micronesia Department of Finance and Administration, 2017] [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019].

As of 2016, electricity is available in 75% of households. Electricity costs remain expensive at \$0.39 US dollars per kilowatt-hour (kWh) in 2016, compared to the rate in the US, which is \$0.13 USD/kWh. Data for water and sanitation indicators are not always available, but overall improved sanitation coverage remains low at 57%. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

The communication system relies mainly on satellite technology. The government-owned FSM Telecommunications Corporation (FSMTC) is the only provider of all country's telecommunications, cable, and internet services. As of 2017, there are 6,947 fixed telephone subscriptions, 6% of inhabitants, 23,114 mobile telephone subscriptions, and only 20%. An estimated 35% of individuals used the internet in 2017, concentrated in the main islands. Thus, ensuring means of communication during a disaster is a challenge. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

2.5 Cultural Vulnerability

The communities throughout the FSM have distinctive cultures, traditions, and identities. The state of Yap is traditionally a patrilineal society, and the Chuuk, Pohnpei and Kosrae states are matrilineal societies. Women may be disproportionately affected by the disasters in both societies due to their responsibilities such as childbearing, caretaking, growing their clan to populate ancestral land (applicable to matrilineal society), and maintaining crops and gardens for food, social welfare of the community, and water collection in some places. [Landy T, 2019] [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

Domestic violence and gender-based violence is a prevalent issues in the country. The firmly rooted perceptions of women's role in society are one of the main reasons for violence against women in FSM. Nationally, more than 15% of the women reported to have undergone sexual abuse in their childhood, and nearly 35% of women in Chuuk have encountered sexual violence by partners over their lifetime. [SA Smith, 2020] [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

Women are either absent or grossly underrepresented at the highest level of government decision making. Cultural stereotyping of gender roles based on the traditional social hierarchy is the primary reason for such underrepresentation. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

Historical and traditional sites are essential to the communities in FSM. These sites are not properly managed due to disputes over land ownership or being owned by private landowners who deny access. Urbanisation, economic development, and disasters also threaten these sites. [SPREP,2018]

Modernisation has impacted traditional knowledge, practices, and modes of resource management that usually protect the country's natural resources. Loss and limited sharing at the family level, less engagement of the younger generation in learning, and cultural reticence to share knowledge outside of the family also impacted the preservation of traditional knowledge and practices. [SPREP, 2018]

3. Progress in Sendai Framework for Disaster Risk Reduction

The following sections shed light on FSM's process and capacity in disaster risk reduction and climate change adaptation as mandated and guided by the global policy frameworks such as Sustainable Development Goals (SDGs), the Paris Agreement, and Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR), which aims to prevent new and reduce existing disaster risk, increase preparedness for response and recovery and strengthen resilience. Four priority areas of SFDRR organise the sections in which focused actions are required within and across sectors by states at local, national, regional, and global levels.

Priority 1. Understanding Disaster Risk. Disaster risk management policies and practices should be based on an understanding of disaster risk in its components such as vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Due to the wide range of hazards and remoteness of FSM, officials can have a hard time collecting and analysing comprehensive risk information. FSM has limited resources and capacity to conduct such assessments at the subnational level. [The United Nations Office for Disaster Risk Reduction, 2015]

Priority 2. Strengthening Disaster Risk Governance to Manage Disaster Risk. Disaster risk governance at national and regional levels is essential to disaster risk management in all sectors. By ensuring the coherence of national and local legal frameworks, regulations and policies can guide, encourage, and incentivise public and private sectors to take action towards reducing disaster risks.

National Disaster Response Plan 2016 was prepared to provide an overview of the national institutional arrangements to respond to an emergency event. State disaster response plans are developed to prepare and respond to emergencies or disaster events within the states. Committees are established at the municipal, village, and outlying island levels to carry out the preparedness, relief, and response operations.

Nationwide Integrated Disaster Risk Management and Climate Change Policy of 2013, the Climate Change Act 2013, and the Strategic Development Plan (2004-2023) are other policies that aim to strengthen the risk governance in FSM. [Federated States of Micronesia, 2013] [The United Nations Office for Disaster Risk Reduction, 2015]

Priority 3. Investing in Disaster Risk Reduction for Resilience. Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are fundamental to enhancing the resilience of persons, communities, countries and their assets. These measures are cost-effective and helpful in saving lives, preventing and reducing losses, and ensuring adequate recovery and rehabilitation. [The United Nations Office for Disaster Risk Reduction, 2015]

In May 2019, the Maritime Investment Project for Micronesia was approved. US\$ 38.49 million will be invested by the International Development Association and the International Bank for Reconstruction and Development to improve the safety, efficiency and climate resilience of maritime infrastructure and operations and to provide an immediate response to an eligible crisis or emergency if they occur. [The World Bank, 2022]

The International Organization for Migration has supported the country in installing early warning systems. They conducted a one-way radio broadcast assessment that surveyed and mapped medium-wave AM radio broadcasting facilities. It also helped government-owned radio in Chuuk and Yap improve broadcasting capability, equipment protection, and sustainability. The United Nations Economic and Social Commission for Asia and the Pacific cooperated with the government to build and operate an online geo-portal for early warning systems and disaster risk management in 2018. [Center for Excellence in Disaster Management & Humanitarian Assistance,

2019]

UNDRR launched CREWS Pacific SIDS 2.0: Strengthening Hydro-Meteorological and Early Warning Services in the Pacific Project in 2021, in collaboration with the Pacific Community (SPC), Secretariat of the Pacific Regional Environment Programme (SPREP), World Bank (WB), Australian Bureau of Meteorology (BoM), and Global Facility for Disaster Reduction and Recovery (GFDRR). The project aims to enhance the effectiveness and inclusiveness of Pacific Island and Regional Early Warning systems for local and vulnerable populations by improving the early warning capabilities of national and regional hydro-meteorological centres and strengthening governance structures.

As FSM is in a Compact of Free Association (COFA) with the United States, which stipulates that the United States provide US\$2 billion over the 20 years to 2024. One of the focuses of this assistance is to strengthen FSM's climate resilience through disaster management. [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019]

FSM seeks international and regional partnerships to complement national actions in building resilience. The nation has been a member of SPC since 1983, the Pacific Islands Forum since 1987, and SPREP since 1993. In 2017, the leaders of the Pacific Island Forum endorsed governance arrangements for the Pacific Resilience Partnership (PRP) to support and facilitate the effective implementation of the Framework for Resilient Development in the Pacific (FRDP), which aims to address climate and disaster risk management for more resilient development in the Pacific. [Pacific Community, 2020] [Pacific Islands Forum Secretariat, SPC, SPREP, 2020]

Priority 4. Enhancing disaster preparedness for effective response to “Build Back Better” in recovery, rehabilitation and reconstruction. The disaster recovery, rehabilitation, and reconstruction phase are an opportunity to “Build Back Better” through integrating disaster risk reduction measures. [The United Nations Office for Disaster Risk Reduction, 2015]

Several capacity building training was conducted by various partners to effectively anticipate, respond to and recover from the impacts of likely, imminent, or current disasters. In 2018, national government agencies, state government agencies, NGOs and civil society organisations in FSM working on the front line of climate change and disaster management completed training on the Monitoring and Evaluation (M&E) of national, regional, and global resilience systems and the associated capacities within FSM. The U.S. Agency supported the training for International Development's Institutional Strengthening in Pacific Island Countries to Adapt to Climate Change (ISACC) Project and implemented by SPC. [UN Office for Disaster Risk Reduction (UNDRR), 2020] [Pacific Community, 2020]

The United Nations Development Programme Bangkok Regional Hub (UNDP BRH) implemented the first phase of the “Partnerships for Strengthening School Preparedness for Tsunami in Asia and the Pacific” project. The program is supported by the Japan-UNDP Partnership Fund and Supplementary Fund from Japan. The project established a partnership with the International Tsunami Information Centre (ITIC), Indian Ocean Tsunami Information Centre (IOTIC), the Indonesia Institute of Sciences (Lembaga Ilmu Pengetahuan Indonesia), and Tohoku University (International Research Institute of Disaster Science), to provide a reliable source of information and comprehensive advice for preparedness against tsunamis. In the second phase, four new countries are targeted, including FSM. [UNESCO, 2020]

The FSM has three Weather Service Offices (WSOs) fully supported financially by the US Government through the US National Oceanic and Atmospheric Administration (NOAA), located in Pohnpei, Chuuk and Yap. There currently is a total of 32 staff employed in these three offices. The Pacific Islands Meteorological Strategy (PIMS) 2017-2026 provides the development priorities of the Pacific Island National Meteorological and Hydrological Services (NMHSs). PIMS sets out the strategic context and direction for strengthening NMHSs.

To promote gender equality, Australia provides support to FSM, with the strategic objective to “improve political, economic and social opportunities for women.” Benchmarks include the following initiatives:

- support for the development of legislation providing more significant legal protection against gender violence and prosecution of perpetrators;
- completion of a scoping study to identify critical barriers to scaling up women's businesses, strengthening and developing women's businesses, and helping female employees in the private sector with career advancement; and
- support development and an initial provision of essential referral services to victims of gender-based violence.[Center for Excellence in Disaster Management & Humanitarian Assistance, 2019].

4. Coherence with Sustainable Development Goals and The Paris Agreement

4.1 Strategic Coherence

Strategic coherence explores whether disaster risk reduction and climate change adaptation are explicitly addressed jointly or if there is an aim to strengthen the relationship and linkages between the two fields. [UNDRR, 2020]

The United Nations Pacific Strategy (UNPS) 2018-2022 is a five-year strategic framework to summarise collective responses of the UN system to support the development priorities of the 14 Pacific Islands countries and Territories (PICTs), including FSM, to achieve the SDG targets. To promote mutual accountability for development results in the Pacific, the UNPS focuses on six priority outcomes, namely, 1: Climate Change, Disaster Resilience, and Environmental Protection, 2: Gender equality, 3: Sustainable and Inclusive Economic Empowerment, 4: Equitable Basic Services, 5: Governance and Community Engagement, and 6: Human rights. The strategy notes that not all countries in the Pacific have enough data or ensure consistency or good quality of data, which risks the tracking of attainment of the SDG targets over time. [Federated States of Micronesia, 2017] [United Nations in the Pacific, 2017]

The FSM made efforts to localise the SDGs into its national planning and budget processes and developed the FSM's Strategic Development Plan (SDP) 2004-2023. The SDP is considered the country's highest-level policy framework for achieving economic growth and self-reliance. FSM Statistics Office published the FSM Assessment Table. In the report, most SDGs which share the same indicators as those of the Sendai Framework for Disaster Risk Reduction, such as SDG 1.54, 11.55, 11.b6 and 13.17, are recognised as important indicators. [FSM Statistics Office, 2020] [Federated States of Micronesia, 2017] [FSM Statistics Office, 2016] [Asian Disaster Preparedness Center (ADPC), 2016] [United Nations, 2015]

FSM's policies and frameworks include linkages between climate change and development, showing a determination toward addressing climate risk and challenges. FSM is one of the pioneer countries to adopt an integrated approach to handling disaster risk and climate change in the Pacific. Its Nationwide Integrated Disaster Risk Management and Climate Change Policy were endorsed in 2013. This was followed by a Joint State Action Plan for Disaster Risk Management and Climate Change developed by the four states. [The Pacific Community and the Pacific Islands Forum Secretariat, 2019] [UNDRR, 2016]

4 SDG 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.

5 SDG 11.5: By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to GDP caused by disasters, including water-related disasters, focusing on protecting the poor and people in vulnerable situations.

6 SDG 11.b: By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards the inclusion of resources efficiency, mitigation and adaptation to climate change, resilience to disasters, and development implementation meant, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.

7 SDG 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters.

In 2002, the National Biodiversity Strategy and Action Plan for FSM were released with the guidance of the National Environmental Management and Sustainable Development Council (SD Council) and with funding support from the Global Environment Facility through the United Nations Development Programme. Its actions will serve as the basis of the nation’s activities to fulfil its obligations under the Convention on Biological Diversity, a multilateral treaty signed in 1992 at Rio Earth Summit, and ensure that its resources are utilised sustainably for generations. [Secretariat of the Convention on Biological Diversity, 2020] [The Federated States of Micronesia, 2002]

FSM’s national policies, plans and frameworks are not fully aligned with international frameworks, as Table 3 shows. The more proactive alignment will support risk-informed development moving forward.

Sectoral Aim	Policies with linkages to Sendai Framework for Disaster Risk Reduction	Policies with linkage to Sustainable Development Goals	Policies with linkage to the Paris Climate Agreement for the Environment
National Development		FSM’s Strategic Development Plan 2004-2023	
Environmental Protection		FSM National Biodiversity Strategy and Action Plan (2002) FSM National Biodiversity Strategy and Action Plan 2018 - 2023	
Disaster and Climate Risk Reduction	FSM Nationwide Integrated Disaster Risk Management and Climate Change Policy (2013)	FSM’s Strategic Development Plan 2004- 2023	
Vulnerability Reduction	FSM Nationwide Integrated Disaster Risk Management and Climate Change Policy (2013)	FSM’s Strategic Development Plan 2004- 2023	
Land Use Planning		FSM’s Strategic Development Plan 2004-2023	

Table 3. Synergies between the national policies, plans and frameworks by sector and international frameworks

4.2 Conceptual Coherence

Conceptual coherence explores how countries link DRR and CCA conceptually, mainly through risk and resilience. Building resilience is the primary goal of the FSM Nationwide Integrated Disaster Risk Management and Climate Change Policy (2013), focusing on addressing both climate and disaster risks. National Disaster Response Plan (2016) focused on the preparedness and response phases rather than the risk reduction. Vulnerabilities, socio-economic factors that create the risks, synergies and distinctions between DRR and CAA are not presented. Overall, FSM has a partial conceptual coherence, and more work needs to be carried out to implement the integrated

approach successfully. [UNDRR, 2020] [Federated States of Micronesia, 2013] [Office of Environment and Emergency Management, FSM National Government, 2017]

4.3 Operational Coherence

Operational coherence looks at measures and activities which bring together disaster risk reduction and climate change adaptation practices and to which extent planning is cross-sectoral. Although Nationally Determined Contribution (NDC) contains no information related to disaster risk reduction activities, the Nation-Wide Integrated Disaster Risk Management and Climate Change Policy (2013) includes a variety of disaster risk reduction and climate change adaptation activities across sectors such as food, water, energy, infrastructure, waste management, sanitation, health, social protection, and education. Capacity development for the Pacific Islands Marine Protected Areas Community (PIMPAC) – Micronesia Program (2013–2015) and: Advancing Marine and Terrestrial Management in Micronesia (2015–2017), funded by the United States Department of the Interior, Office of Insular Affairs provides opportunities for the information and knowledge sharing, and ecosystem-based management capacity with integrated climate adaptation strategies into management plans. [UNDRR, 2020] [Federated States of Micronesia, 2013] [Micronesia Conservation Trust, 2009]

4.4 Institutional Coherence

Institutional coherence analyses whether coordination between disaster risk reduction and climate change adaptation is envisioned and if and how institutional arrangements support coherence. In FSM, the lead agency for climate change and disaster risk management activities at the national level is the Department of Environment, Climate Change and Emergency Management (DECEM). Formerly known as the Office of Environment and Emergency Management (OEEM), the Government gave top priority to climate change and disaster risk management issues by raising the status of OEEM as an office to a department in 2017. There is a strong coherence between the climate change and disaster management institutions in the country [The Pacific Community and the Pacific Islands Forum Secretariat, 2019] [UNDRR, 2016]

4.5 Financial Coherence

Financial coherence explores whether and how funding strategies and investments bring together disaster risk reduction and climate change adaptation. FSM makes efforts to localise the SDGs into its budget processes. The Climate Change and Disaster, Risk Finance Assessment Report presents a detailed financial analysis of the selected climate change and disaster risk management projects implemented in the country. However, the Nationally Determined Contribution (NDC), FSM's Strategic Development Plan (2004-2023), and other national climate change and disaster management documents do not have costed action plans. Overall, FSM National Government is progressing towards financial coherence [FSM Statistics Office, 2020] [Federated States of Micronesia, 2017] [FSM Statistics Office, 2016] [Asian Disaster Preparedness Center (ADPC), 2016] [United Nations, 2015] [FSM National Government, 2019]

5. Challenges and Future Priorities

5.1 Challenges for Disaster Risk Reduction Implementation

One of the biggest challenges in implementing disaster risk reduction policy and activities in FSM is the sustainability of funding sources because of the country's heavy dependence on international aid funding. Continued efforts towards improved coordination, information sharing, and capacity building will be helpful. Flexibility with options for accessing climate change adaptation and disaster risk management finance, including budget support, programmatic project approaches, and national climate funds, will help FSM maximise the benefits of different funding mechanisms.

FSM relies heavily on the US government's support through the Compact of Free Association. United States Agency for International Development (USAID) and Office of US Foreign Disaster Assistance (OFDA) collaborates closely with the Federal Emergency Management Agency (FEMA) of the United States, as well as USAID/Philippines and USAID's Bureau for Asia, to implement humanitarian programs in FSM. USAID/OFDA provides critical services and technical assistance during disasters such as drought, floods, and storms. Heavy dependence on aid funding is because of the country's remote and scattered island geography. However, the agreement with the US government ends in 2023; thus, building financial and human resources capacity to cope with disaster risks can be challenging. [Pacific Community (SPC) and Pacific Islands Forum Secretariat (PIFS), 2019] [Center for Excellence in Disaster Management & Humanitarian Assistance, 2019] [United Nations Children's Fund (UNICEF), Pacific Office, Suva, 2017]

5.2 Priority Areas of Work

It is recommended that FSM revitalises the National Strategic Development Plan to reflect a new context post Compact funding in 2023 and uses this opportunity to integrate biological hazard risk management into longer-term development planning. The government needs to work with donors to develop a medium-term fiscal strategy to secure global climate funding while ensuring consistency with the 2023 Action Plan and the Infrastructure Development Plan 2025. Review and modernisation of the Disaster Relief Assistance Act of 1989 to move from reactive to proactive disaster risk reduction legislation will also support advancing the disaster risk reduction plan. [Pacific Community (SPC) and Pacific Islands Forum Secretariat (PIFS), 2019]

Small Islands Developing States (SIDS) will need to prepare for multiple hazards. In 2020, SIDS had to prepare evacuation centres, keeping in mind the physical distancing of the COVID-19 pandemic during and after Cyclone Harold devastated countries. A key lesson learnt from the dual impact of COVID-19 and climate-related hazards is the need to adopt a multi-hazard integrated disaster risk management approach. [United Nations Office for Disaster Risk Reduction - Regional Office for Asia and Pacific, 2020]

With more substantial alignment between global and national policy frameworks, utilising global policy frameworks, such as SDGs and Sendai Framework for Disaster Risk Reduction, to monitor and evaluate national policy implementation will be helpful. Establishing formal partnerships between disaster risk reduction and climate change adaptation stakeholders is recommended to improve efficiency and avoid duplication of activities. [Pacific Community (SPC) and Pacific Islands Forum Secretariat (PIFS), 2019] [UNDRR, 2021]

To improve the consistency and comprehensiveness of identified priorities, the nation needs to adopt a national standardised risk and vulnerability assessment framework, which includes gender, social and cultural indicators. Congress should improve gender balance in climate change adaptation and disaster risk management decision-making. The government needs to engage, coordinate and share information with government-owned commercial entities in policy development and budget formulation. [Pacific Community (SPC) and Pacific Islands Forum Secretariat (PIFS), 2019]

There is a need to develop and adopt an impact-based forecasting and warning system in FSM as per the guidelines of WMO. This approach combines with risk assessment, which includes evaluating hazard, vulnerability, exposure, and adaptive capacity. The goal is to optimise the national and provincial emergency response to those most in need while providing information to the public that would enable “self-rescue” by individuals, families, and communities. [WMO, 2015]

Utilising remote assessments and community feedback on the impacts of the disasters can assist in determining the humanitarian needs. For instance, to reduce the exposure risk, traditional tools such as post-disaster needs assessment for developing humanitarian needs could be replaced with community feedback as a primary data collection. [United Nations Office for Disaster Risk Reduction - Regional Office for Asia and Pacific, 2020]

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