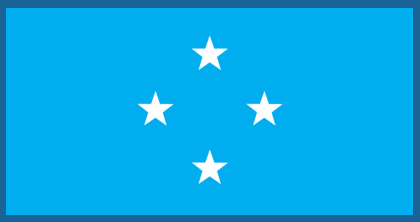
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FEDERATED STATES OF MICRONESIA

Disaster Management Reference Handbook

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Front Cover

Moen, Chuuk, Federated States of Micronesia, Weno by Marek Okon, https://unsplash.com/photos/g18MsEMgdNY

Disclaimer

This handbook has been prepared in good faith based on resources available at the time of publication. Information was gathered from the public domain, from local and government sources, as well as from subject matter experts. Where possible, a link to the original electronic source is provided in the endnote (reference) section at the end of the document. While making every attempt to ensure the information is relevant and accurate, the Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) does not guarantee or warrant the accuracy, reliability, completeness, or currency of the information in this publication. Each handbook is a working document and will be updated periodically as new and significant information becomes available. We hope that you find these handbooks informative, relevant, reliable, and useful in understanding disaster management and response. We welcome and appreciate your feedback to improve this document and help fill any gaps to enhance its future utility. For feedback, comments, or to request a printed copy please email cfe.dmha.fct@pacom.mil. Please visit our website to download copies of this publication and other products (https://www.cfe-dmha.org). All parts of this publication may be reproduced, stored in retrieval systems, and transmitted by any means without the written permission of the publisher.

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Letter from the Director

The Federated States of Micronesia (FSM) is exposed to multiple natural hazards, and when a threat becomes a real emergency event, it can claim human lives and damage the built and natural environments. However, the potential risk and occasional threat posed by storms or tsunamis pales in comparison to the already present threat posed by climate change, which is causing sea level rise and making it more difficult to predict periods of rain and heat. The people of FSM are already experiencing food insecurity, shortages of drinking water, and displacement as their crops fail, their water grows more saline, and rising tides submerge their land.

FSM's contribution to global greenhouse gas emissions is miniscule, but it confronts heightened risk from climate change-influenced hazards. Thus, mitigation is the primary thrust of national climate change-related commitments, and FSM has consistently built international partnerships that it uses in order to leverage external finance, mobilize domestic revenues, and reduce dependence on expensive imports from volatile international oil markets. As an ally and partner of FSM, the United States (U.S.) has supported and remains ready to support FSM technically, financially, and materially as this Pacific Island state confronts an increasingly unstable environmental future.

Pursuant to the Amended Compact of Free Association (COFA) between the U.S. and FSM, the U.S. Agency for International Development's Bureau for Humanitarian Assistance (USAID/BHA) and the U.S. Department of Homeland Security's Federal Emergency Management Agency have developed an operational blueprint, which guides humanitarian assistance in the event of a significant disaster in FSM. In addition to USAID/BHA's life-saving activities in response to natural disasters, the agency provides technical assistance to coordinate response and strengthen the capabilities of first responder agencies, to enhance and expand end-to-end early warning systems, and to improve preparedness in at-risk communities.

The Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) recognizes that U.S. government support helps FSM and other Pacific Island nations bolster their capacities to match their strong commitments to achieve self-reliance in disaster risk management. The CFE-DM assists in planning and executing military and civilian missions like Pacific Partnership, which, in 2019, conducted more than two weeks of training, construction, and re-construction in FSM.

As an additional measure, the CFE-DM publishes this updated Disaster Management Reference Handbook to provide a baseline of information on FSM's social, economic, and environmental context alongside an outline of the country's disaster management structures and policies. It is intended as an information resource for persons preparing for a disaster response mission in FSM or who may be working alongside Micronesian government or other civilian responders during a mission.

Sincerely,

Joseph D. Martin, SES
Director

About the Center for Excellence in Disaster Management & Humanitarian Assistance

Overview

The Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) is a United States (U.S.) Department of Defense (DoD) organization comprised of nearly 30 subject matter experts that provide academic research, civil-military coordination training, and operational insights to support decision making before, during, and after crises. The Center is designed to bridge understanding between humanitarians, civilian, and military responders. CFE-DM partners with a diverse group of governmental and nongovernmental actors, as well as academic institutions to increase collaborations and capabilities in humanitarian assistance and disaster response. While maintaining a global mandate, the Indo-Pacific region is our priority of effort and collaboration is the cornerstone of our operational practice. The Center is a direct reporting unit to U.S. Indo-Pacific Command (USINDOPACOM) and is located on Ford Island, Joint Base Pearl Harbor-Hickam, Hawaii.

Vision

The Joint Force, allies, and partners are fully prepared to conduct and support foreign humanitarian assistance.

Mission

CFE-DM builds crisis response capacity in U.S. and partner militaries, enhances coordination and collaboration with civilian and foreign partners, and strengthens those relationships to save lives and alleviate human suffering before, during, and after humanitarian crises.

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EXECUTIVE SUMMARY

The Federated States of Micronesia (FSM) is an island country in the Pacific Ocean's "Ring of Fire." However, earthquakes, tsunamis, and volcanic eruptions pose a less frequent threat to the country than do typhoons, droughts, and landslides. FSM is also vulnerable to pandemic diseases, fires, and sea level rise. Indeed, climate change is already driving sea level rise, and the FSM population is already experiencing shortages of drinking water and food insecurity. In addition to sea level rise, climate change-influenced shifts in winds and ocean temperature as well as ocean acidification will impact fisheries while extreme events can damage maritime, air, and telecommunications infrastructure.

Most of the population of FSM lives close to the coast. Thus, critical infrastructure is located primarily in the coastal zone, which is threatened by rising sea levels and typhoons. While roads are crucial for on-island transport, sea and air links provide hubs for inter-island and international travel and commerce. All of these links are under intense pressure under normal circumstances. When a disaster occurs, already strained transport links can be further disrupted either because they have been damaged or because they have insufficient capacity to handle an influx of people and goods.

Because of its exposure to hazards and likely increasing vulnerability under various climate change scenarios, the country has instituted a disaster risk reduction (DRR) and climate change adaptation (CCA) program that delineates responsibility for both governments and communities.

In addition to providing political direction in the form of policy development, the National Disaster Committee (NDC) undertakes coordination in the event of a disaster. Primary decision-making responsibility lies with the President, who may declare a state of disaster upon request by a state Governor. Each Governor holds the primary decision-making power for preparedness and response while State Disaster Committees are responsible for planning for disasters and providing overall management of the response. Beneath the state level are local Disaster Management Committees and local customary leaders. During disasters, operations are handled through National and State Emergency Operations Centers (NEOC and SEOC). Alongside the government structures, a network of international agencies, national stakeholders, and non-government organizations (NGO) operates. It is coordinated by the International Organization for Migration (IOM) and has oversight from the United Nations (UN) Resident Coordinator.

Under the Compact of Free Association (COFA) between the United States (U.S.) and FSM, the U.S. Agency for International Development's Bureau for Humanitarian Assistance (USAID/BHA) and the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) have developed an operational blueprint, which guides humanitarian assistance in the event of a significant disaster in FSM. USAID/BHA supports life-saving activities in response to natural disasters and provides technical assistance to coordinate response and early recovery activities. The USAID-FEMA hybrid approach provides the majority of financing for disaster management and reconstruction. The approach is to strengthen the capabilities of first responder agencies, enhance and expand end-to-end early warning systems, and improve preparedness in at-risk communities.[1]

Early warning and weather services are supported by the U.S. National Weather Service and National Oceanic and Atmospheric Administration (NOAA). Moreover, the U.S. has full authority and responsibility for defense and security matters. In case of a disaster or other emergency that rises to the level where both FSM authorities and the U.S. Embassy in FSM recognize a need, various U.S. government agencies can deliver assistance in FSM.

COUNTRY OVERVIEW

Micronesia, the name of which is Greek in origin (mikros 'small' and nēsoi 'islands'), includes the westernmost of the Pacific Islands. The Federated States of Micronesia (FSM) is comprised of four states from west to east, Yap, Chuuk, Pohnpei, and Kosrae, and consists of over 600 small islands and atolls in the Caroline Islands archipelago (Western Pacific), approximately 5,633 kilometers (km; 3,500 miles) southwest of Hawaii. With the exception of Kosrae, all states have inhabited outer-island atolls.[2] The country's land area is small at 710 square km (km^2; 274 square miles). Individually, the states' land areas are Yap 124 km^2 (48 square miles), Chuuk 127 km^2 (49 square miles), Pohnpei 344 km^2 (133 square miles), and Kosrae 111 km^2 (43 square miles).[3] However, the country as a whole occupies more than 2.5 million km^2 (1 million square miles) of the Pacific Ocean.[4] Figure 1 is a map depicting FSM island groupings by state.[5]

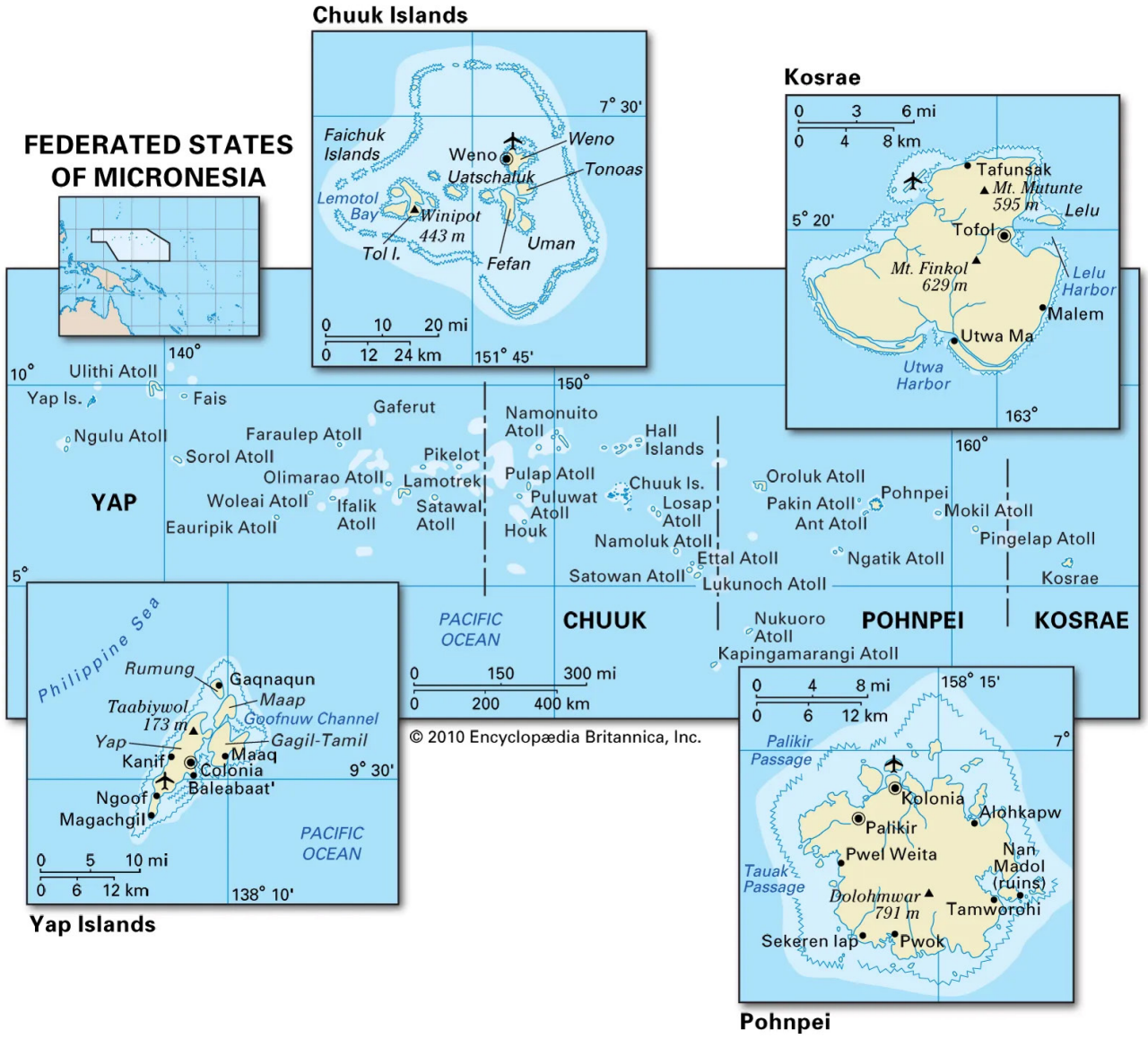


Figure 1: Map of Federated States of Micronesia

History

People first settled the islands that today make up FSM sometime between 3,500 and 2,000 years ago. Pottery dating to about the 1st century CE has been found in Chuuk, and similar artifacts have been discovered on eastern islands of FSM. Meanwhile, Yap appears to have been settled from the west, possibly from the Philippines or Indonesia, and pottery and shell adzes found there date from the 2nd century CE.[6] These islands and others in the Caroline archipelago – e.g., the Marshall Islands or Vanuatu – of the western Pacific underwent centuries of semi-isolation although they were never entirely cut off as there remained sail-borne interaction among them. Levels of stratification among the societies of the islands varied, and there is no evidence of a centralizing force covering all of FSM until more recent centuries.

The islands that make up what is now FSM were occasionally visited by whalers and traders until the Spanish named the entire archipelago for King Charles II (thus, the Carolines) in the 16th century. The succeeding centuries saw the islands being used by outside powers to gain military influence.[7] In 1886, the Spanish formally colonized the Carolines, but that arrangement ended in 1899 when the islands were sold to Germany at the conclusion of the Spanish-American War. With the outbreak of World War I, Germany yielded the islands to Japan, which gained formal title to them in 1920 as a League of Nations mandate. Japan first attempted to develop the islands' economy; however, later it used the islands as an outlet for surplus population and then fortified them just before World War II.[8]

After the U.S. defeated Japan in the Pacific, and following World War II, the United Nations (UN) awarded Micronesia, along with Palau, the Marshall Islands, and the Northern Mariana Islands, to the U.S. as a trust territory. By the late 1970s, the Marianas, Marshalls, and Palau had voted to separate from the trust territory, and the "inner states" of Yap, Chuuk, Pohnpei, and Kosrae undertook a Constitutional Convention in 1978. They formed a republic in 1979, and a 1983 plebiscite approved a Compact of Free Association (COFA), which came into effect in 1986. The COFA allowed FSM internal self-government while the U.S. retained authority over defense and security policy. The COFA – and its 2004 renewal with amendments – also provided for decades of development aid to be paid from the U.S. to FSM.[9]

Culture and Demographics

Traditional dances are still practiced in FSM. The people of Yap and a few outlying atolls in Chuuk wear traditional dress. These are loincloths for men and grass skirts or lavalavas (sarongs) for women. Subsistence farming and fishing are practiced in rural areas. Still present are traditional food-preparation techniques and community meetinghouses for ceremonies and activities. In addition, boatbuilders in some of the remote atolls and islands, such as Satawal in Yap state, still build and navigate large single outrigger canoes, shown in Photo 1.[10] Wood carving, originally practiced for



Photo 1: A Micronesian Outrigger Canoe

religious purposes, has become a commercial enterprise. While the people living in FSM predominantly have Micronesian roots culturally and linguistically, there are Polynesian influences as well as European and Japanese ones due to colonization.[11]

Ethnic Makeup

Almost 100% of the FSM population is composed of Pacific Islanders and Asians. A small minority has Japanese ancestry because of Japanese settlers marrying Micronesians during the Japanese colonial period in the early 20th century. Approximately 6.4% of the country is made up of expatriates coming from the U.S., Australia, and European countries. The largest ethnic group is the Chuukese, who make up nearly half of the total population. The estimated ethnic composition of FSM is:

- 48.8% Chuukese
- 24.2% Pohnpeian
- 6.2% Kosraean
- 5.2% Yapese
- 4.5% Outer Yapese (Yap State outer islands people are descendants of Micronesian settlers, and as such have significant ethnic dissimilarities from the people of the Yap Main Islands)
- 1.8% Asian
- 1.5% Polynesian
- 6.4% Other
- 1.4% Unknown[12]

Key Population Centers

The population of FSM is approximately 105,000 people. Population density is relatively low at approximately 158 people per km^2 (410 people per square mile). Palikir, on Pohnpei Island, is the national capital and has a population of 7,000.[13] Approximately half of the total population resides in Chuuk State. Approximately one-third of the population lives on Pohnpei and one-tenth live on each of Yap and Kosrae.[14] Approximately 77% of the population lives in rural areas.[15]

Language

In general, the languages of Micronesia are from the Austronesian family of languages. The languages of the eastern and central islands of greater Micronesia are closely related to Austronesian languages that exist to the southeast in Melanesia. Although still from the Austronesian family, the languages spoken in the western islands (Palau, the Marianas, and Yap), are not closely related to those in the east nor to one another.[16] A major exception is the language of the inhabitants of Kapingamarangi and Nukuoro, two atolls in the southwestern portion of Pohnpei state, where the people are Polynesian and speak languages unrelated to Pohnpeian.

Altogether, eight local languages are recognized as distinct, but there is great variety due to differences in dialect among the outer islands.[17] Only Kosrae appears linguistically unified.[18] English is commonly spoken in FSM.

Religion

Christianity is the most followed religion. On Chuuk and Yap, the majority of residents are Catholic. Pohnpei's population is evenly divided between Catholics and Protestants. On Kosrae, the majority of inhabitants are Protestant.[19] According to government statistics, 55% of long-term residents are Catholic and 42% are Protestant. The main Protestant denomination is the United Church of Christ. Other Christian groups include Baptists, Assemblies of God, the Pentecostal Church, the Apostolic Church, the Salvation Army, The Church of Jesus Christ of Latter-day Saints, Seventh-day Adventists, and Jehovah's Witnesses. Small numbers of other religious groups include approximately 45 Ahmadi Muslims, with a variable expatriate population of Baha'is, Buddhists, Hindus, Jews, and other Muslims. An estimated 2.7% of the population follow folk religions.[20]

The constitution prohibits the establishment of a state religion or governmental restrictions on freedom of religion and provides for the free exercise of religion. In addition, it also provides that the traditions of the country may be protected and free to practice.[21]

Vulnerable Groups

In the Pacific including FSM, cyclones, floods, and droughts are becoming increasingly unpredictable and extreme, with devastating effects. Research has shown that women and children are 14 times more likely than men to die or be injured in a disaster. Furthermore, women also face increased risks of sexual and gender-based violence; unequal access to humanitarian assistance such as food and shelter; loss of economic opportunities; and increased workloads in a disaster or emergency.[22] While this section focuses on women and children, other social, economic, or physical characteristics may make people more or less vulnerable in times of emergency.

Women

There is varied information collected regarding the levels of violence against women as data is not consistently disaggregated by sex, age, or even disability. However, in the Pacific region, up to two of every three women have experienced physical or sexual violence. This number is double the global average and has been observed to worsen during disasters.[23] In FSM, 21.1% of women aged 15-49 years reported that they had been subject to physical and/or sexual violence at the hands of a current or former intimate partner in the previous 12 months (2018 data). A 2020 report revealed unpaid care and domestic work, pay gap, poverty, physical and sexual harassment, and women's access to assets (including land) as inequality indicators.[24]

There is no domestic violence or sexual harassment legislation in place, and fault-based divorce is the legal norm across all four states in FSM. In Pohnpei, sexual assault allegations are inadmissible if the complainant and offender live together in a voluntary sexual relationship. The common law rule requiring proof of physical resistance in order to establish absence of consent is still applied across the states. In addition, a victim's testimony without corroboration often does not support conviction and a United Nations Development Assistance Framework (UNDAF) country assessment report suggests customary law in FSM can override civic legislation where there is conflict between them.[25]

Micronesian women and girls have been vulnerable to sex trafficking through family and outside the family. Sex traffickers exploit Micronesian women and girls through commercial sex with crewmembers of docked Asian fishing vessels, crewmembers on vessels in FSM territorial waters, or with foreign construction workers. In addition, traffickers recruit FSM women and men with promises of well-paying jobs in the U.S. and its territories, but upon their arrival they may be forced into commercial sex, domestic servitude, or forced labor.[26]

Children

While neonatal mortality, infant mortality, and under-five mortality rates in FSM have been declining for decades, FSM has not been able to meet international development goals related to child mortality. Infant mortality rates are also likely to be underreported as infant deaths on the outer islands are typically not recorded.[27]

FSM does not have any national strategy or plan of action for children; rather, each department at the national level has its own strategies and plans in relation to its support for children's programs.[28] In addition, there are limited social welfare services for children who have experienced violence, abuse, neglect, or exploitation. An FSM Child Protection Baseline Study notes that that some counselling is available through the Division of Social Affairs and the local community. However, the study found that welfare services for children were poorly coordinated and there was inadequate support, coordination, and supervision by government agencies delivering the programs. One barrier to reporting is community perceptions that violence is a private family matter.[29] Incest and child abuse both exist in FSM but are believed to be under-reported due to cultural sensitivities. Furthermore, there is no national legislation criminalizing

sexual assault; however, each state has identical legislation criminalizing both sexual assault with penetration and sexual intercourse with girls under 13 years of age.[30]

Economics

Natural disasters are a threat to economic development. According to the World Bank, out of the twenty countries with the highest average annual disaster losses globally (scaled by Gross Domestic Product; GDP), eight were Pacific Island Countries and Territories (PICT): FSM, Vanuatu, Niue, Tonga, Solomon Islands, Fiji, the Marshall Islands, and the Cook Islands.[31]

FSM's population and economy are largely dependent on the ecosystem and are particularly focused on subsistence and commercial fishing. The dietary staples are breadfruit, taro, coconuts, bananas, yams, and cassava; sweet potatoes also are grown on some of the high islands. Poultry, pigs, and dogs are often food sources. Much of FSM's food, including rice, fruits, vegetables, meat, and fish, as well as almost all manufactured goods and fuel oil must be imported. Local commercial fishing is developed only on a small scale.[32]

U.S. government grant aid is the main source of revenue based on provisions in the COFA. External grants account for almost two-thirds of revenue. Under the amended COFA, the U.S. claims an indefinite right of exclusive territorial control, and FSM in turn, remains dependent on the U.S. for security and economic aid.[33] Under the terms of the original Compact, the U.S. provided US$1.3 billion in grants and aid from 1986 to 2001. The two countries negotiated a second (amended) Compact agreement, effective in 2004. The amended Compact runs for a 20-year period to 2023; during this 20-year period, the U.S. committed to providing some US$2.1 billion to the FSM. The amended Compact also develops a trust fund that will provide a comparable income stream beyond 2024 when Compact grants end.[34]

The services sector – including government employment – is a large source of income. The government also derives revenue from fishing rights sales. Tourism is slowly expanding; however, the islands' remote location and an underdeveloped infrastructure affect this growth.[35] Yap is known for scuba diving as well as cultural attractions, making tourism a major engine of economic growth. Marine products are the primary export; other significant exports are garments, betel nuts, and copra (dried coconut flesh).[36] Chuuk's islands are also popular with scuba divers, as the lagoon's shipwrecks are desirable dive sites.[37]

The islands have few commercially valuable mineral deposits. FSM exports of goods and services make up only about 27.5% of GDP, while imports account for 77%. The unemployment rate is 16.2%. Approximately 41% of the population lives below the poverty line. Export partners include Thailand (73%), Japan (10%), and China (9%). Export commodities include fish and fish products, coral/shells, scrap metals, mollusks, and office machinery/parts. Import partners include the U.S. (32%), China (16%), Japan (14%), Taiwan (9%), Philippines (6%), and South Korea (6%).[38]

Government

The Government of FSM, under the 1979 constitution, consists of executive, legislative, and judicial branches. The majority of government functions – beyond defense and foreign affairs – are carried out at the state rather than the national level. Each of the four state governments (Yap, Chuuk, Pohnpei, and Kosrae) has an elected governor and a unicameral legislature; there are no political parties.

The judicial system consists of the Supreme Court of the FSM, state courts in each state, and municipal courts in each political subdivision of each state. Customary law is in force where it does not conflict with constitutional law.[39]

The FSM government conducts its own foreign relations, consistent with the terms of the Amended Compact; the U.S. has full authority and responsibility for defense and security matters. Eligible FSM citizens can travel to the U.S. without visas to live, work, study, and serve in the U.S. Armed Forces.[40]

Environment

The islands and atolls of FSM are scattered across 2.5 million km^2 (1 million square miles) of the Pacific Ocean 5,600 km (3,500 miles) west-southwest of the Hawaiian Islands. There are no land borders with other countries, and FSM's more than 600 islands have more than 6,000 km (3,700 miles) of coastline, The country enjoys a relatively consistent tropical climate with trade wind-moderated dry and wet seasons.

Geography

The islands that make up FSM are characterized as two types: low coral atolls with poor soil and high islands formed by volcanic activity or geological uplift.[41] Some islands are tips of mountain peaks surrounded by fringing reefs. Others are atolls or islands that have sunk beneath the surface, leaving a ring of coral barrier reef and tiny islets. Some islands are mixtures of atolls and high rugged islands within a lagoon.[42]

Yap

Yap State is made up of four large islands, seven small islands, and 134 atolls, with a total land area of 118 km^2 (45.6 square miles).[43] The archipelago comprises the islands of Gagil-Tamil, Maap, Rumung, and Yap within a coral reef. Yap has a central range of hills rising to Mount Taabiywol at 173 meters (m; 568 feet) and is thickly wooded.[44]

Chuuk

Chuuk State has a total land area of 127 km^2 (49.2 square miles) and includes seven major island groups.[45] Chief islands are Weno (formerly Moen), Tonoas, Fefan, Uman, Uatschaluk (Udot), and Tol. The high islands of the Chuuk group have mangrove swamps along their coasts and rainforests in the central mountainous areas. The Chuuk Islands are encircled by a barrier reef composed of some 85 sand and coral islets. The reef encloses a lagoon that is 2,129 km^2 (822 square miles) in area and has a diameter of some 65 km (40 miles).[46]

Pohnpei

Pohnpei State has 345.5 km^2 (133.4 square miles) of land area, of which 337 km^2 (130 square miles) is accounted for by Pohnpei island.[47] Pohnpei is surrounded by a barrier reef with many small islets. Situated near Pohnpei are the low-lying coral atolls of Oroluk, Pakin, and Ant to the west; Ngatik, Nukuoro, and Kapingamarangi to the southwest; and Mokil and Pingelap to the east. The island has heavy rainfall, fertile soil, and tropical foliage.[48]

Kosrae

Kosrae is one high island of 110 km^2 (42.3 square miles).[49] It is characterized as being volcanic in origin and is hilly, rising to 629 m (2,064 feet). Kosrae produces taro, oranges, breadfruit, bananas, and timber.[50]

Borders

FSM has no land borders and shares its maritime borders with the Marshall Islands, Palau, Papua New Guinea (PNG), and Guam. The island nation is situated to the northeast of PNG; to the south of Guam and the Marianas; to the west of Nauru and the Marshall Islands; to the east of Palau and the Philippines; to the north of Eastern Australia; to the southeast of Japan and to the southwest of the Hawaiian Islands.[51]

Climate

FSM has a tropical climate with relatively even, warm temperatures throughout the year. Average temperatures are 28 degrees Celsius (°C) / 80 degrees Fahrenheit (°F) year-round, with highs in the low 30s °C (high 80s °F) and lows in the high 20s °C (high 70s °F). The rainfall on each island varies during the dry and wet seasons but is heaviest during the summer months. Trade winds come mainly from the northeast from December through June. Pohnpei is one of the wettest places on Earth, receiving up to 838 centimeters (cm; 330 inches) of rain per year.[52]

DISASTER OVERVIEW

FSM is in the Pacific "Ring of Fire" where tectonic and geologic activities drive volcanism and seismicity. The country is prone to typhoons, droughts, and landslides, and it is vulnerable to pandemic disease, fire, earthquake, sea level rise, and tsunami. Many hazards, when they occur, have sequelae that further claim human lives and damage the built and natural environments. For example, landslides are triggered by earthquakes, floods, volcanic eruptions, or typhoons, and these landslides sometimes bring more damage and loss of life than the primary event. Climate change is causing sea level rise, and the population is already experiencing shortages of drinking water and food insecurity. Threats to the environment and biodiversity stem not only from natural hazards but also from overexploitation, habitat loss, climate change impacts, pollution, invasive species, and infrastructure development.

Climate Change

The negative impacts of climate change are already evident in FSM. Saltwater intrusion, extreme weather events, and drought damage crops, contaminate freshwater supplies, and force formerly self-sustaining atoll communities to rely on imported food and water. Extreme king tides cause intense coastal inundation that damages taro beds, soil, agroforestry resources, and critical infrastructure along the coast. Increases in sea level, strong winds, ocean temperature rises, and ocean acidification impact fisheries that depend on coral reef ecosystems, mangroves, and wetlands that also protect villages and communities from storms and flooding. Finally, extreme events damage maritime, air, and telecommunications infrastructure upon which FSM depends for food, water, energy, and emergency services.

FSM's contribution to global greenhouse gas (GHG) emissions is miniscule (0.003% of global emissions), but it confronts heightened risk from climate change-influenced hazards. Thus, mitigation is the primary thrust of national climate change-related commitments, which FSM views as a means to build credibility in international dialogue on the Paris process in the expectation that this credibility and engagement will allow it to leverage external finance, to mobilize domestic revenues, and to reduce dependence on expensive imports from volatile international oil markets. It its 2019 Climate Change Policy Assessment for FSM, the International Monetary Fund (IMF) found that FSM is particularly vulnerable to the impacts of climate change and is likely to suffer serious adverse environmental, social, and economic losses. The Global Climate Risk Index (CRI) ranks FSM as having been the third most at risk country among peer Pacific Island countries over the longer term (1998–2017).[53] More details are included in the Country Risk section of this handbook.

As of 2022, rising temperatures and sea levels are the primary concerns for FSM under the climate change rubric. The latest climate model (General Circulation Model) projections and climate science findings indicate that El Niño and La Niña events will most likely continue to occur through the end of the 21st century. In FSM, annual average temperature and extremely high daily temperatures will continue to rise while the yearly average rainfall is expected to increase and to result in more extreme rain events. The sea level will continue to rise.[54] Under a very high emissions scenario, the Pacific-Australia Climate Change Science and Adaptation Planning Program projects:

- Temperature increases of 0.6–1.1°C (1.1–2.0°F) by 2030
- Annual and seasonal mean surface air temperature increases of up to 2.5°C (4.5°F) by 2090
- An increase of at least 5% in wet season, dry season, and annual rainfall by 2090; and
- A rise in sea level in the range of 41–90 cm (16.1–35.4 inches) by 2090.[55]

For the next 20 years, the predicted warming trend is similar across GHG emissions pathways – i.e., Representative Concentration Pathways (RCP).[56] The RCPs try to capture future trends in temperature, sea level, and extreme weather, and they make predictions of how GHG concentrations in the atmosphere will change as a result of human activities. The four RCPs range from very high (RCP8.5) to very low (RCP2.6), and the numerical values of the RCPs (2.6, 4.5, 6.0, and 8.5) refer to the GHG concentrations in the year 2100.[57] Despite a seemingly set path for conditions through 2040, there are marked differences later in the century depending on scenario; by 2050, average temperatures are expected to be 0.8°C (1.4°F) higher under RCP2.6 but 1.4°C (2.5°F) higher under the high emissions RCP8.5. By 2070, those rises are 0.8°C (1.4°F) higher under RCP2.6 and 2.2°C (3.96°F) higher under RCP8.5, relative to temperatures from the period 1986-2005. Data from Pohnpei and Yap already demonstrate increased average temperatures in both locations, with the most robust trend of +0.24°C (+4.3°F) per decade since 1950 in Pohnpei during the wet season. Waters around the FSM have been warming by approximately 0.11°C (0.2°F) per decade in the eastern regions of the FSM and by 0.8°C (1.4°F) per decade in the western areas since 1970.

Since 1993, there has been a sea level rise of over 10 millimeters (mm; 0.39 inches) per year, far more significant than the global average of 2.8-3.6 mm (0.11-0.14 inches) per year. Rising sea levels erode coastlines, threaten the fishing industry, and contaminate drinking water with salty ocean water. Under a high global emissions pathway, research suggests that Antarctic ice sheets may contribute to more extraordinary sea level rise, and such projections indicate an increase in height of 0.09-0.18 m (3.5-7.1 inches) by 2030 and an increase of 0.66-1.23 m (25.9-48.4 inches) by 2100 under RCP8.5. The Intergovernmental Panel on Climate Change Sixth Assessment Report emphasizes that a "low likelihood high impact" outcome of much higher sea level rise under the high emissions pathways cannot be excluded.[58]

Broadly, increases in temperature and intensified extreme weather events have the potential to lower agricultural output, increase vulnerability of critical infrastructure that threatens loss of access to basic services, depress labor productivity, and affect human health. Continued sea level rises will impact coastal infrastructure and settlements located on or near the coast. More specifically, the IMF assesses that tropical countries like FSM can expect adverse macroeconomic consequences due to disruptions to critical agricultural sectors and to overall labor, thereby impacting capital accumulation and undermining GDP growth. In part, this assessment is fed by expectations of more extreme hydrometeorological events that have massive impacts like those caused by 2015's Typhoon Maysak. That storm caused damage totaling about 3.5% of GDP; similar storms striking already destabilized or vulnerable areas could result in a GDP drop of up to 5%.

With this future in mind, FSM has advanced its process of documenting climate-related risks, developing relevant policies and plans, and establishing and strengthening national and state institutions responsible for managing climate related risks. The overarching program is the 2004–2023 Strategic Development Plan, supplemented by the 2013 adoption of the Nation-Wide Integrated Disaster Risk Management and Climate Change Policy and the 2014 FSM Climate Change Act. Within this context, FSM developed its Nationally Determined Contributions (NDC) under the Paris Agreement. The NDC focuses on FSM's pledges to reduce emissions and sets out an agenda for usage of renewable energy, as detailed in Table 1.[59] However, FSM is subject to significant uncertainty related to the post-2023 relationship with the U.S. with implications for capacity to address climate change. Under the COFA, the U.S. provides the FSM with various grants to support specific public services, annual contributions into the Compact Trust Fund, and assistance for activities such as post-disaster relief and reconstruction. Assuming FSM will lose access to these supports after 2023, FSM

is expected to face a fiscal cliff in 2024 after which it will experience a severely constrained fiscal space, including for climate resilience investment.[60]

Institutional changes have been made to raise the profile of CCA. In 2018, the government established the Department of Environment, Climate, and Emergency Management (DECEM) to signal heightened commitment to CCA issues previously covered under the broader remit of the Department of Resources and Development. DECEM is responsible for developing and mainstreaming CCA and disaster management policies. It oversaw the development of a Green Climate Fund (GCF) country work program, which refined and built on the projects in federal infrastructure plans. However, there is not yet a comprehensive and consolidated National Adaptation Plan (NAP).[61]

Hazards

The most common hazards that FSM experiences are typhoons, landslides, and drought, and it confronts earthquakes and sea level rise, but it is also vulnerable to disease outbreaks, fire, food insecurity, and tsunami. The El Niño Southern Oscillation (ENSO) influences the formation of typhoons, the distribution of rainfall, and the height of sea level in the western Pacific. In general, typhoon activity is higher in the western FSM states compared to the east. Figure 2 shows the average annual occurrence for various disaster events throughout the country.[62] There is some difference among the four states, and Table 2 shows the main hazards looming over each of the states.[63]

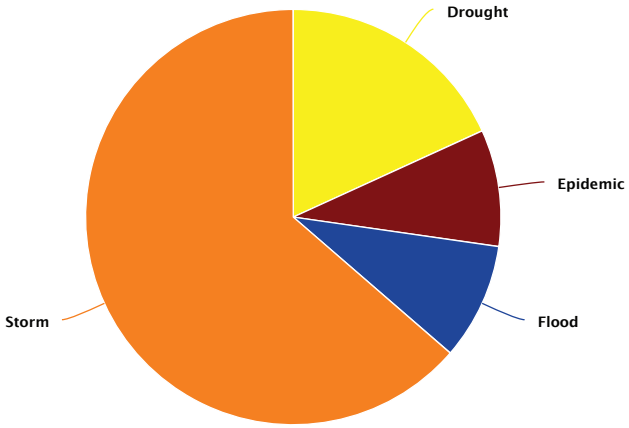


Figure 2: Average Annual Occurrence of Disasters in FSM (1980-2020)

Drought

The ENSO has a strong effect on precipitation in Micronesia, with strong El Niño events corresponding closely with an increased risk for drought in the following year. Despite typically plentiful rainfall (Pohnpei is one of the wettest places on Earth), the islands of FSM have limited water storage capacity and small groundwater supplies. The states have experienced several

Sector	Mitigation Objective	Proposed Actions
Renewables	Increase share of renewable energy sources to 30% of generation mix	Invest in renewable generation leading to an additional 45 megawatts (MW) of solar power over the next 20 years
Electricity	1. Reduce energy losses such that generation efficiency increases by 20% 2. Increase energy efficiency by 50% by 2020	1. Commission more fuel-efficient diesel generators and other measures to reduce technical losses (e.g., upgrading of overhead lines) 2. Energy awareness campaign for households 3. Procure inverter air conditioners for government 4. Small program subsidizing loans for energy efficient home design

Table 1: Micronesia's Climate Change Mitigation Objectives and Proposed Actions

State	Hazards
Chuuk	Drought, typhoon and tropical storm, storm waves, flooding, landslide, sea surges
Kosrae	Tropical storm and typhoon, drought, landslide, high tides, sea swells, storm surges, sea level rise
Pohnpei	Drought, variable rainfall, landslide, El Niño typhoons
Yap	Typhoon, flooding, drought, sea surges, earthquake

Table 2: Hazards Confronted by Each FSM State

severe droughts in recent times - 1982-83, 1992-93, 1997-98, 2007-08, and 2015-16.[64] FSM's Second National Communication to the UNFCCC highlights that almost all extremely dry years occur during the year following an El Niño event, and in some years, drought conditions have continued through the wet season. According to the Emergency Events Database (EM-DAT), the worst two disasters to affect FSM have been droughts. In 1998, drought associated with El Niño affected some 28,800 persons. The 2015-16 El Niño induced a moderate to severe drought, estimated to have affected 100,000 persons, i.e., about 96% of the total population. Drought events have also led to food shortages, wildfires, threats to local biodiversity, and water rationing.[65] According to global climate model projections, drought frequency is projected to decrease.[66]

Yap is drier than the other states and is highly susceptible to drought. While the main island of Yap possesses adequate groundwater sources, during prolonged droughts such as the 1997-98 event, these water sources have been known to dry up. The lack of adequate water storage capacity on outlying islands increases vulnerability to the impacts of drought.[67] Pohnpei is vulnerable to periods of low rainfall (sometimes associated with El Niño events), and climate change and potential alterations to rainfall patterns pose a moderate risk to water resources through enhanced or prolonged drought. Like Yap, Pohnpei's outlying islands often have limited groundwater, and any reduction in rainfall leaves them prone to water shortages.[68] Kosrae has experienced three severe droughts in recent times, in 1982-83, 1992-93 and 1997-98. All three were linked to El Niño.[69] Chuuk has experienced significant drought, as in 2007-08. Rainfall in the winter and spring of the year following an El Niño tend to see only about three-quarters of average rainfall.[70] However, under current climate change projections, Chuuk is expected to see less frequent drought with up to a 10% increase in annual rainfall by 2090.[71]

Earthquake and Tsunami

FSM is in the Pacific "Ring of Fire," where volcanic and seismic activities are frequent. The highly active seismic zones of the region have the potential to generate large earthquakes and sometimes significant tsunamis that can travel far distances. FSM has a history of earthquakes, and large tsunamis were recorded in 1837, 1849, and 1899. Yap is considered the area at highest risk of earthquake and is projected to experience light to moderate levels of ground shaking in the next 50 years.[72] Yap, located near the Yap and Mariana Trenches, has experienced four significant earthquakes in recent times. Yap also has a high probabilistic tsunami hazard; however, no recorded instances of significant tsunami damage are recorded.[73]

Epidemic / Pandemic Disease

The population is susceptible to risks of infectious diseases, including chikungunya, dengue, Hansen's disease (leprosy), HIV/AIDS, leptospirosis, tuberculosis, and Zika. The possibility of hospital disruptions could result in worse health outcomes during disasters.[74] Outbreaks of vector-borne diseases in recent years include dengue in 2004, 2007, and 2011, and a Zika outbreak in 2007.[75] Other infectious disease outbreaks – measles and Coronavirus Disease-2019 (COVID-19) – demonstrate the potential for under-vaccinated communities, multi-generational households, and a lack of available health care to combine and cause significant mortality.

Flooding

Pohnpei is vulnerable to projected periods of increased rain and has inadequate drainage infrastructure to manage current water flows, let alone increased rainfall.[76] Most occurrences of extreme sea level events at both Pohnpei and Chuuk are primarily due to a combination of extreme tides and La Niña conditions. Chuuk, with a higher June tidal maximum, has a higher likelihood of extreme water levels during that month.[77] Combined with natural variability, sea level rise will enhance impacts of storm surges

and flooding in Kosrae where approximately 97% of all current high tides are less than 2 m (6.6 feet) high. Sea level rise will alter these statistics with projections seeing the 2 m (6.6 feet) high tide level exceeded by 12% of all high tides (2030), 27% of all high tides (2050), 69% of all high tides (2070), and 95% of all high tides (2090).[78] In Yap, rainfall is projected to increase by approximately 10% by 2090, and more intense rainfall events are expected and could overwhelm drainage and cause flash flooding events. Meanwhile, in Yap, sea level is projected to increase by 406-889 mm (16-35 inches) by 2100. Although tide gauge data indicates a less significant sea level rise than global average since 1969, this difference is largely accounted for by tectonic uplift in Yap, and the future trends on this score are not well understood.[79]

Food Insecurity

Food security is a growing concern in FSM where increasing land pressures strain agricultural efforts and food supply even as coastal erosion and increased incidence of pests and disease undermine the productivity of major crops.[80] Moreover, there is a high correlation between fish catch and sea surface temperatures and ENSO events. Pelagic fish leave the region with rising temperatures, and, since fisheries are a key economic sector, FSM could experience severe economic and food security setbacks due to more frequent and extreme warming events.[81] A decline in agriculture, fishing, and local food production over the last 50 years has already worsened food security. People incorporate more processed and imported foods because of cost, convenience, and lack of access to fresh food. This degradation in nutrition will carry health, financial, social, and environmental costs.[82]

Agriculture accounts for 28.9% of FSM's GDP, and in 2005, subsistence activities amounted to 18% of total household income. Because of the country's small size and limited biodiversity, crop substitution abilities are limited, as are abilities to store crops and food. A lack of transportation to and from outlying islands can make internal distribution difficult. Rising sea levels have flooded taro crops and destroyed coconut trees, but saltwater resistant crops are not generally available in the FSM. Chuuk is particularly vulnerable because it contains 50% of FSM's population but only 12% of its arable soil.[83] In December 2021, the Chuuk State Governor declared the State of Emergency due to damage caused by king tides. The worst affected islands faced water and food security challenges that impacted approximately 10,000 people. In 2020, there were high concerns as the COVID-19 pandemic disrupted global food supply chains. Although most people reported that there was enough food on Kosrae and Yap, COVID-19-related flight and shipping restrictions raised the possibility of shortages. Some people reported increases in tinned fish and rice prices, particularly in Yap.[84]

Landslide

Landslides are often considered secondary disasters triggered by earthquakes, floods, or typhoons. As deforestation is expected to worsen, the probability of landslides rises.[85] While all islands are at risk of land or mud slides, Chuuk is at high risk as its steep volcanic topography and exposure to heavy rains and storms mean that deforested and built-up slopes are at risk of collapse.[86] The most devastating event occurred in July 2002, after Tropical Storm Chataan struck Chuuk. More than 250 landslides were triggered across the eastern islands of Chuuk State after nearly 500 mm (20 inches) of rainfall in less than 24 hours. There were 43 deaths, and 231 structures, including homes, schools, community centers, and medical dispensaries were damaged. Landslides also buried roads, crops, and water supplies. Most of the failures began as slumps and transformed into debris flows, some of which traveled several hundred meters across coastal flatlands into populated areas. Similar storms are likely to occur in the future.[87]

Typhoons and Storms

FSM experiences a typhoon season every year, and it occasionally suffers damage with the western islands of Yap seeing the most frequent

damage. However, Kosrae, Pohnpei, and Chuuk are also prone to heavy rains and strong winds.[88] Yap is regularly hit by typhoons (especially during June–December), with between three and five typhoons hitting the state each year,[89] and western areas of Chuuk are at somewhat high risk.[90] Research suggests that during El Niño periods, Pohnpei has a heightened risk of typhoons as they tend to form just east of Pohnpei. There is a decreased risk in the year following an El Niño and in La Niña years as storms tend to form further to the west.[91]

Historical data indicates that there were at least 248 tropical cyclones developing within or crossing FSM between 1977 and 2011, for an average of 71 cyclones per decade although there is a high interannual variability. Since 1981, there have been 212 tropical cyclones, of which 37 (17%) were Category 3 or higher. Current projections indicate a decrease in cyclone frequency for the region by 2100. The EM-DAT database highlights that there have been at least seven tropical cyclones that have led to officially designated disasters within FSM since 1900. Tropical storms top the list of costly disaster events, with events in 1987 and 2015 having estimated economic damage tallies of US$6 and US$11 million, respectively. Storm damage is related not only to rainfall but also to sequelae such as landslides and sea salt deposition, with the latter leading to agricultural damage and power outages due to electrical shorts and corrosion.[92]

History of Natural Disasters

The following is a list of major disasters in FSM over the last ten years.

2020-2022 – COVID-19 Pandemic

FSM did not report its first confirmed cases of COVID-19 until July 2022 after which it saw a swift multiplication of cases, hospitalizations, and deaths. Although authorities heavily relied upon geographic isolation and travel controls to keep the disease at bay, it also swiftly ramped up vaccination once shots were available.[93] Moreover, it began receiving medical equipment and supplies from partners early in the pandemic. On 14 April 2020, the Secretary of the Department of Health and Social Affairs and Chair of the COVID-19 Task Force met with the Ambassador of the People's Republic of China (PRC) to receive medical supplies and a cash donation of US$100,000 to assist the FSM in combatting COVID-19.[94] On 30 April, President Panuelo and Vice-President George met U.S. Ambassador Cantor who formally submitted to the President and Vice-President a check for US$7.7 million, FSM's share of the U.S. Coronavirus Aid, Relief, and Economic Security Act funding. The FSM National Government expected to use the funding for procurement of essential supplies and equipment. In the COVID-19 Task Force meeting later the same day, it was agreed how each of the four States would receive their share of the funding.[95] Just one week later, on 7 May, Ambassador Cantor was received by Governor Oliver of Pohnpei and Secretary of Health Taulung in a handover ceremony celebrating the arrival of medical supplies, including 30 ventilators, to assist in implementation of the FSM's COVID-19 Response Framework. At the same meeting, Governor Oliver, in his capacity as Honorary Consul of the State of Israel to FSM, also delivered supplies received through partnership with Israel. The supplies included 2,000 surgical masks, 200 NK95 masks, four infrared thermometers, and 40 protective suits, to be distributed among Yap, Chuuk, Pohnpei, and Kosrae.[96] On 21 May, Secretary Taulung received the PRC Ambassador at a National Government warehouse to formally take government receipt of approximately 10,000 medical face masks, 200 sets of protective clothing, and 1,000 pairs of medical gloves, in addition to a US$50,000 cash donation. During May, China also donated US$20,000 of assistance directly to Pohnpei.[97] On 16 October, the FSM Secretaries of Foreign Affairs and Health met with the PRC Ambassador for a formal handover of 30 containerized isolation units, intended to hold

individuals who were either under investigation for COVID-19 or who had confirmed infections. The plan was for Pohnpei to receive ten units, Chuuk to receive twelve units, Kosrae to receive four units, and Yap to receive four units.[98]

Throughout the pandemic, USAID/BHA also delivered assistance to FSM, including via funding to Catholic Relief Services (CRS), which worked with local partner Caritas to disseminate critical information and educational materials about the virus, install handwashing stations and water tanks at strategic points on the islands, and distribute hygiene kits. In addition, USAID/BHA supported IOM programs to strengthen COVID-19 preparedness via awareness-raising activities, provision of medical supplies, handwashing promotion, and enhanced protection measures to ensure women, girls, and other vulnerable groups are prioritized in COVID-19 response efforts. USAID/BHA funding also went to the UN Children's Fund (UNICEF) to install or repair handwashing stations and water tanks, as well as providing soap, safe drinking water, and cleaning supplies in schools and day care centers, vulnerable communities, and high-traffic public places. UNICEF also conducted public messaging campaigns to share critical information about the virus and how to prevent its spread. Finally, to help Pacific nations overcome unique challenges to COVID-19 preparedness and response, USAID/BHA provided US$5 million to the UN World Food Program (WFP) to support the Pacific Logistics Cluster and the Pacific Emergency Telecommunications Cluster. The funding enabled the Clusters' work to increase logistics capacity and build more effective COVID-19 risk communication in the region through dissemination of vital information to remote areas.[99]

2019-2020 – Drought

During latter 2019 and most of 2020, FSM experienced drought due to a drier-than-normal seasonal trade-wind pattern that prevailed over the region and to ENSO-neutral weather conditions and abnormally warm water near the dateline.[100] Dry conditions began to impact Yap in October 2019, and April 2020 marked Yap's fourth consecutive month of extreme drought with precipitation totals below 101 mm (4 inches) of rain. The entire country encountered intense challenges in maintaining a safe water supply.[101] Indeed, on 5 October 2020, the Federated States Ship (FSS) Independence, as part of a joint National and State Government relief effort, arrived in Pohnpei's Kapingamarangi Atoll to deliver potable water and to desalinate more water to fill empty catchments. The Governor of Pohnpei had sent an urgent request on behalf of Kapingamarangi to President Panuelo to notify the President that Kapingamarangi had only approximately 3,785 liters (1,000 gallons) of water left in government catchments. In consultation with the Secretary of DECEM, the President instructed available Government assets to deliver potable water to Kapingamarangi. The FSS Independence reported 2,763 liters (730 gallons) of water delivered during the first day. The crew did report problems with desalination and sought technical assistance.[102]

The Pacific Community (SPC), with funding from the European Union – North Pacific – Readiness for El Niño project, worked with public water authorities in Yap to address infrastructure issues and help identify new water sources. SPC had begun this work in May 2019 when they assessed groundwater resources and met with the managers of the state's four water authorities and the utility company. They had also assessed the largest underground water reserve, the Gagil-Tomil Aquifer, and carried out pumping tests to determine the impact of current extraction rates on the aquifer and between wellfields. During a virtual meeting with Yap Water Authorities in May 2020, SPC shared its findings and highlighted the need for implementing long-term drought planning.[103]

2019 – Dengue Outbreak

By 9 October 2019, Yap State had reported 826 cases of dengue during the calendar year with two reported deaths. The outbreak had reached its peak in August when two weeks saw more than 100 cases diagnosed during each of the two reporting periods. During the

outbreak, the state's Health Crisis Task Force met weekly to coordinate multi-sectoral efforts toward prevention and awareness of the disease outbreak, and the State Department of Education distributed forms to all schools to report referrals to hospitals or of sick children being sent home. The State Environment Health Unit conducted home inspections for dengue cases, and they provided education and awareness during visits. The state closed schools during the August peak of the outbreak and then began distributing repellent to schools on the main island and hand soaps on the outer islands. Fumigation of all schools, airports, and most public places was completed in early October. The state response included public awareness campaigns on dengue prevention and control through radio announcements, distribution of brochures and posters, and a travel advisory.[104]

2019 – Typhoon Wutip

Typhoon Wutip passed over Pohnpei, Chuuk, and Yap between 19 and 22 February 2019 with winds of 120-130 km/hour (75–80 miles per hour) and gusts of up to 160 km/hour (100 miles per hour). Wutip hit the outer islands of Chuuk, including the 'Northwest' islands (Houk, Poluwat, Polap, Tamatam, and Onoun) and the 'Lower and 'Middle' Mortlocks, as well as the outer islands of Yap (Elato, Fechailap, Lamotrek, Piig, and Satawal) before continuing southwest and slowly dissipating. President Christian issued a Declaration of Disaster on 11 March and requested international assistance to respond to the damage caused by the typhoon. Consistent with the USAID/FEMA Operational Blueprint for Disaster Relief and Reconstruction in FSM, a Joint Damage Assessment (JDA) was carried out by representatives of USAID, the USAID Office of Foreign Disaster Assistance (OFDA, now BHA), FEMA, and the Government of FSM, with assistance from IOM, from 18 March to 4 April. The JDA found that Wutip had caused damage to the infrastructure and agricultural production of 30 islands and left 11,575 persons food insecure.

IOM, with the support of USAID/OFDA, responded with distributions from IOM warehouses of relief items such as tarps, rope, and reverse osmosis units to affected communities on the outer islands of Chuuk, Yap, and Pohnpei. On 1 March, a patrol boat with supplies from Yap, the Red Cross, and IOM left for Satawal, Lamotrek, Elato, Fechaulap, and Piig. A final shipment departed for the Mortlocks in Chuuk State on 29 April. It was loaded with over 254 sacks of rice, 65 cases of vegetables, and 806 liters (213 gallons) of cooking oil. IOM mobilized US$450,000 from various donors such as USAID/OFDA, the New Zealand Embassy, and Australian Aid, to support the response effort and to purchase food baskets for distribution to affected populations. Complete food baskets were delivered to 23 islands that suffered major damage to agriculture, and more than 9,000 people benefitted. A further 2,280 people living in areas that suffered moderate crop damage received supplemental food.[105] USAID and FEMA provided more than US$20 million in relief and reconstruction assistance to address the damage caused by Typhoon Wutip.[106]

2018 – Storms

In mid-March 2018, Tropical Depression Jelawat passed over FSM. Heavy rains fell on 17-18 March across Pohnpei and led to washed out roads and numerous mudslides that covered roads and damaged homes. Multiple homes were reported flooded in every municipality on Pohnpei's main island.[107] The Governor declared a state of emergency and President Christian issued a presidential declaration of emergency that authorized the release of US$50,000 from FSM's Disaster Assistance Emergency Fund (DAEF). On 6 May, the U.S. Ambassador declared a disaster due to flood and infrastructure damage, and this declaration allowed FEMA and USAID to conduct a JDA of the affected area. The assessment and a follow-up agricultural damage assessment indicated a need for repair of critical infrastructure and agricultural damage rehabilitation assistance in landslide and flood-affected areas. In addition, on 20 July, the U.S. President issued a Presidential Disaster Declaration (PDD) under the COFA,

and USAID implemented nearly US$5 million in relief and reconstruction assistance to address the damage in FSM. As a result, USAID/OFDA supported agricultural rehabilitation assistance, and USAID/Philippines worked to repair damaged public infrastructure.[108]

2018 – Volcanic Haze

Volcanic haze produced by Hawaii's erupting Kilauea volcano spread toward Micronesia (more than 4,000 km or 2,500 miles west of the volcano) in May and June 2018. Each time the easterly trade winds brought the haze toward the islands, the plume lasted several days.[109] Local weather observers noted the haze in Kosrae, Pohnpei, and Chuuk. Local and U.S. authorities warned residents across Micronesia to monitor the situation and listen for possible instructions, and that residents with respiratory health problems should stay indoors.[110]

2016-2017 – Drought

On 20 February 2016, an Emergency Declaration was issued in Pohnpei due to severe drought damage to crops and water shortage on the main and outer islands. More than 40 wildfires were reported.[111] Eventually, a State of Emergency was declared by the state Governors of all four states.[112] By mid-March, a whole-of-government effort was underway to assess drought related needs across the country. The Patrol Boat FSS MICRONESIA started visits across the country from Ngulu Atoll, the westernmost outer island in Yap, and continued eastward. Yap State and federal officials were on board to make assessments. The Yap State field trip vessel, HAPILMOHOL 1, had departed Colonia earlier in March with over 300 cases of bottled water for residents of Yap Outer Islands whose supply of drinking water was expected to run out within two weeks. The field trip vessel, MICRONESIAN NAVIGATOR, had departed Pohnpei with 4,000 cases of bottled water destined for the Western Islands in Chuuk as well as the Outer Islands of Yap. The field trip vessel, CAROLINE VOYAGER, departed Weno, Chuuk, to visit Chuuk's Northwest to distribute 1,000 cases of bottled water and undertake assessment of water conditions. One of the boats also carried assessors to Sapwuahfik, Nukuoro, and Kapingamarangi, the southernmost island in Pohnpei, to conduct similar assessments.[113]

In its June 2016 assessment of the first six months of the year, NOAA had already found that primary rainfall measuring stations reported drier than normal conditions. Rainfall amounts were below the minimum thresholds required to meet most monthly water needs in Yap and Pohnpei States. Ulithi reported 140 mm (5.55 inches) as May marked the ninth consecutive dry (less than 203 mm/8 inches) month, and Woleai reported 193 mm (7.61 inches) as May marking the tenth consecutive dry month.[114] In Chuuk, the drought continued into 2017.[115]

2016 – Zika and Dengue Outbreak

On 15 March 2016, Kosrae State was notified of its first confirmed case of Zika. The state subsequently implemented routine testing of all pregnant women for Zika, dengue, and chikungunya, and on 21 October, testing identified a concurrent dengue outbreak. Medical records reviews and active surveillance identified 284 Zika and dengue cases for the calendar year; only 35 cases were laboratory confirmed. The peak of the epidemic curve was in latter October and early November with people aged 10-19 years showing the most cases. State health authorities conducted a 3-week spraying operation to eradicate the mosquitos that carry these diseases.[116]

2015 – Typhoons and Tropical Storms

Typhoon Maysak formed from a tropical depression off Pohnpei and tracked westward, intensifying until it made landfall in Chuuk lagoon on 29 March with damaging winds and torrential rainfall, which also affected outer islands. Maysak continued westward to make landfall again at Ulithi atoll in Yap on 1 April. Upgraded to a super typhoon with sustained winds of over 255 km/hour (160 miles per hour), the storm brought significant damage to homes, infrastructure, and agricultural resources.

Five deaths were reported in Yap, and a total of 35,000 people were affected in Chuuk and Yap. On 30 March, the President of FSM issued an emergency declaration for both states and activated the National Emergency Taskforce to coordinate all response efforts, including the mobilization of national government resources and international assistance. The Government subsequently released US$1.5 million to cover immediate food, water, and non-food relief item distributions.[117] On 8 April, in collaboration with FSM officials, a U.S. government team from USAID, FEMA, and other agencies initiated a preliminary damage assessment (PDA) in Chuuk and Yap so that the government of FSM could be eligible to appeal for a U.S. PDD. As of 13 April, the PDA team had found destruction of more than 280 houses and public infrastructure damage in excess of US$8 million in the two states. The assessments also confirmed damage to crops and fruit trees, rainwater catchment systems, and other infrastructure.[118] USAID implemented more than US$50 million in relief and reconstruction activities to address the damage caused by Typhoon Maysak.[119]

Two additional weather systems - Typhoon Noul and Tropical Storm Dolphin - followed in Maysak's wake and impacted Yap, Kosrae, and Pohnpei during the first two weeks of May. These storms caused some damage to homes and infrastructure.[120] Noul formed on 3 May, and by 6 May, it had passed Fais and Ulithi atolls with Tropical Storm intensity and then crossed over Yap's main island as a Typhoon. It did not cause major damage, but it did disrupt efforts that focused on delivering relief to the islands after Maysak.[121] On 10 May, Tropical Storm Dolphin passed just to the northeast of Pohnpei with winds at approximately 128 km/hour (80 miles per hour) and elicited an Emergency Declaration after it damaged electrical networks, roads, trees, and crops as well as more than 246 homes. One person was killed.[122]

The response to the storms included various international and local groups. On 9 April, a United Nations Disaster Assessment and Coordination (UNDAC) team arrived to support the government's response to Maysak. The UNDAC team, comprising five disaster response experts, was deployed by the UN Office for the Coordination of Humanitarian Affairs (OCHA) Regional Office for the Pacific at the request of the FSM Government. The UNDAC team supported partners, such as the IOM and the Micronesia Red Cross Society (MRCS), in delivering food, safe drinking water, medical supplies, emergency shelter, and temporary learning spaces to communities.[123] After UNDAC and other assessments, the International Federation of Red Cross and Red Crescent Societies (IFRC) initial Disaster Relief Emergency Fund allowed distribution of relief supplies for 1,000 households, a number that was revised to 2,157 after further assessments, and the funding supported mobilization and logistical support for MRCS staff and volunteers to distribute the National Society's prepositioned emergency supplies and donated goods; moreover, it allowed replenishment of MRCS stocks of non-food items for 400 households.[124] Additional assistance in the days following the disaster came from IOM whose immediate efforts included the provision of critical lifesaving food, water, and shelter supplies to areas of Yap and Chuuk. In addition to funding from the Governments of Australia, Canada, China, Japan, New Zealand, and the Philippines, following the FSM's state of emergency and request for international assistance, the U.S. President issued a PDD that mobilized U.S. federal funding for immediate emergency relief and reconstruction assistance. The reconstruction was planned to last for 18 months and would see IOM – using USAID funding – rebuild and repair at least 600 homes and 100 pieces of critical infrastructure, including schools and clinics.[125]

2014 – Measles Outbreak

Chuuk State health authorities identified eight laboratory-confirmed, clinically compatible, or suspected cases of measles in mid-September 2014. Of the cases, one-half were on Weno Island. Measles-specific surveillance was heightened at health centers throughout Chuuk,

and additional resources for management were distributed. An emergency mass vaccination campaign was launched on 14 August, and 6,790 eligible individuals were vaccinated on Weno and in the Mortlocks.[126]

2014 – Typhoon Hagupit

Typhoon Hagupit formed in the western Pacific Ocean, near FSM, on 1 December. During 1-5 December, it moved west-northwest, intensifying, but it did not make landfall in Micronesia.[127] There had been a Typhoon Warning for Woleai, Yap, and Ngulu in Yap state, a Typhoon Watch posted for Faraulep, Fais, and Ulithi in Yap state, and a Tropical Storm Warning for Faraulep in Yap state.[128] NASA's Aqua satellite captured a visible image of Typhoon Hagupit on 3 December as it moved through FSM. The image showed a concentration of strong thunderstorms around the center with bands of thunderstorms spiraling into it. Centered just 168 km (104.7 miles) west-southwest of the island of Yap, the storm had maximum sustained winds topping 185 km/hour (115.1 miles per hour) with typhoon-strength winds extending 55.5 km (34.5 miles) out from the center, while tropical storm force winds extended up to 222 km (138 miles). The storm kicked up very rough seas that caused some damage in coastal areas of outlying islands of Yap, including Ngulu, Eauripik, Woleai, and Ifalik.[129]

2013 – Typhoon Haiyan

"Super" Typhoon Haiyan passed over the islands of Yap in November 2013. The island of Ngulu was inundated by approximately 0.5 m (1.6 feet) of water and sustained damage, while on Yap Island, the villages of Epibnaw, Weloy, Fanif, and Colonia reported minor damage; most fruit-bearing trees were destroyed. Inundation was mainly on the eastern side of the island, including the main bridge and a hotel in Colonia.[130] Elsewhere in Yap State, the Disaster Coordination Office reported minor inundation and damage to banana and breadfruit trees on Ifalik, Woleai, and Eaurpik. One canoe house and three residences were also damaged on Eauripik. MRCS mobilized Yap-based volunteers to distribute items from its relief container as needed.[131] Although the storm also passed over Chuuk, the damage was not severe.[132]

Country Risks

Risk calculation takes into account exposure to hazards, vulnerability, and coping capacity. Addressing all of these elements is important in reducing and mitigating disaster risk. Various indices emphasize structural or institutional risk while others emphasize hazards or losses (human and economic). Regardless of emphasis, disaster risk calculations use some form of the equation:

Disaster Risk = (Hazard × Vulnerability) / Capacity[133]

Taken from the UN Office for Disaster Risk Reduction (UNDRR) glossary, some definitions will help clarify this formula:

- Capacity - The combination of strengths, attributes, and resources available within an organization, community, or society to manage and reduce disaster risks and strengthen resilience.
- Disaster risk - The potential loss of life, injury, or destroyed or damaged assets, which could occur to a system, society, or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability, and capacity.
- Hazard - A process, phenomenon, or human activity that may cause loss of life, injury, or other health impacts, property damage, social and economic disruption, or environmental degradation.
- Vulnerability - The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of an individual, a community, assets, or systems to the impacts of hazards.[134]

In general, the goal of indexing risk is to inform decision makers and DRR and CCA practitioners of the level of risk to and underlying

capacity of the target community. The process supports proactive crisis management by helping to establish objective allocation of resources and by promoting coordinating actions.

INFORM Country Risk Profile

The Index for Risk Management (INFORM) Risk Index measures the risk of humanitarian crisis and disasters in 191 countries. The model is based the following perspectives on the standard dimensions of risk: Hazards and Exposure, Vulnerability, and Lack of Coping Capacity. The first dimension measures the natural and human hazards that pose the risk. The second and third dimensions cover population factors that can mitigate against or exacerbate the risk. The vulnerability dimension considers the strength of individuals and households relative to a crisis while the lack of coping capacity dimension considers factors of institutional strength.[135]

INFORM gives each country a risk score of 1-10 (1 being the lowest and 10 the highest) for each of the dimensions, categories, and components of risk, as well as an overall risk score. The higher the score the more at risk a country is to disasters. In the 2023 INFORM Risk Index, FSM had an overall risk of 3.6/10, which INFORM categorizes as the "medium" risk class and ranks FSM 91 of 191 countries assessed. The Hazards and Exposure dimension score takes into account a combination of both natural and human hazards, and FSM rated 2.3/10 or ranking 114 of 191 countries assessed. The Vulnerability dimension score was 3.9/10 (ranking 84 of 191 countries), and the Lack of Coping Capacity dimension score was 5/10 (ranking 68 of 191 countries). Physical exposure to tsunami, 8.6/10, was the highest risk in the Hazards and Exposure dimension, with Aid Dependency measuring a 7.3/10 risk for the Vulnerability dimension. DRR was rated 6/10 in the Lack of Coping Capacity dimension. Figure 3 shows the INFORM Dashboard for FSM.[136]

World Risk Report

The WorldRiskReport by Bündnis Entwicklung Hilft strives to raise awareness of disaster risk among the global public and political decisionmakers and to provide practitioners with data to promote faster orientation to complex situations – i.e., societies experiencing disasters. This effort stems from the perception that disaster risks are not solely determined by the occurrence, intensity, or duration of extreme natural events. Social factors, political conditions, and economic structures

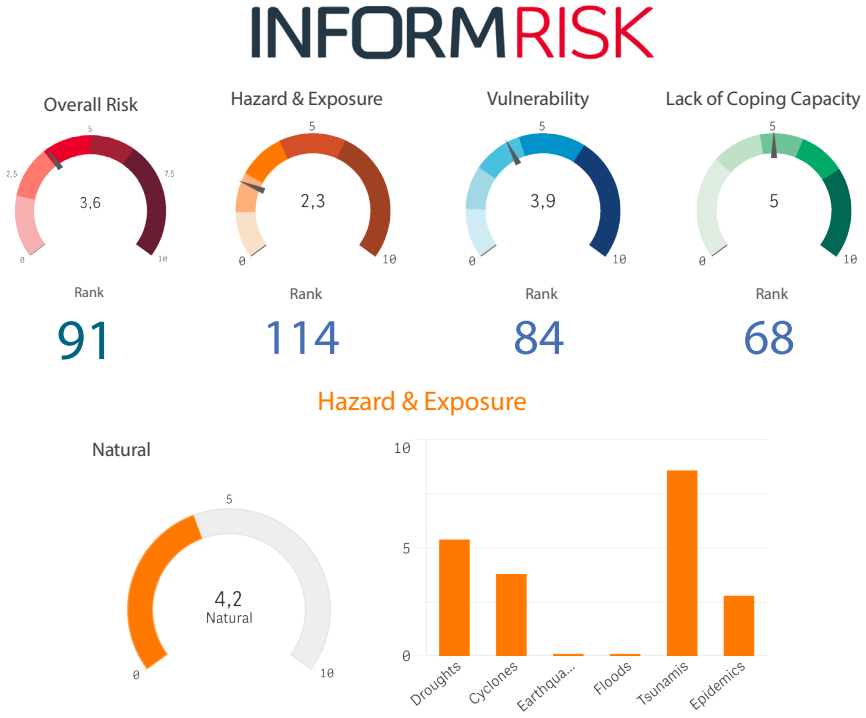


Figure 3: INFORM Risk Index 2023, FSM

play an important role. Thus, the index is based on the assumption that every society can take precautions – e.g., effective disaster preparedness and management – to reduce the impact of extreme events and lower the risk of disasters.

The index provides an assessment of the risk that countries will confront disasters but does not indicate probabilities for the emergence of disasters, nor does it forecast the timing of future disasters. The index uses 100 indicators that include risk, hazard exposure, vulnerability, and coping capacity (as defined above), and adds two others:

- Susceptibility - The disposition to suffer damage in the event of extreme natural events. Susceptibility relates to structural characteristics and frameworks of societies.
- Adaption - A long-term process that also includes structural changes and comprises measures and strategies that address and try to deal with future negative impacts of natural hazards and climate change. Analogous to "lack of coping capacity," the lack of adaptive capacities is included in the index.

In the 2022 WorldRiskReport, FSM ranked 93 of 181 countries with a "medium" risk class score of 4.36 (out of 100 where 0 is the lowest risk and 100 the highest).

- Exposure: 1.12 (medium)
- Vulnerability: 16.97 (medium)
- Susceptibility: 9.50 (low)
- Lack of coping capacity: 12.24 (medium)
- Lack of adaptive capacity: 42.00 (medium)

FSM's risk score (4.36) is just slightly higher than the regional Oceania (4.15) and world (4.11) medians in the WorldRiskReport. However, the Micronesian sub-region as a whole has a median (2.29) well below FSM's score; the other countries in this sub-region with their risk scores and ranks are Kiribati (2.64/130), the Republic of the Marshall Islands (2.29/139), Nauru (1.00/180), and Palau (1.25/173).[137]

Global Climate Risk

The Global Climate Risk Index (CRI) developed by Germanwatch analyzes impacts of extreme weather in terms of both fatalities and economic loss. The CRI examines disaster impacts in both absolute terms (number of fatalities, etc.) and in comparative, relative terms that allow analysts to set events and their impacts alongside each other to assess how a given country or community used its strengths or struggled due to its weaknesses in the face of an extreme event. The countries ranking highest on the CRI experience either frequent smaller-scale weather events or rare but extraordinary events. The two different CRI measures – most impacted countries in a single year and most impacted countries over 20 years – offer analysts an opportunity to tease apart the effects of rare but major events versus frequent, cumulative events.

Among those major events examined by the CRI are tropical cyclones (typhoons). The key takeaway is that countries with high exposure to such storms – either frequent small ones or rare massive ones – will be preparing for less predictable, potentially less frequent, but probably more powerful typhoons due to climate change. The CRI points to its findings as a clear reason to improve global climate change financing programs in order to ensure that the most affected countries do not experience worsening development outcomes because of disaster losses.

In the 2021 CRI, based on single year (2019) data, FSM ranked 130 of 180 countries assessed (where the lower the ranking, the more at risk a country is) and had a total CRI score of 118. In the CRI ranking for the entire period 2000-2019, FSM ranked 40 of 180 countries and had a score of 55.67; for the two-decade measure, the country's ranking suffered from worse outcomes in the "per" categories than it had in the single-year rankings. The CRI country score is calculated by averaging four indicators (death toll, deaths / 100,000 people, absolute losses, and losses / GDP) with both "per" indicators given greater weight than the absolute numbers.[138]

This CRI ranking underscores the fact that FSM may not experience major weather events in any given year but that it is highly exposed to cumulative threats over time.

ORGANIZATIONAL STRUCTURE FOR DISASTER MANAGEMENT

The National Disaster Committee (NDC) provides both political direction in the form of policy development and coordination in the event of a disaster. Primary decision-making responsibility in both instances lies with the President, usually acting under the advice of the NDC. A state of disaster is declared by the President upon request by a state Governor and with the advice of the NDC. The President's role is mirrored at the state level, where each Governor holds the primary decision-making power for both preparedness and response. Within each of the four states, the organization varies. Where they exist, the State Disaster Committee is responsible for planning for disasters and providing overall management of disaster response under the direction of the Governor. State Committees are chaired by the state-appointed Disaster Management Officer (DMO) and comprised of relevant state Secretaries and other agency heads. National and state coordination teams operate alongside the Disaster Committees to manage the provision of disaster relief under the direction of the national or state Disaster Coordination Officers (DCO). Beneath the state level, local Disaster Management Committees may operate. Given the continued dominance of traditional forms of customary governance throughout much of FSM, local customary leaders play a significant practical role. However, their specific role is not outlined in national plans beyond that they should be supported to develop plans and provide response during events. During disasters, operations are handled through National and State Emergency Operations Centers (NEOC and SEOC). Alongside the formal government structures, a network of international and national stakeholders operates, coordinated by IOM.[139]

Lead Government Agencies in Disaster Response

The NDC is responsible for policy development and disaster management arrangements for preparedness and response activities at the national level. The National Disaster Coordination Team (NDCT) and the NEOC operate under NDC and are activated for operational management during emergencies. Access to international and regional support is the purview of NDC, whereas control of relief assets rests with the NDCT. Figure 4 shows the levels of national, state, and local authority for disaster management; note that "OEEM" in the figure is now DECEM.[140]

The NDC is responsible to the President for policy development and for the strategic management of planning and arrangements for disaster preparedness and response. It is also responsible for the overview of disaster events and for accessing international, regional, and bi-lateral support arrangements for disaster response. Based on the National Disaster Response Plan (NDRP, 2016), the NDC has responsibility for oversight of arrangements for all hazards through six lead agencies:

- Office of Environment and Emergency Management (OEEM, now DECEM) Division of Emergency Management – all hazards (excluding those listed below)
- Department of Health and Social Affairs – pandemics and health incidents
- Department of Resources and Development– agriculture incidents
- OEEM (now DECEM) Division of Environment and Sustainable Development – environmental incidents

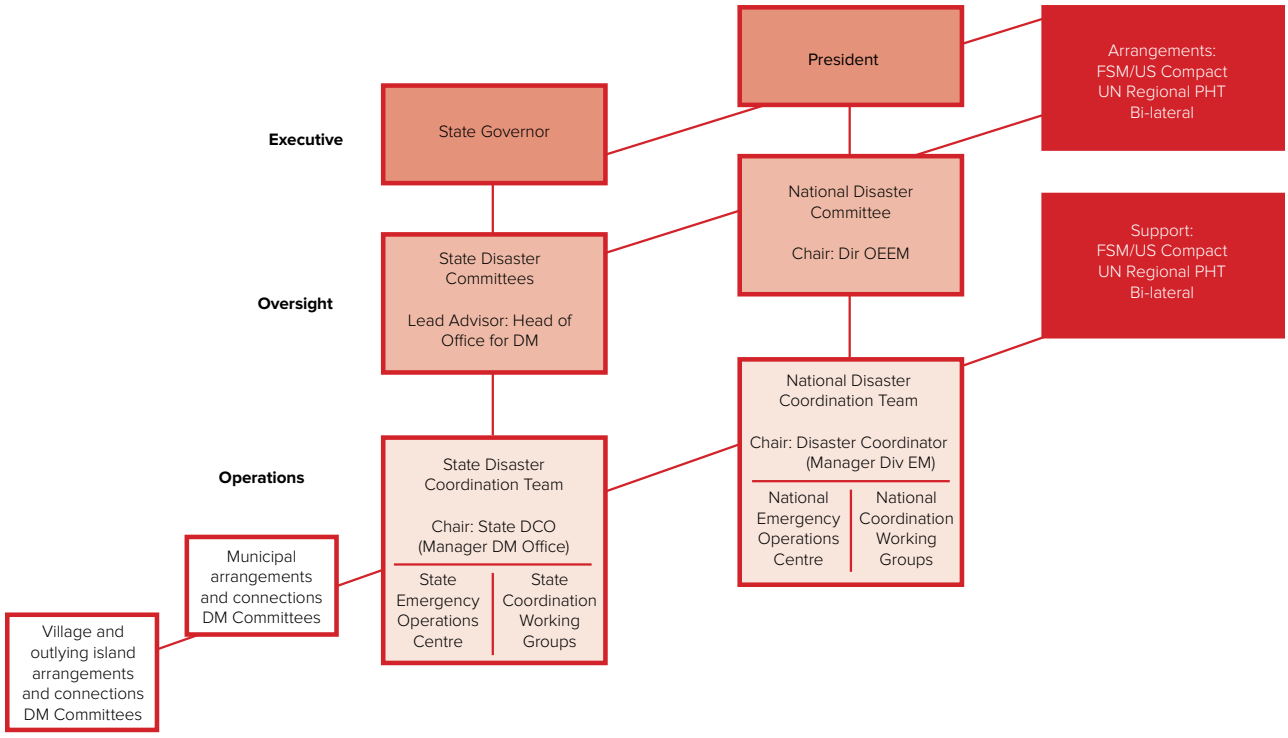


Figure 4: Disaster Management Organization in FSM

- Department of Transportation, Communications, and Infrastructure – aircraft and ship incidents
- Department of Justice Division of National Police – search and rescue at sea[141]

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 OEEM. The Government gave top priority to climate change and disaster risk management issues by raising the status of OEEM from an office to a department, DECEM, in 2017, after the publication of the NDRP.[142] DECEM plays a key role in preparedness and operational response arrangements at the national level and supports state level arrangements. However, it is not resourced adequately to provide adequate ex-ante multi-hazard preparedness and post-disaster response. State emergency preparedness and response facilities are critically under-resourced, with only one or two staff responsible for emergency response in each of the four states.[143]

The NDC has oversight of the operational arrangements of the NDCT and the NEOC, to be activated for the operational management of disaster events. For health, agriculture, and environmental disaster events, as well as aircraft, shipping, and sea search and rescue incidents, these arrangements may support the lead agency in disaster coordination. The NDC oversees the establishment of national operational arrangements, including the NDCT, associated sector-based Coordination Working Groups (CWG), and the NEOC. The Chair of the NDC is the President who is to be assisted by the Director of DECEM. The members of the NDC include:

- Departmental secretary or designee
- Director of office, agency, or designees
- Representative of Micronesia Red Cross Society (MRCS)
- Representative of the Chamber of Commerce
- Representative of NGO; and
- President of National Council of Women.

The NDCT is established for managing disaster events together with the NEOC. NDCT CWGs are established for:

- Deployment and Assessment – to manage

initial relief deployment and initial damage assessments to verify and support state assessments
- Social Support – to provide support for health services, public and family health, water, sanitation, and hygiene (WASH), protection and special needs, education services, displaced people, and shelter and camp management
- Livelihood – to support subsistence and basic economic activity in affected areas to promote self-reliance; and
- Infrastructure – to manage restoration of minimum basic services to affected communities and support longer-term rehabilitation.

The functions of the NDCT are to:
- Support, verify, and supplement the initial damage assessment carried out at the state level
- Coordinate and provide direction to the NDCT CWGs
- Coordinate with and provide support and direction as appropriate during national declarations to State Disaster Coordination Teams (SDCT); and
- Report to and take strategic direction from the NDC.

The Chair of the NDCT is the Assistant Director of DECEM's Emergency Management Section as the Disaster Coordinator, and the membership of the NDCT comprises the Chairs of the NDCT CWGs, key sector divisional heads, a representative from the MRCS, and a representative from USAID.[144]

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. SDCTs, their associated CWGs, and the SEOCs operate under the SDCs during disaster events.[145] The Division of Emergency under DECEM supports States to develop, sustain, and improve their capacity to prepare, respond, and recover from disasters.[146]

Kosrae's institutional arrangement for the integration of DRR and CCA is shown in Figure 5.[147] Under the Governor, the DCO and Kosrae Island Resource Management Authority (KIRMA) have advisory and policy roles. Responsibility for the state's Joint State Action Plan on Disaster Risk Management and Climate Change (JSAP) resides with the Joint Risk Management (JRM) Network as well as the state Task Force. The JRM Network includes membership from NGOs and the private sector while the Task Force comprises mainly government agencies.[148]

In Pohnpei, the Disaster Committee is made up of the Executive Group of Department Directors whose departments form the primary group of responders. Agency and local political jurisdictions within the emergency management program may be represented on the Governor's Disaster Committee. Organizations with responsibility and interest in disaster and climate change related issues in Pohnpei include:
- Department of Public Safety
- Department of Land
- Social Affairs
- Fisheries and Agriculture

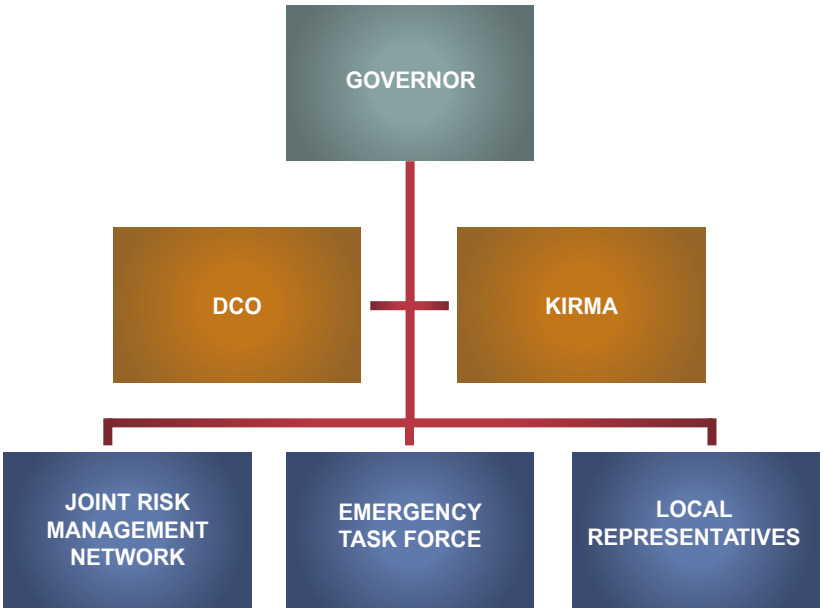


Figure 5: Kosrae JSAP Implementation Arrangement

- Transport and Infrastructure
- Port Authority
- Environment Protection Authority (EPA)
- Transportation Authority
- MRCS, Pohnpei
- College of Micronesia (COM - Pohnpei campus)

The institutional arrangement for the integration of DRR and CCA in Pohnpei is shared between the EPA and the Department of Public Safety. However, given that climate change and disasters impact other sectors, the responsibility of the JSAP is shared in a wider group that includes NGOs and private sector and communities. The establishment of the Pohnpei JRM Network coordinated by the Department of Public Safety and to include membership from the NGOs and private sector and government agencies is crucial to oversee JSAP implementation. The SDC is chaired by the Governor and comprises government agencies and MRCS representatives, and it is the official forum to which updates on implementation are submitted by the Department of Public Safety. The organizational relationships are shown in Figure 6.[149]

The Pohnpei Department of Public Safety Division of Fire and Emergency Services is tasked with coordination of search and rescue missions and planning among local, national, and international search and rescue teams, coordination of response, relief, and control after natural and man-made disasters, and training for officers to act as first responders in cases of disaster.[150]

In Chuuk, the State Disaster Coordinating Office provides support and assistance to the State Emergency Committee, which is the main coordinating focal point for emergencies. The Committee operates from the SEOC (also seen as CDEOC). Members of the Committee include the Governor, Attorney-General, Chief of Staff, department directors, and other state and private sector managers. The Lieutenant Governor is the Chair of the Committee. The Chuuk State Constitution, Section 12(a) outlines the duties of the Governor in times of emergency – i.e., if required, preserve public peace, health, and safety at a time of extreme emergency caused by civil disturbance, natural disaster, or immediate threat of war or insurrection. In case of such a development, the Governor may declare a state of emergency and issue appropriate decrees. A decree may not involve the expenditure of unappropriated public funds unless approved by the national legislature. Figure 7 shows the Chuuk state organization to prepare for and deal with disasters.[151]

Organizations with responsibility and interest in DRR and CCA in Yap include:

- Office of Planning and Budget, which incorporates the Disaster Coordination Office (DCO)
- Resources and Development (incorporating agriculture, land services, fisheries, and marine divisions)
- Environment Protection Authority (EPA)
- Public Works and Transport
- MRCS, Yap; and
- COM (Yap campus).[152]

Municipal Disaster Committees support preparedness and response activities and distribute relief items in each municipality during emergencies and disaster events. Village Committees are responsible for facilitating a local network for planning disaster management activities, maintaining connections with villages and settlements, and accommodating local leaderships – i.e., Councils of Chiefs, churches, and elders.[153] State JSAPs are required to stipulate arrangements to support community self-sufficiency in preparing for and responding to disasters, and state disaster offices are required to work with municipalities and local village groupings to establish disaster management arrangements, including local arrangements for early warning.[154]

Disaster Relief and Emergency Response

The President is responsible for receiving

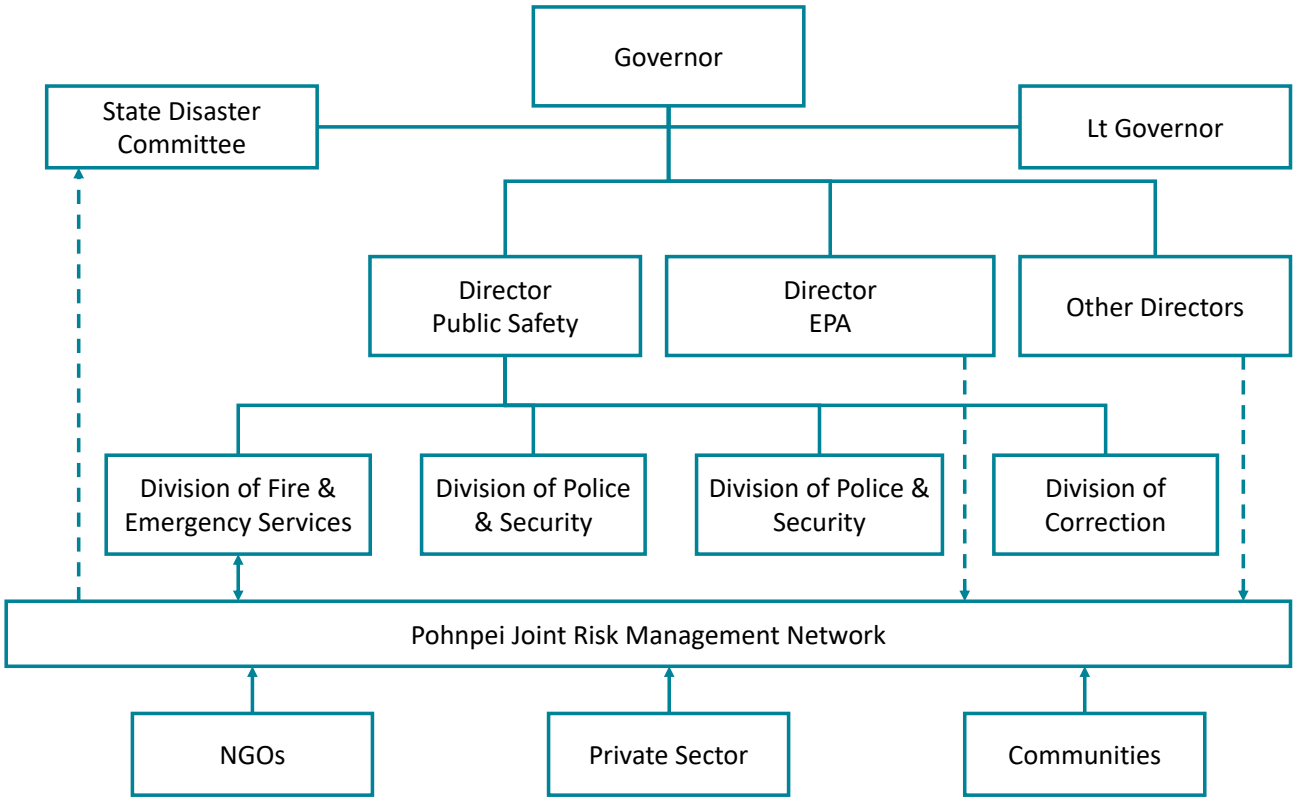


Figure 6: Pohnpei Joint Risk Management Network

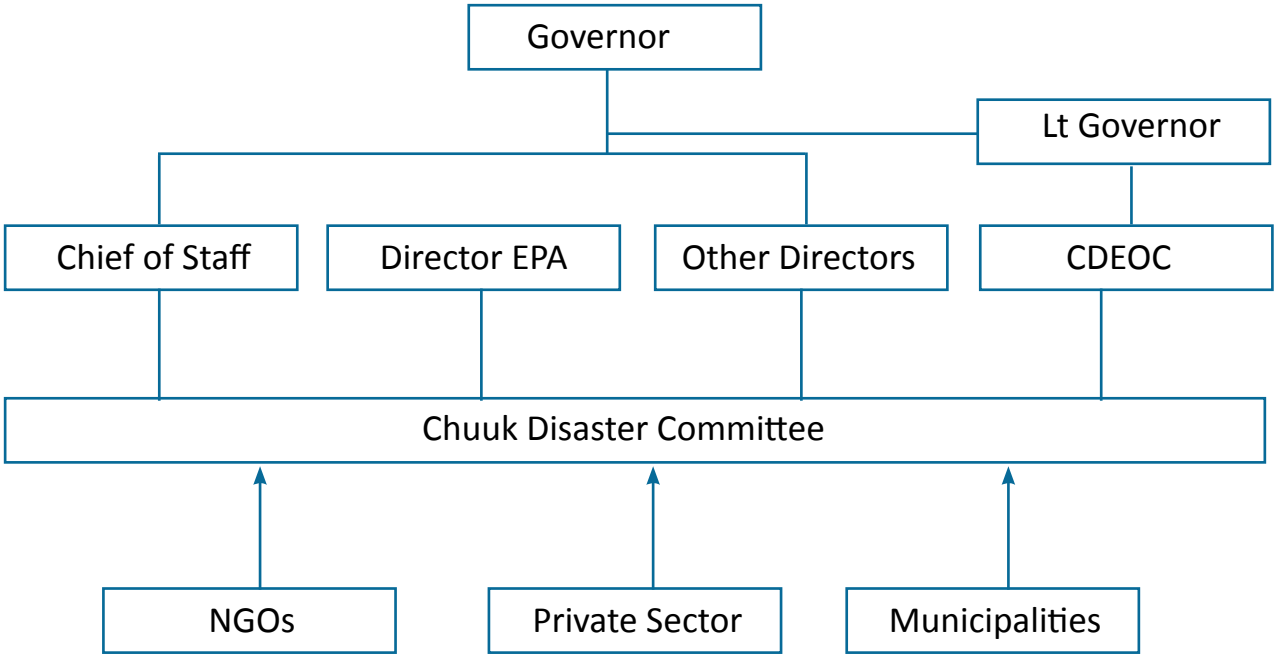


Figure 7: Chuuk State Disaster Organization

advice from the NDC, approving policies and regulatory frameworks on the advice of the NDC, approving the National Disaster Response Plan (NDRP), committing resources for government activity in disaster management, decision-making in relation to priorities, committing resources, and accessing international assistance during disasters, assisting states in their disaster preparedness and response, and declaring a state of disaster on the advice of the NDC Chair and at the request of a state Governor. The President's designee for disaster management is responsible for developing arrangements for disaster management across FSM and overseeing and monitoring their implementation.

Heads of departments responsible for health, environmental, and agriculture incidents are responsible for the arrangements in response to those incidents. Plans for those incidents are managed through the NDC and the associated operational disaster response arrangements. Similarly, heads of departments responsible for aircraft, shipping, and sea search and rescue incidents are responsible for the arrangements for addressing them; plans for these areas are subject to NDC oversight. For these incidents the appropriate department head becomes the lead advisor to the NDC. The department head may seek the activation of the NDRP through the NDC to support its management of an incident.

There are three phases of activation for a disaster or potential disaster:

Standby – The Disaster Coordinator in consultation with DECEM will activate the NEOC to be on standby if there is a threat within FSM or if there is a need to issue a warning of a potential threat. While on standby, the NEOC will monitor the situation continuously and establish connections with the potentially affected states. The Disaster Coordinator will immediately, and then periodically, update DECEM leadership, who will keep the President informed. As appropriate, the Disaster Coordinator may activate the NDCT arrangements.

Watch and Support – In the case of a disaster within a state or in anticipation of the likelihood of a state requiring support, the Disaster Coordinator will activate the NEOC for watch and support. Continuous monitoring and engagement with the affected state(s) and assessment of the situation and likely needs will follow. The National Operations Manager is activated. External support staff for the NEOC will be activated as appropriate. The NDCT may be activated with appropriate CWGs in anticipation of support needs. The NDC and the President will continue to be kept informed and the NDC may meet periodically to agree on support commitments.

Full Activation – At the request of a state Governor for the declaration of a national disaster or in anticipation of a national declaration, the Disaster Coordinator in consultation with DECEM will place the NEOC on full activation along with the National Operations Manager. Continuous monitoring and engagement with the affected state(s) and assessment of the situation and likely needs will follow. External support staff for the NEOC will be fully activated to support this phase. The NDCT will be activated with appropriate CWGs to plan, initiate, and deploy for support needs. The Chair of the NDC and the President will continue to be kept informed and the NDC will meet periodically to review the management of the event and agree on support commitments.

Under full mobilization, the country's operations will be handled by the groups and operators shown in Figure 8; note that OEEM is now DECEM.[155] Table 3 reflects the state JSAP delineation of roles and responsibilities for state officials.[156]

Under the COFA, USAID and FEMA provide the majority of financing for disaster management and reconstruction. Under this arrangement, disaster preparedness, response, and recovery assistance are provided to FSM by USAID while FEMA is responsible for funding that assistance. Early warning and weather services are supported by NOAA. Uncertainty about post-2023 arrangements for these services is a significant factor in the preparedness of FSM to cope with possible intense disasters in the future.[157]

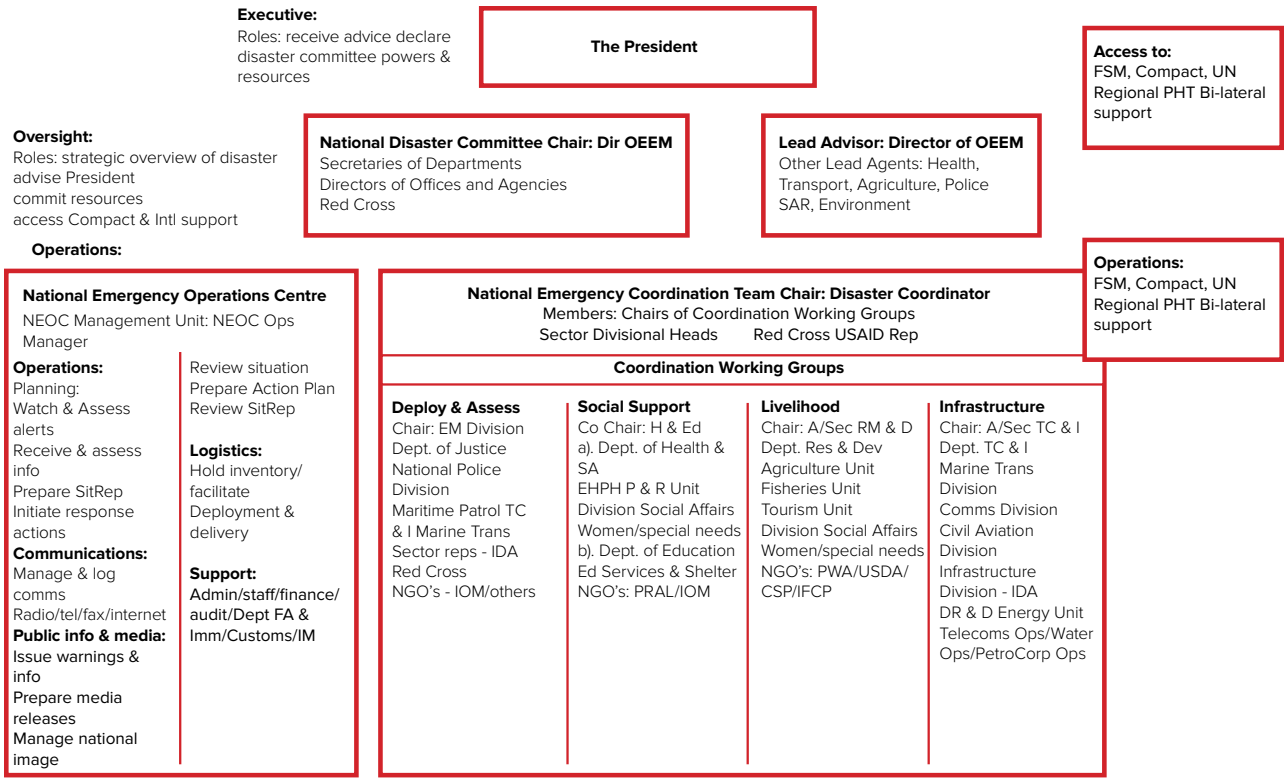


Figure 8: National Disaster Management Response Structure

Leader/Organization	Roles and Responsibilities
Governor	• Declare a state of emergency if needed • Designate a state DCO • Designate a command post • Designate shelters • Declare various states of warning • Mobilize the emergency task forces and initiation of necessary property and life-saving measures, evacuations, mass care, etc. • Initiate damage assessment as soon as feasible when a disaster occurs and communicate to the FSM President when national and/or U.S. FEMA or other foreign assistance is needed • Designate a representative to work with national authorities • Designate a disaster application center and a disaster field office
State DCO	• Maintain and update the State JSAP • Develop public awareness and training programs in cooperation with other State departments and agencies • Coordinate the State sponsored training and public awareness programs with appropriate department and agency heads • Prepare requests for disaster or mitigation assistance to the national government, or through the national government to foreign governments or other international organizations or agencies • Ensure that warnings are issued to the public when the Governor declares different warning stages • Perform all other emergency coordination functions that may be necessary given the demands of the given disaster or emergency situation
Emergency Operations Center/Command Post	• Provide a point of centralized control, coordination, and direction of emergency operations • Serve as a place for key staff to effectively work together, share information, and make decisions, and assist in making the most effective use of resources • Staff report to the command post after a disaster has occurred or when the Governor declares that a treat has been identified

Table 3: Disaster Management Roles of State Officials

Armed Forces Role in Disaster Relief

Under the Amended Compact of Free Association (COFA, 2004), FSM and the United States agreed that the U.S. has full authority and responsibility for defense and security matters in and relating to FSM. In addition, FSM citizens can serve in the U.S. Armed Forces.[158] In the most recent High-Level Defense Talks in July 2021, the FSM President and representatives of the U.S., including the Commander of U.S. Indo-Pacific Command (INDOPACOM), discussed key topics including how the U.S. defends and secures FSM by addressing conventional and non-conventional security threats, such as climate change, transnational organized crime, and maritime security. The two countries will collaborate on plans for a more frequent and permanent U.S. military presence.[159]

At the highest level, the Chief of the U.S. diplomatic mission (COM) in the country, under the direction of the President and Secretary of State, is responsible for the conduct of U.S. Government humanitarian assistance activities within their jurisdiction. USAID / BHA is the U.S. government lead agency for international humanitarian assistance; a Declaration of Humanitarian Need is required for BHA to conduct any type of emergency assistance. The COM (or, for countries without an official U.S. diplomatic presence, the cognizant Assistant Secretary of State) may issue a Declaration of Humanitarian Need with respect to a natural or human-induced event when all the following criteria exist in the host country:

- Evidence of significant unmet humanitarian needs
- U.S. Government humanitarian assistance will save lives, reduce human suffering, and mitigate the impact of humanitarian emergencies on the most vulnerable
- Host country requests or will accept international assistance; and
- Responding aligns with U.S. Government interests and humanitarian objectives.[160]

According to the U.S. DoD Directive 5100.46 (2012, incorporating changes on 28 July 2017), the DoD shall respond to foreign disasters in support of USAID only:

- at the direction of the President
- when the Secretary of Defense or a designee approves, with the concurrence of the Secretary of State, a request for assistance from another Federal department or agency; or
- in emergency situations in order to save human lives, where there is not sufficient time to seek the prior concurrence of the Secretary of State, in which case the Secretary of Defense shall advise and seek the concurrence of the Secretary of State as soon as practicable thereafter.

U.S. Government interagency requests for DoD assistance to disaster relief efforts require an official request from the appropriate departmental or agency Executive Secretariat to the DoD Executive Secretary, and DoD considers such requests based on U.S. Government or appropriate international organization assessment(s) of the disaster, the availability of requested assistance, the impact on ongoing or potential military operations of providing such assistance, the effect on security cooperation objectives, and other relevant factors. An exception to the above is found within the Directive:

"Nothing in this Directive shall be construed as preventing a military commander with assigned forces at or near the immediate scene of a foreign disaster from taking prompt action to save human lives. In cases in which this authority is invoked, the commander should obtain the concurrence of the host nation and U.S. Chief of Mission of the affected country before committing forces. Also, the Combatant Commander shall follow up as soon as possible, but no later than 72 hours after the start of relief operations, to secure Secretary of Defense or Deputy Secretary of Defense approval for continuing assistance… Such assistance during the first 72 hours does not include the authority to provide military assistance that does not

contribute to urgent life-saving efforts."[161]

U.S military humanitarian and disaster relief operations in FSM are normally conducted in support of USAID / BHA to provide assistance when the need for relief is gravely urgent and when the humanitarian emergency dwarfs the ability of the host nation and civilian relief agencies to respond effectively. The most common activities that may be undertaken by U.S. military forces include logistical and transportation support.[162]

Disaster Management Partners

Various partners, including the national Red Cross society, NGOs, and civil society groups, undertake DRR and disaster management activities, including the provision of relief and recovery support during and after a disaster event. These stakeholders are expected to work within the frameworks outlined in the NDRP to ensure their activities are integrated and accounted for. External support arrangements through the FSM-U.S. COFA and the UN regional office are initiated at the direction of the FSM President on the advice of and through the NDC. Operational deployment of these arrangements, including at the state level, is through the NDCT; UN Cluster lead agencies are encouraged to identify and engage with and support their FSM counterpart arrangement.[163]

Among key partners that fall under the above NDRP framework are the MRCS, FANGO (FSM Alliance of NGOs), Pohnpei Women's Council, Chuuk Women's Council, and the Micronesian Conservation Trust (MCT). Other civil society groups assist not only in disaster preparedness, response, and recovery, but also in health, education, youth programs, climate change, environment, HIV/AIDS awareness, and gender. At the international level, UN system agencies that operate in FSM are the Food and Agriculture Organization (FAO),[164] WFP (planned presence as of October 2022),[165] UNICEF, World Health Organization (WHO), UN Development Programme (UNDP), and UN Women. While these agencies normally participate in various preparedness and risk reduction projects in FSM, they can also be called upon during emergencies.[166]

IOM has an established presence and is currently implementing a Disaster Mitigation, Relief, and Reconstruction Programme with funding from USAID. The project aims to provide humanitarian relief and assistance for reconstruction and recovery following an extreme event or shock to Small Island Developing States. Moreover, together with USAID, IOM works with the Government and communities to bolster emergency response capacity.[167] IOM Micronesia was established in 2008 and is headquartered in Pohnpei; it has a physical presence in Palau, FSM, and the Republic of the Marshall Islands and sub-offices in each of the FSM states of Yap, Chuuk, and Kosrae. IOM works in cooperation with national, state, and local agencies to provide support on disaster prevention, emergency preparedness and response, migration management, women's empowerment, elimination of gender-based violence, counter-trafficking, and protection. IOM Micronesia maintains close partnerships with the national and state governments and maintains close coordination with NGOs, civil society organizations, and other UN agencies. It has built a relationship with DECEM and coordinates closely with the Department of Health and Social Affairs.[168]

The Micronesia Conservation Trust (MCT) in Pohnpei has several projects relating to DRR and CCA:

- Conservation Society of Pohnpei - University of the South Pacific European Union - Global Climate Change Adaptation Project - MCT hosts this project on three demonstration sites in the FSM. Activities include a community participatory Vulnerability and Adaptation Assessment and developing and implementing a Community Adaptation Plan.
- Enhancing Sustainable Coral Reef Monitoring and Management Capacity for the Micronesia Challenge and Beyond for the State of Pohnpei - MCT manages eight local conservation organizations and universities

to implement this project, which includes enhanced data collection, monitoring, and reporting on coral reefs.
- Enhancing the Enforcement of Ant Biosphere Reserve in Pohnpei – This project's goal is to improve compliance on Ant Atoll biosphere reserve through effective enforcement.
- Awak River and Piggery Clean-up Project - MCT is the fiscal sponsor for the Awak Youth Organization, which is implementing this project. The goal is to improve water quality in the Awak River to support a healthy and sustainable community that can maintain its culture and traditions for future generations.
- Planning for Fisheries Management, Marine Resource Management, and Enforcement Development – Activities of this project include creating a fisheries advisory body of fishers and market owners; developing a joint five-year work-plan to improve fisheries management; and launching a statewide awareness campaign about Pohnpei's fisheries.

Coping with Climate Change in the Pacific Island Region: A German government-funded project working in 15 countries in the Pacific, the objective is: "The skills and capabilities of the local population, national governmental authorities and regional organisations are enhanced in order to cope with the effects of climate change and combat its causes." Activities in FSM include harmonized mapping capacity across states and national governments, promoting International Day of Disaster Reduction and World Food Day activities, training programs for infrastructure sector public servants to incorporate CCA into state development policies and action plans, and to incorporate CCA into insurance and financial institutions' lending processes.

The European Union's European Development Fund provided the funding for the emergency operations centers in each of the States and within the National government.[169] Additional resources and projects include a focus on conservation, marine resources, and waste management with the support of partner states, including Japan.[170]

The International Red Cross and Red Crescent Movement

International Committee of the Red Cross

The International Committee of the Red Cross (ICRC) is an independent humanitarian organization, headquartered in Geneva, Switzerland. The ICRC bases its activities on the provisions of International Humanitarian Law (IHL), and it is neutral in politics, religion, and ideology. The ICRC assists with the protection of civilian victims of armed conflict and internal strife and their direct results. Within these roles, it may take any humanitarian initiative as a neutral and independent intermediary.[171] In the Pacific, the ICRC regional delegation, based in Fiji, works together with Red Cross and Red Crescent National Societies to promote countries' ratification of IHL treaties, and it assists authorities in formulating the necessary measures to implement such treaties at the national level. The ICRC supports the efforts of the region's National Societies to be distinct humanitarian actors, and it provides training, expertise, and material support to help National Societies respond effectively to armed conflict and other situations of violence. The delegation in the Pacific coordinates all ICRC work in the 16 countries and territories it covers, including FSM.[172]

International Federation of Red Cross and Red Crescent Societies

The IFRC is a humanitarian organization, founded in 1919. It provides assistance and promotes humanitarian activities carried out by 192 National Red Cross and Red Crescent Societies globally with a view to preventing and alleviating human suffering. The IFRC carries out relief operations to assist victims of disasters and combines this work with development activities to strengthen the capacities of its member National Societies.[173] Among the IFRC's offices, clusters, and delegations, Micronesia falls

generally under the Asia-Pacific. IFRC Disaster Law's work in the Pacific region supports Pacific Island National Societies and their governments and communities to develop strong and inclusive disaster legislation, and it advocates dialogue on the importance of a regional approach to disaster preparedness and response.[174]

The IFRC's Suva Cluster comprises 11 National Societies from small Pacific Island and archipelago states including FSM. Through a sub-delegation in the North Pacific, the Cluster Delegation provides support to the Micronesia Red Cross Society, and the Delegation facilitates connections among the 14 Pacific National Societies.[175]

Micronesia Red Cross Society

The MRCS officially launched with its articles of incorporation in 1998, and it eventually became a recognized National Society in 2003.[176] MRCS is an auxiliary to the national government and a member of the National Emergency Task Force as well as State Emergency Operations Committees.[177] The Society has a membership from throughout the four states with its headquarters in Pohnpei. There is a Chapter office in each of Chuuk, Kosrae, and Yap. MRCS undertakes disaster preparedness and response activities, teaches First Aid, promotes public health, and maintains FSM's voluntary blood donation system. As part of the national disaster management structure, MRCS coordinates with the government and other actors, performs portions of post-disaster assessments, and distributes relief items to affected communities. The national society and each chapter maintain response plans and conduct annual simulation drills that include testing logistics plans to ensure timely response.[178]

MRCS keeps five disaster containers prepositioned across the four states with enough emergency aid to help a total of 6,000 people at any one time. The containers are used to store jerry cans, buckets, tarpaulins, shelter toolkits, blankets, and hygiene kits, and the containers are sent as a whole package to affected states or islands after a disaster. For example, after 2015's Typhoon Maysak, MRCS sent two containers held in Pohnpei to Chuuk and Yap states. MRCS' Disaster Management Officer is responsible for regular checks on the stockpiles.[179]

U.S. Government Agencies in FSM

FSM relies heavily on the U.S. government's support through the COFA. USAID and its BHA collaborate closely with FEMA as well as USAID/Philippines and USAID's Bureau for Asia, to implement development and humanitarian programs in FSM. Heavy dependence on aid funding is partly linked to the country's remote and scattered island geography. However, the COFA with the U.S. government ends in 2023; thus, building financial and human resources capacity to cope with disaster risks is a long-term challenge.[180]

Under the terms of the COFA, the United States entered into a Federal Programs and Services Agreement with FSM. Article X of the Agreement commits the United States to provide disaster preparedness, response, and recovery assistance. Following an agreement to amend Article X in 2008, primary U.S. Government responsibility for implementation of disaster assistance transferred from the Department of Homeland Security's FEMA to USAID; FEMA retained responsibility for funding that assistance. Additional revisions to this arrangement in 2017 resulted in a fresh Operational Blueprint. Under this arrangement, USAID is responsible for providing disaster assistance and coordinating the U.S. Government response to disasters in the FSM. Following a U.S. Presidential Disaster Declaration (PDD), FEMA will provide funds to USAID for carrying out activities related to the declared event. In addition, FEMA may provide subject matter expertise throughout the disaster operation, as appropriate. Assistance will be provided by USAID in coordination with FEMA per the approved Disaster Relief and Reconstruction Plan (DRRP).

USAID maintains a significant presence in the FSM through a Disaster Assistance Coordinator (DAC) who works as a member

of the U.S. Embassy County Team. The DAC serves as a liaison with the FSM Government and coordinates U.S. Government relief activities in FSM. A critical pillar of USAID relief lays within a cooperative agreement between USAID and its primary relief and reconstruction partner within FSM, IOM. Additionally, Article X established a Disaster Assistance Emergency Fund (DAEF), with an annual deposit of US$200,000 by the Government of FSM, to be matched by a contribution of the same amount by the U.S. Government, starting in 2005 and ending with a contribution in 2023. Thus, a total of US$400,000 per year accrues toward the FSM contingency fund. The rules governing its use are set forth in Article X. The expectation is that the fund will permit the FSM to address lesser-magnitude disasters with increasing effectiveness and self-reliance and without U.S. Government assistance.

Following a disaster, USAID may provide initial assistance of US$100,000 for immediate relief. Should the emergency require greater response, needing more resources than those available through the DAEF, the international community, and USAID, the President of FSM may request a U.S. PDD. Following a PDD, USAID will implement the relief and reconstruction activities in accordance with the DRRP. The funding will be provided by FEMA, which will remain available as a "safety net" of last resort. The following steps must occur before the U.S. President will make a determination regarding a PDD:

- The President of FSM has declared a national state of emergency/disaster
- FSM has utilized its own resources including its DAEF pursuant to the conditions of Annex A to Article X to address the disaster by expending either: (a) up to 50% of the DAEF balance at the time of the declaration of a state of emergency/disaster; or (b) another amount that the FSM and the U.S. Government deem appropriate to satisfy this requirement
- The Compact Nation has requested assistance from the UN in writing, e.g., email or letter; USAID verification of this request fulfills this requirement
- The U.S. COM has, under his/her authority, declared a disaster that has triggered a request for a contribution of assistance from USAID under the COM disaster declaration
- Based on the findings of a JDA, the President of FSM determines that supplemental assistance is needed even after national, international, and other U.S. Government sources to date have been factored in, and the information from the JDA supports that determination; and
- The President of the FSM has made an official request for a PDD.[181]

Among actions taken by USAID and its partners in recent years, in 2021, USAID supported capacity building efforts in FSM. This support resulted in a strategy to improve climate resilience and increase food security for farming households, and this strategy helped to secure US$9.4 million in climate change-related grants from the Green Climate Fund (GCF). The strategy introduces and enhances sustainable agricultural practices and develop climate-resilient agriculture value chains.[182]

USAID/BHA also collaborates with USAID/Philippines, the U.S. Embassy Majuro, the U.S. Department of Agriculture, NOAA, various UN system agencies, and international and local NGOs. Some of the capacity building programs undertaken in the past 10 years include:

- USAID/BHA provided assistance to strengthen COVID-19 capacity, including support to partners who undertake humanitarian coordination, protection, logistics, and WASH activities, as well as the provision of relief commodities to vulnerable populations. Among other projects, to help Pacific nations overcome unique COVID-19 challenges, such as dispersed and isolated communities, limited transportation options, and difficulties in procuring essential supplies, USAID/BHA provided US$5 million to WFP to support the Pacific Logistics Cluster and the Pacific Emergency Telecommunications Cluster to enable the Clusters' work to increase logistics capacity

and build more effective COVID-19 risk communication.[183]

- Since 2010, USAID/BHA has supported the Inclusive Mitigation and Preparedness in Action (IMPACT) program that assists communities and government authorities to be better prepared for and more resilient to disasters. In Fiscal Year (FY) 2020, USAID/BHA supported IOM to implement the IMPACT program through nearly US$1.2 million in funding. IOM works with local communities to identify and implement interventions to build resilience, including strengthening emergency evacuation shelters, increasing water security, and promoting food security.[184]
- In FY2020, USAID/BHA provided US$100,000 to NOAA to develop and publish an FSM Homeowner's Handbook to Prepare for Natural Hazards through the University of Hawai'i Sea Grant College Program. The handbook covers risks associated with natural hazards in FSM, emergency supplies, evacuation planning, and retrofitting of homes to reduce damage risk from natural hazards such as flooding, high winds, rising seas levels, and typhoons.[185]
- In FY2018 and FY2019, USAID/BHA provided nearly US$1.3 million to three Red Cross Societies, including MRCS, to build awareness of disaster response activities and cultivate a trained volunteer base for emergency responses. In addition, in FY2019, USAID/BHA provided approximately US$1 million to the WHO to enhance emergency medical coordination in FSM, Kiribati, Palau, the Marianas, and Tuvalu, to bolster first responder capacity.[186]
- Since FY2017, USAID/BHA has provided a total of approximately US$3 million to Catholic Relief Services (CRS) to implement DRR activities in Yap. USAID/BHA supports CRS to augment the capacity of local authorities and communities to prepare for and recover from frequently occurring natural hazards. Outcomes of the multi-year program include a state disaster risk management plan, training for households to develop and adopt household-level preparedness plans, and support for vulnerable households to diversify or enhance agricultural livelihood strategies, thereby ensuring food sources and agricultural livelihoods are resilient to drought and typhoons.[187]
- Since FY2016, USAID/BHA has delivered US$3 million for a partnership with the American Red Cross and MRCS to build local capacity and reduce communities' vulnerability to disaster risks by improving sanitation infrastructure, increasing water supply, sharing WASH and disaster awareness information with communities, and upgrading evacuation centers.[188]
- Since 2009, USAID/BHA has supported NOAA to deploy "Chatty Beetles" – satellite terminals that make text messaging possible in areas with limited connectivity – to disseminate weather and hydrometeorological alerts and information to remote locations. The messaging system connects emergency managers and hydrometeorological warning authorities to provide basic notification of potential hazards to isolated communities that face limited communication options. Chatty Beetles help national meteorological and hydrological services and national disaster management agencies disseminate life-saving early warning alerts in FSM.[189]

Major disaster responses that included USAID and partners were those after Typhoons Maysak (2015) and Wutip (2019), and Tropical Depression Jelawat (2018).

Damage from Typhoon Maysak on Chuuk and Yap islands was significant. An initial assessment in Chuuk's state capital of Weno found that 60–80% of houses were badly damaged, over 800 homes were destroyed, and more than 6,000 people were displaced. Crops were also significantly damaged. On Yap's Ulithi Atoll most homes were destroyed, and there was widespread damage to crops and infrastructure. The

Governors of both states and the President of FSM declared a state of emergency and requested assistance from the U.S. Government under the terms of the COFA. The U.S. President issued a PDD, and USAID and the Government of FSM coordinated with other agencies to implement a reconstruction program, implemented by IOM. The reconstruction efforts covered a three-year period and cost US$42 million. It resulted in construction of over 400 new homes and over 150 public facilities (schools, clinics, and rain catchment systems); provision of materials and vouchers worth nearly US$2.8 million to over 1,350 beneficiaries who lost their homes, possessions, and livelihoods; and training for 1,500 local residents to rebuild their homes and communities using resilient designs and high-quality materials.[190]

Typhoon Wutip damaged crops, houses, public buildings, and WASH infrastructure on Chuuk, Pohnpei, and Yap. The FSM President declared a disaster, a declaration that led to the release of US$100,000 from the DAEF, and the COM of the U.S. Embassy also declared a disaster, enabling USAID, FEMA, and the Government of FSM to carry out a JDA. The JDA team recommended relief activities supporting agriculture and food security in affected areas. Later, the U.S. President issued a PDD, enabling the release of FEMA funding with which USAID/BHA supported CRS to provide agricultural rehabilitation services and IOM to provide locally procured food assistance for typhoon-affected populations. In addition, the U.S. Department of Agriculture provided in-kind food assistance, while USAID/Philippines supported the reconstruction of 136 houses and 39 public structures.

Tropical Depression Jelawat brought heavy rainfall to Pohnpei; the downpours resulted in flooding, landslides, damage to critical infrastructure, and one death. In response, the Governor of Pohnpei declared a state of emergency, and the FSM President issued a presidential declaration of emergency, authorizing the release of US$50,000 from the DAEF. The U.S. Ambassador also declared a disaster, allowing FEMA and USAID to conduct a JDA. The JDA and a follow-up agricultural damage assessment identified needs for critical infrastructure repair and agricultural damage rehabilitation assistance in landslide and flood-affected areas. The U.S. President then also issued a PDD, releasing funding for emergency relief and reconstruction assistance to FSM. As a result, USAID/BHA supported agricultural rehabilitation assistance and USAID/Philippines supported the repair of nearly 250 damaged or destroyed houses, as well as damaged public infrastructure and utilities.[191]

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Laws, Policies, and Plans on Disaster Management

The Disaster Relief Assistance Act of 1989 and the National Disaster Relief Plan (NDRP, 2016) provide a national framework for disaster management. However, states retain much of the responsibility and rely primarily on federal agencies for facilitation. The four states have each developed a Joint State Action Plan for Disaster Risk Management and Climate Change

(JSAP), and these plans provide the framework for inter-governmental cooperation under the National Integrated Disaster Risk Management and Climate Change Policy (2013).

Disaster Relief Assistance Act of 1989

The Disaster Relief Assistance Act formally lays out federal roles and responsibilities. It vests in the President the power to request aid from the U.S. Government and other overseas public and private entities. In addition, it names the President as the agent who will coordinate foreign aid with national and local action. The Act states that in the event of a threatened or existing disaster, the President may provide immediate assistance from the Disaster Relief Fund in order to save lives, preserve property, and protect public health and safety.[192]

Under the Act, the President is authorized to establish programs of preparedness, assistance, and relief using the assets and services of all government agencies and including the assistance of the U.S. federal authorities and other foreign government agencies. The President's office is specifically authorized to prepare plans for mitigation, early warning, emergency operations, rehabilitation, recovery, training and exercises, and after action reports and evaluations, and to coordinate the national and state preparedness programs.[193] The NDC is responsible to the President for policy development and for the strategic management of planning and arrangements for disaster preparedness and response. It is also responsible for the overview of disaster events and for accessing international, regional, and bi-lateral support arrangements.

The Act requires that, to be eligible for national assistance, states must prepare a disaster plan, appoint a state officer to maintain the plan and to recommend measures to prevent, prepare for, and recover from disasters, and be prepared to disseminate information pertinent to the disaster event in both the primary local language and English. In a case where a state government determines that assistance is required, the Governor petitions the President who will then decide on the type and level of assistance to be provided. States must work through the President to seek and acquire international assistance. The Act also stipulates that the national authorities should maintain a register of people with specific disaster management skills and expertise that can be shared with the States.[194]

Strategic Development Plan (2004-2023)

The Strategic Development Plan (2004-2023) centers national development action on four pillars: Stability and Security, Improved Enabling Environment for Economic Growth, Improved Education and Health Status, and Assured Self-Reliance and Sustainability. In addition to laying out ways to maintain funding and resources to provide basic necessities, it looks to maintain economic assistance at levels that support macroeconomic stability and continue the national commitment to economic reform and to open, outward-oriented, and private sector-led development.[195]

National Integrated Disaster Risk Management and Climate Change Policy (2013)

The Disaster Risk Management and Climate Change Policy was an attempt to develop a multi-hazard approach to integrate risk management, CCA, and GHG emissions reductions. It explicitly seeks a "ridge to reef" approach to ensure that DRR or CCA measures that are implemented are socially and ecologically sound and take into consideration the advice and participation of marginalized groups (e.g., women, small atoll communities, persons with disabilities, and the elderly). The Policy is designed to parallel the national Strategic Development Plan (2004-2023) to support economic resilience, food, water, and energy security, safe settlements, waste management, health and social protection, and education. Key elements under the Policy are that FSM intends to prevent climate change-induced migration but also to ensure that environmental migration is managed in a humane way when it is absolutely necessary.

At the national level, the DECEM has the responsibility to promote and coordinate

implementation of the Policy and to provide updates on implementation to the President and national Congress. However, responsibility for implementation lies with the states, and the Policy encourages the states to prepare DRR and CCA State Action Plans. Moreover, the Policy encourages states to integrate local stakeholders (municipal leaders, traditional leaders, churches, women's groups, etc.) and even the private sector into planning and execution.[196]

Following the publication of the Policy, the Congress passed a law to codify the obligations of the national government in furtherance of the Policy. It added the "Climate Change Act" as part of the national legal code under which DECEM, the Department of Resources and Development, Department of Transportation, Communications, and Infrastructure, Department of Health and Social Affairs, Department of Education, Department of Finance and Administration, Office of Statistics, Budget, and Economic Managements, and Department of Foreign Affairs all were required to prepare climate change plans and policies.[197] In March 2017, a Climate Change and Sustainable Development Council was established to ensure implementation of the Climate Change Act. The Council provides leadership and institutional coordination on mainstreaming climate change into policies and actions across all sectors and initiatives.[198]

The following are the State Plans that fulfill requirements of the National Integrated Disaster Risk Management and Climate Change Policy:

Kosrae Joint State Action Plan on Disaster Risk Management and Climate Change (JSAP) – The Kosrae JSAP recognizes that the state is particularly vulnerable to ENSO events that affect rainfall and sea level and to typhoons, and it suggests that its natural resources (landscapes) are assets that bolster resilience. This is particularly true for the state's mangroves, which are targeted in plans to sustain biodiversity. The potential for a typhoon to strike – although a low probability event – is still a concern, and the JSAP cites the state's high concentration of infrastructure along the coast as a key vulnerability. Among the policies upon which the JSAP rests is the Kosrae State Hazard Mitigation Plan (2005), which had already promoted disaster-resistant development via increasing public understanding, supporting local capacity, improving hazard mitigation coordination, and reducing the possibility of damage and losses due to flood, landslides, storms, heat, fire, epidemics, and other hazards.[199]

Pohnpei JSAP – The Pohnpei JSAP incorporates priority areas under health, education, social protection, agriculture and fisheries, environment, infrastructure, economic resilience, and DRR and CCA rubrics. It lays out the needs for human resources support and the other potential challenges to Pohnpei's ability respond to and mitigate disasters. It discusses the integration of civil society into the Pohnpei JRM Network wherein stakeholders share information and coordinate or deconflict programming.[200]

Chuuk JSAP – The Chuuk JSAP was developed in April 2016 in a process led by the Chuuk Disaster and Emergency Operation Center (CDEOC) and supported by OEEM (now DECEM) and the Pacific Community Geoscience Division. The JSAP provides the people of Chuuk with prioritized actions to address risk across all sectors. Chuukese stakeholders developed actions across six priority areas that represent the main elements of livelihoods that need to be sustained and strengthened.[201]

Yap JSAP – The Yap JSAP incorporates priority areas under health, education, resource development, the private sector, socio-cultural, infrastructure, and DRR and CCA rubrics. It proposes institutional arrangements that bring both DRR and CCA under the same office; however, each Governor's administration to date has managed things in their own way. The Office of Planning and Budget (OPB) has often been tasked with CCA and risk management, but when personnel have shifted offices, they have occasionally retained their portfolios until they can be transferred. The responsibility for JSAP

itself resides with the Yap Risk Management Network (YRMN), comprised of members of the Yap State Government departments and offices, partners, and NGOs. The YRMN is chaired by the OPB, and Secretariat assistance is provided by IOM.[202]

National Disaster Response Plan (NDRP) 2016

The NDRP aims to establish the national institutional arrangements to respond to emergency and disaster events. It includes arrangements for preparedness, monitoring of potential events, national response, and local support. It guides states to make disaster response plans and includes provisions for access to international aid.[203]

Under the NDRP, the President receives advice from the NDC and makes decisions in relation to priorities, committing resources, and accessing international assistance during disasters. The Plan outlines as follows the functions of the NDC:

- Advising the President on strategic institutional, policy, and funding issues necessary to provide for effective disaster preparedness and response
- Managing relationships with international, regional, and bi-lateral partners to coordinate and optimize external support for disaster management activities
- Overseeing the establishment of national disaster management operational arrangements; and
- In the event of a disaster, providing management oversight of and advice to the President on the response to the event.[204]

While the Disaster Relief Assistance Act places responsibility for national coordination within the President ‘s office, under the NDRP, the OEEM (now DECEM) is the implementing agency. Strategic oversight is provided by the NDC, chaired by the Director of DECEM and comprised of the heads of various government agencies and departments.[205]

The Plan outlines arrangements for state disaster management as minimum requirements to guide the development of State Plans. At the state level, the NDRP calls for establishment of SDCs for collective and strategic oversight and advice to the Governor during emergencies and disasters. The SDC will comprise the Heads of State Offices responsible to the Governor and its lead advisor is the head responsible for disaster management. At the state operations level, the lead agency responsible for disaster management allocates the operations function to a division within the office. The division is designated the State Disaster Management Office and is responsible for preparedness and operational response arrangements through the state and for managing the SEOC. Finally, the NDRP establishes state operational arrangements for disaster response coordination comprising the SDCT, CWGs of state sector agencies, and other operational partners. During emergencies and disasters, the SDCT operates through and is supported by the SEOC.[206]

Chuuk State Plans/Policies

The state has developed additional programs and procedures to guide DRR and disaster management.

Chuuk State Disaster Management Plan and Operation Procedures (December 2015) — The Plan outlines the roles and responsibilities for disaster management and response. Chuuk Disaster and Emergency Operation Center (CDEOC) provides support and assistance to the State Emergency Committee, which is the main coordinating focal point. The Committee operates from the EOC. Members include all cabinet members including the Governor, Attorney-General, Chief of Staff, department directors, and other state and private sector managers. The Governor is the Chair. Each sector is charged with developing emergency management Standard Operating Procedures as approved by the Chair. Different emergency situations require different departments and agencies to notify the Chair. In an emergency situation, Lead Response Agencies and Support Response Agencies are defined. The lead agency submits a damage assessment report to the

Governor who may establish a recovery program and management committee. There are four stages of development outlined in the Plan: mitigation, readiness, response, and recovery.

Chuuk International Airport Emergency Plan — This Plan is developed to provide a coordinated response to an emergency involving a Boeing 737 aircraft carrying 150 passengers or other aircraft. The airport manager coordinates all on-site activities until the Director of Transport arrives on the scene. Responsibilities are also outlined for the Attorney-General; Medical Unit; Department of Public Safety; Department of Public Works; Department of Marine Resources; Sea Transportation Division; and private boat owners. Threats outlined include hijack, sabotage, pilferage or theft, bomb, fire, natural disaster (typhoon, high winds, heavy rains), civil disturbance, radiological incidents, and nuclear attack.[207]

Kosrae's Shoreline Management Plan (2013)

The Plan was developed with German funding. It found that adaptation to future climate change requires an emphasis on preventative measures that remove exposure rather than a primary focus on impact reduction. Preventative measures, particularly to cope with coastal erosion, were prescribed and have been initiated in Kosrae, through both autonomous (initiated by individuals or households) or planned (initiated by governments and NGOs) action. Greater consideration of where and how development and infrastructure is built, along with boosting natural protections (e.g., tree planting and protecting reef ecosystems) are considered the most appropriate risk reduction measures.[208]

Disaster Management Communications

FSM is integrated into regional and many U.S. government meteorological and seismic warning systems, through which the national and state governments of FSM receive technical data and information on hazards. The national government is generally responsible for ensuring that policies keep the country linked into these networks while state governments and local leaders are responsible for ensuring their communities are prepared to respond to any warnings. State Red Cross chapters and governments provide information both via their internet presence and via local mass media or police and public address systems.

Early Warning Systems

The U.S.-FSM COFA, Section 221: Article II (Program Assistance) allows for the U.S. National Weather Service (NWS) to deliver products to FSM; these products include weather information and tsunami warnings.[209] The Pacific Region of the NWS administers programs and facilities throughout the Pacific, including on the islands of FSM.[210] NWS' Weather Forecast Office (WFO) Guam communicates information to Weather Service Offices (WSO) in each state except Kosrae.[211]

The NWS Pacific Region also administers the Honolulu-based Pacific Tsunami Warning Center (PTWC),[212] which issues warnings to WFO Guam. WFO Guam then notifies the WSOs in Chuuk, Pohnpei and Yap States, which in turn notify their relevant disaster offices. WFO Guam directly notifies the Kosrae State disaster office. Pohnpei WSO also notifies the Governors of any tsunami warnings as the Governor's office is the authorizing body for warning dissemination and evacuations.

All WSOs are operated 24-hours daily, year-round. They are connected to Guam and receive notifications via automated systems with telephone and internet backup. State disaster committee officers and local police also back each other up if, for some reason, one person does not receive communications. The disaster committee officers also rely on DECEM to further disseminate warnings. In major population centers, police sirens and public address systems are the primary means to notify the public, and on Pohnpei, FM and AM radio stations are available to deliver warnings. However, in remote areas, including

outer islands, high frequency radio and "Chatty Beetles" are the primary means to disseminate warnings although the commercial telephone system allows telephone calls and text messages, and improvements in that network in recent years have allowed swifter message delivery.[213]

Since 2009, USAID/OFDA (now BHA) has supported NOAA to deploy "Chatty Beetle" satellite terminals that facilitate text messaging in remote areas with limited connectivity to disseminate hydrometeorological alerts and other important information. The messaging system connects emergency managers and authorities to provide hazard notifications to communities in Fiji, FSM, Kiribati, Palau, the Marshall Islands, Samoa, Tonga, and Tuvalu.[214] The "Chatty Beetle" is a 2-way Iridium satellite-based system packed in a ruggedized case and with ruggedized internal components for remote, high salt, high heat, high humidity areas. They operate with AT1621-142W or SAF5340A antennas and use a 4-volt (V) battery with a 36-hour life, chargeable with a 100-240V outlet. It has a 9602 or 9601 SBD LBT modem designed for Iridium Short Burst Data service and can store up to 10 messages at one time. It is based on a 159-character text message system for notification of early warning hazard messages and is used as a primary tool for collection of climate, meteorological, and surf/inundation observations. It is also capable of sending messages to email or mobile-cellular telephone.[215]

UN agencies are active regionally and within FSM specifically to build up the skills needed to maintain and improve early warning systems. In addition, they are partners ensuring FSM meteorological and hydrological – as well as other climate-related – agencies have the best data to build out risk profiles and to inform communities about those risks. IOM has supported FSM in installing early warning systems. They conducted a one-way radio broadcast assessment that surveyed and mapped medium-wave AM radio broadcasting facilities and 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 (UNESCAP) cooperated with the government to build and operate an online geo-portal for early warning systems and disaster risk management in 2018.[216]

The Climate Risk and Early Warning Systems (CREWS) Initiative is a mechanism to finance the development of institutions involved in climate science and disaster management. The CREWS programs support risk identification and mapping, strengthening national meteorological and hydrological services, data sharing, and improvements to communication and early warning systems.[217] FSM is among the 14 Small Island Developing States (SIDS) that are partnering with CREWS in the Pacific where the Strengthening Hydro-Meteorological Early Warning Systems in the Pacific project launched in July 2021. CREWS Pacific SIDS 2.0 is a 4-year US$4.8 million project to run through December 2024. Implementing partners are the World Meteorological Organization (WMO), UNDRR, and the World Bank Global Facility for Disaster Reduction and Recovery (GFDRR) while regional partners – the Secretariat of the Pacific Regional Environment Programme (SPREP), SPC, and the Australian Bureau of Meteorology – will implement trainings on weather, water, and climate products and systems; community-based early warning activities; and enhanced communication and awareness programs.[218] The initial CREWS Pacific SIDS program ran from 2017 through 2021 and worked to build governance by promoting development or revamping of laws, policies, and plans related to climate, water, weather, and ocean services. By the end of 2021, FSM had been engaged in developing strategic-level plans.[219]

Information Sharing

Understanding how to overcome the information challenges that civilian and military agencies experience during a typical disaster response mission is important. Sharing information is critical since no single responding entity, NGO, International Governmental Organization, assisting country government, or the host government can be the source of

all the required information.[220] Collaboration, information sharing, and networking have been the backbone of successful disaster response and preparation. Disseminating information not only to those in-country and threatened by disaster, but also to those responding to assist in the emergency has been crucial to timely, efficient, and effective disaster response. Recent technology has advanced to aid predicting and alerting of disasters around the world and, thus, to more accurate early warning and improved evacuation measures. There are many resources, stakeholders, and components to consider before, during, and after a natural disaster, and this section will discuss country-specific, humanitarian, regional, government, and DoD information sources.

FSM Information Sources

Office of the President

The national President's Office delivers various information regarding issues of national interest, including emergency information via its Public Information Office.
Website: *https://gov.fm/index.php/fsmpio*
Twitter: @FSMPIO

State Governments

The State governments are the lead responders for incidents within their territory.

Kosrae Public Information Office

The Kosrae state government Public Information Office disseminates updates and important information via Facebook.
Facebook: Kosrae Public Information Office, KSG

Pohnpei State Government

Pohnpei State "Enginkehlap" disseminates some information online. The Governor's Office shares information on social media and uses commercial email for other communications. The Department of Public Safety is a key player in disaster preparedness and response.
Facebook: PohnpeiStateGov
Department of Public Safety
Tel: +691-320-3910
Email: *publicsafety@mail.fm*

Chuuk State Government
Facebook: ChuukStateGovernment

Yap State Government
Twitter: @YapStateGovNews

Micronesia Red Cross Society (MRCS)

MRCS is an auxiliary of the government and has chapters in each state. MRCS volunteers are prepared to assist in times of emergency, and the Society does update information on its Facebook profile.
Email: mrcs@mail.fm
Facebook: @mrcs181

Humanitarian Information Sources

IOM Micronesia

IOM has a global presence with over 400 field locations worldwide, including six offices in the North Pacific. The Head Office for IOM's operations in Micronesia is in Pohnpei. It has sub-offices in Chuuk, Kosrae, and Yap, as well as in Majuro (Republic of the Marshall Islands) and Koror (Republic of Palau). IOM Micronesia works with regional governments and partners in the areas of capacity building, education, emergency preparedness and response, climate adaptation, health, and counter trafficking.
Tel: 691-320-8735/95
Email: *micronesiaenquiries@iom.int*
Facebook: @IOMMicronesia
YouTube: IOM Micronesia
Twitter: @IOMMicronesia

United Nations Office for the Coordination of Humanitarian Affairs (OCHA) Office of the Pacific Islands

OCHA's Office of the Pacific Islands mobilizes and coordinates humanitarian action in partnership with national and international actors. Its key objective is to support national efforts to protect the lives, livelihoods, and

dignity of people in need. OCHA Office of the Pacific Islands personnel can provide support in information management, reporting, mapping, media and communications, assessments, humanitarian financing, and inter-cluster coordination. OCHA can deploy teams to assist in the coordination of incoming international relief at the earliest stages of an emergency.
Website: *https://www.unocha.org/pacific*
For OCHA situation reports, click on "Subscribe" button on top of page.

Pacific Humanitarian Team

The Pacific Humanitarian Team (PHT) was established by OCHA in 2008 to ensure that regional responders work together to deliver timely and appropriate humanitarian assistance to disaster-affected people across the Pacific. The PHT operates under the co-leadership of the UN Resident Coordinators in the Pacific, based in Fiji and Samoa, and consists of UN agencies, Red Cross representatives, regional and bilateral organizations, national and international NGOs, faith- and community-based organizations, and donors. PHT will use a regional cluster approach to support national-led disaster management when requested. OCHA acts as the Secretariat of the PHT and provides an online platform to share information.[221]

PHT reports and datasets are hosted on ReliefWeb Response: *https://response.reliefweb.int/pacific-region*

ReliefWeb

ReliefWeb is a service of UN OCHA that consolidates information and analysis from organizations, countries, and disasters for the humanitarian community.
Website: *https://reliefweb.int/*

PreventionWeb

PreventionWeb is provided by UNDRR to consolidate DRR information into an online, easy-to-understand platform.
Website: *https://www.preventionweb.net/*

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

IFRC is the world's largest humanitarian organization, comprised of its 192 member National Societies including the Micronesia Red Cross Society, a secretariat in Geneva, Switzerland, and over 60 delegations around the world. The IFRC carries out relief operations to assist victims of disasters and combines this with development work to strengthen the capacities of its member National Societies.[222] The IFRC's Suva Cluster comprises 11 National Societies in the North Pacific, including FSM. Through a sub-delegation in the North Pacific, the Cluster Delegation provides support to the MRCS.[223]
Website: *https://media.ifrc.org/ifrc* and *https://go.ifrc.org/*

International Committee of the Red Cross (ICRC)

ICRC is an impartial, neutral, and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of armed conflict and other situations of violence and to provide them with assistance. It also works to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles. ICRC, together with IFRC and the 192 National Societies, make up the International Red Cross and Red Crescent Movement.[224]
Website: *https://www.icrc.org/en*

Humanitarian Response

Humanitarian Response is a platform providing the humanitarian community a means to aid in coordination of operational information and related activities.
Website: *https://www.humanitarianresponse.info*

Global Disaster Alert and Coordination System (GDACS)

GDACS is a cooperation framework between the UN, the European Commission, and disaster managers to improve alerts, information exchange, and coordination in the first phase of response after major sudden-onset disasters.
Website: *https://www.gdacs.org/alerts/*

Virtual OSOCC

The Virtual OSOCC is a real-time online coordination tool for disaster response professionals from urban search and rescue teams, national authorities, and regional and international organizations at a global level.
Website: *https://vosocc.unocha.org/*
The latest alerts can be found here: *https://www.gdacs.org/Alerts/default.aspx*
To subscribe: *https://www.gdacs.org/About/contactus.aspx*

ThinkHazard!

ThinkHazard! is a website that provides detailed information on a country. Information is provided on the FSM regarding hazards, country assessments, projects, early warning systems, and other resources.
Website: *https://thinkhazard.org*

Humanitarian Country Teams (HCT)

HCT is a strategic and operational decision-making and oversight forum established and led by the Humanitarian Coordinator in each country. It is generally comprised of representatives from UN agencies including the IOM, international NGOs, and the IFRC as well as the respective National Red Cross or Crescent Society. During a disaster response, HCTs often produce a Situation Report (SitRep), usually in conjunction with OCHA.

Most HCT SitReps can be found through ReliefWeb: *https://reliefweb.int/*

Humanitarian Data Exchange (HDX)

HDX is an open platform for sharing data across crises and organizations. It launched in 2014 with the goal of centralizing humanitarian data for easy access and analysis. HDX is managed by OCHA's Center for Humanitarian Data in The Hague.
Website: *https://data.humdata.org/*

U.S. Government Sources

U.S. Agency for International Development (USAID)

USAID is committed to responding to crises around the world to help people and places most in need. They aim to:

- Promote Global Health
- Support Global Stability
- Provide Humanitarian Assistance
- Catalyze Innovation and Partnership
- Empower Women and Girls

USAID produces a monthly newsletter, which is available digitally at *https://www.usaid.gov/news-information/newsletter*.

More information and updates from USAID are available via their blog, IMPACT, at *https://blog.usaid.gov/* and on Facebook (USAID), Twitter (@usaid), and YouTube (usaidvideo).
Website: *https://www.usaid.gov/*

USAID Bureau for Humanitarian Assistance (BHA)

USAID's BHA is responsible for leading and coordinating the U.S. Government response to disasters overseas. BHA responds to an average of 75 disasters in 70 countries every year. BHA fulfills its mandate of saving lives, alleviating human suffering, and reducing the social and economic impact of disasters worldwide in partnership with USAID functional and regional bureaus and other U.S. government agencies. BHA works with the international population to assist countries to prepare for, respond to, and recover from humanitarian crises.[225]

USAID/BHA products include situation reports and maps, which are available via email mailing lists as well as reliefweb.int. Information products (Updates/Fact Sheets, etc.) are also available on USAID.gov (*https://www.usaid.gov/humanitarian-assistance*)

BHA also updates followers via social media on Facebook (USAIDSavesLives) and Twitter (@USAIDSavesLives).

For BHA updates on a disaster response, ask the BHA representative for the respective DoD Geographic Combatant Command to add you to the email list, if you have a U.S. government email address:

- *BHA.INDOPACOM@usaid.gov*
- *BHA.SOUTHCOM@usaid.gov*
- *BHA.NORTHCOM@usaid.gov*
- *BHA.AFRICOM@usaid.gov*
- *BHA.SOCOM@usaid.gov*
- *BHA.CENTCOM@usaid.gov*
- *BHA.EUCOM@usaid.gov*

Pacific Disaster Center

Pacific Disaster Center (PDC) has trademarked an early warning and decision support system called DisasterAWARE®. DisasterAWARE® is primarily for disaster management practitioners and senior decision makers. It supports DRR and best practices throughout all phases of disaster management from early warning to multi-hazard monitoring. It has a collection of scientifically verified, geospatial, data and modeling tools to assess hazard risks and impacts. A restricted version of DisasterAWARE is the EMOPS (Emergency Operations) system, which is specifically for the disaster management community, including government agencies and humanitarian assistance organizations serving at local, state, federal, and regional levels.[226]

PDC also provides a public version, Disaster Alert, which offers open access to a world map documenting 18 hazard types.[227] Disaster Alert also has a free, early-warning app to receive customizable map-based visual alerts of active hazards. The app offers a global notification system covering natural and man-made hazards. It is available on both iPhone and Android.[228]
Website: *https://www.pdc.org/* and *https://www.pdc.org/apps/disasteraware/*
Emergency Operations (EMOPS) system (request account): *https://emops.pdc.org/emops/*

All Partners Access Network (APAN)

APAN is the Unclassified Information Sharing Service for the U.S. DoD. APAN provides the DoD and mission partners community space and collaboration tools to leverage information to effectively plan, train, and respond to meet their business requirements and mission objectives. For over 15 years,[229] APAN has played an integral role in the success of disaster responses, including the 2015 California Wildfire Response and the 2013 Typhoon Haiyan Response. During operations, APAN can provide organizations and militaries a centralized location to share information, increase situational awareness, and decrease response time and duplicated efforts.[230]
Website: *https://www.apan.org/*

National Oceanic and Atmospheric Administration (NOAA) and National Weather Service (NWS)

NOAA and NWS are U.S. government agencies (under the Department of Commerce) that deliver daily weather forecasts, severe storm warnings, and climate monitoring for fisheries management, coastal restoration, and support for marine commerce. NOAA scientists' research provides citizens, planners, emergency managers, and decisionmakers with reliable information. Among NOAA's service centers is the U.S. Tsunami Warning System, including the PTWC in Honolulu that feeds tsunami information and warnings to FSM. The U.S. NWS serves FSM via a regional forecast office in Guam and via offices in Pohnpei, Chuuk, and Yap.
Twitter/Facebook: NOAA or NWS
YouTube: usnoaagov or usweathergov
Tsunami Warning Center: *https://www.tsunami.gov/*

Pacific Tsunami Warning Center
Twitter: NWS_PTWC
Facebook: UsNwsPacificTsunamiWarningCenter

NWS Forecast Office, Guam
Twitter/Facebook: NWSGuam
Website: *https://www.weather.gov/gum/#*

WSO Pohnpei
https://www.weather.gov/gum/WSOPohnpei

WSO Chuuk
https://www.weather.gov/gum/WSOChuuk

WSO Yap
https://www.weather.gov/gum/WSOYap

Joint Typhoon Warning Center

The Joint Typhoon Warning Center provides advanced warning for U.S. Government agencies and organizations in relevant areas.
Website: *https://www.metoc.navy.mil/jtwc/jtwc.html*

Daniel K. Inouye Asia-Pacific Center for Security Studies (DKI-APCSS)

DKI-APCSS is a U.S. DoD institute that addresses regional and global security issues, inviting military and civilian representatives of the U.S. and Asia-Pacific nations to its program of executive education and workshops.
Website: *https://apcss.org/*

The Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM)

The CFE-DM is a U.S. DoD organization that was established by the U.S. Congress in 1994 and is a direct reporting unit to U.S. INDOPACOM. CFE-DM provides training and education to help U.S. and foreign military personnel navigate complex issues in disaster management and humanitarian assistance. They produce country-focused disaster management reference handbooks, after action reports, best practices pamphlets, and lessons learned documents for advancement in response coordination. CFE-DM also works to improve cross-coordination and reduce duplication of efforts and promote U.S. involvement, as part of a U.S. Government interagency effort involving USAID, in civilian-military consultations and dialogues with relevant stakeholders such as OCHA and other international organizations as well as partner nations. CFE-DM provides resources and updates at its website, as well as via their Facebook and Twitter accounts (@cfedmha).
Website: *https://www.cfe-dmha.org/*

Disaster Management Reference Handbooks are available for download at: *https://www.cfe-dmha.org/DMHA-Resources/Disaster-Management-Reference-Handbooks*

Civil-Military Coordination in Foreign Disaster Relief Missions: Best Practices for Information Sharing is available here: *https://www.cfe-dmha.org/Publications*

INFRASTRUCTURE

Most of the population of FSM (60%) lives close to the coast – within 200 m (650 feet) of the shoreline. These numbers differ slightly among states with some seeing 50% living near the coast and some topping 80% coastal settlement. Nonetheless, in all states, critical infrastructure – roads, schools, places of employment, port facilities, tourist facilities, power plants, and airports – is located primarily in the coastal zone, which is threatened by rising sea levels and typhoons. In addition, the scattered character of the islands of the country means there is significant reliance on air and sea transport and an inability to achieve economies of scale by networking utilities among islands.

Transport

Roads and pedestrian facilities are a key priority sector for expenditure under the Infrastructure Development Plan (IDP, 2004-2023), with US$120.9 million earmarked for spending over 20 years. An additional US$88.5 million investment for maritime transportation and US$68.4 million for air transportation has also been planned.[231] The national Department of Transportation, Communications, and Infrastructure is tasked with development and administration of policies and regulations to ensure reliable transport and communications and to ensure that capital projects meet construction safety standards and are cost effective. Under the Secretary, the Transportation Division oversees civil aviation and marine transport, including two major merchant vessels; the Infrastructure Division oversees development plans and safety.[232] Funding for road maintenance and capital road works is allocated annually by the National Government to State Governments' public works or transport departments.

There is no railway network, and FSM has no navigable internal waterways.

Airports

Each of the four states has a small international airport,[233] and there are fewer than one dozen airfields on outer islands.[234] Generally, facilities are inadequate for accommodating cargo, and interface with public transportation is poor. In Yap, the international airport is on Yap Proper; it is in need of upgrade. Small airports also operate on the islands of Ulithi, Fais, and Woleai.[235] Pohnpei has airports on three of its outlying islands – Mokil, Sapwuahfik, and Pingelap. The Pohnpei main island airport is at risk of inundation from sea level rise and storm water surge.[236] Table 4 shows the details of FSM's international and domestic airports.[237]

Chuuk International Airport is located on a northwestern strip of Weno Island and is just north of Mount Tanaachau. The airport is owned and operated by the Chuuk State Government

International Airports	IATA/ICAO Code	Runway Length
Chuuk International Airport	TKK/PTKK	1,831 × 46 m (6,006 × 150 feet)
Kosrae International Airport	KSA/PKSA	1,753 × 46 m (5,751 × 150 feet)
Pohnpei International Airport	PNI/PTPN	1,829 × 46 m (6,000 × 150 feet)
Yap International Airport	YAP/PTYA	1,831 × 46 m (6,006 × 150 feet)
Intra-FSM Airports		
Fais Civil Airfield (Yap)	n/a	914 × 23 m (3,000 × 75 feet)
Houk (Pulusuk) Civil Airfield (Chuuk)	n/a	411 × 15 m (1,348 × 49 feet)
Mortlock Islands Civil Airfield (Chuuk)	n/a	411 × 15 m (1,348 × 49 feet)
Mwoakilloa Civil Airfield (Pohnpei)	n/a	366 × 30 m (1,200 × 98 feet)
Onoun Civil Airfield (Chuuk)	n/a	366 × 23 m (1,200 × 75 feet)
Pingelap Civil Airfield (Pohnpei)	n/a	366 × 30 m (1,200 × 98 feet)
Sapwuahfik Civil Airfield (Pohnpei)	n/a	366 × 23 m (1,200 × 75 feet)
Ulithi Civil Airfield (Yap)	ULI / n/a	914 × 23 m (3,000 × 75 feet)
Woleai Civil Airfield (Yap)	n/a	366 × 23 m (1,200 × 75 feet)

Table 4: Codes and Runway Lengths for FSM Main Airports

as a Division of the State Department of Transportation and Public Works. The airport is at an elevation of 3 m (10 feet) above mean mean sea level. The entire airfield was constructed between 1978 and 1982 on existing coral fill over the reef and extensions into relatively deeper water. Beyond the northeast end of the runway, the existing lagoon is over 30 m (100 feet) deep, and off the west end, the water is over 12 m (40 feet) deep.[238]

Located just off the northern tip of Kosrae, Kosrae International Airport is on a strip of land that is connected to the main island by a single causeway. Most of the surrounding land is industrial space owned by the Kosrae Port Authority, which also owns the airport property. FSM Petroleum Corporation is located across the road from the airport. Okat Harbor is located between the airport land and the main island. The airport is at an elevation of 3.35 m (11 feet) above mean sea level.[239]

Pohnpei International Airport is located on Dekehtik Island, just north of the main island of Pohnpei. Dekehtik is an industrial zone and is also home to a deep-water harbor and port facilities. Most of Dekehtik is owned by the Pohnpei Port Authority and the State of Pohnpei. The airport is owned and operated by the Pohnpei Port Authority. The airport is at an elevation of 2.4 m (8 feet) above mean mean sea level.[240] Photo 2 shows Pohnpei's airport on Dekehtik.[241]

Yap International Airport is on the southwestern portion of Yap Island, at an elevation of 27.7 m (91 feet) above mean sea level. The airport is owned and operated by the Yap State Government as a Division of the State Department of Public Works and Transportation.[242]

Seaports

FSM depends heavily upon maritime transportation. In addition, tourism income derives strongly from exploitation of marine resources and for which adequate maritime transportation infrastructure is required.

There are four international seaports, one in each state. In Pohnpei and Kosrae, Port Authorities manage the ports while in Chuuk and Yap, the Departments of Transport and Public Works or of Infrastructure operate the port. All four ports are in protected lagoon environments. They are all general cargo ports, and almost all in-bound and out-bound freight is containerized. However, there are no wharf unloading container facilities, and all vessels visiting FSM ports must have gantry cranes for loading and unloading. All ports have top loaders or reach stackers for moving and stacking containers once unloaded.[243]

In May 2019, the Maritime Investment Project for Micronesia was approved. The International Development Association and the International Bank for Reconstruction and Development will invest US$38.49 million to improve the safety, efficiency, and climate resilience of maritime infrastructure and operations.[244] In several of their 2016-2025 IDPs, the states target acquisition of a multi-role vessel to support government services and programs, including the shipment of equipment and materials for infrastructure projects on the outer islands and



Photo 2: Pohnpei International Airport on the Island of Dekehtik

to provide a key disaster response and recovery resource.[245] Table 5 shows the details of FSM's major ports.[246]

Roads

The road network is government-owned and -maintained, and in general, there is only one circumferential route on the main island of each of the four states. Road conditions are mostly good to fair although some sections of the network can be in poor or very poor condition due to poor drainage, weather, and shortfalls in maintenance.

At the national level, the Department of Transportation, Communications, and Infrastructure has responsibility for infrastructure, and similar agencies deliver infrastructure at the state level. The following characterize road oversight and maintenance capacity at the state levels.

- Chuuk – the State Department of Transportation and Public Works has responsibility for road development, safety, and maintenance; in a 2021 survey, the World Bank found that asphalt-surfaced roads have all but disappeared and all recent reconstruction is concrete; a local quarry provides concrete aggregate
- Kosrae – the State Department of Transportation and Infrastructure is responsible for the state's roads; the original asphalt surface has been resurfaced on occasion with double seal surface dressing, with imported materials and equipment through an international contractor, but routine maintenance is limited to pothole patching by force account or through local contractors
- Pohnpei – the State Department of Transportation and Infrastructure is responsible for road maintenance and management; it owns an asphalt plant, and aggregate is available from local quarries; it has capacity, but lack of funding limits its ability to undertake routine maintenance of the network or periodic maintenance through resurfacing
- Yap – the Department of Transportation and Public Works is responsible for state road development and maintenance; a donor-funded project has rehabilitated an asphalt-surfaced part of the network, but routine maintenance is done by force account; there is a privately-owned asphalt plant on the island; for major periodic maintenance interventions, there is a need for all materials and equipment to be imported.[247]

Port	Location	Berths	Other Facilities	Notes
Port of Weno (Chuuk)	72645.52 N, 1515023.61 E	1: 180 m (590 feet) 2: 190 m (623 feet) Maximum Draft: 9 m (29.5 feet)	Dockside transit warehouses for bulk break or bagged goods (700 m^2; 7,535 square feet) outside dock area for containers and general (6,000 m^2; 64,583 square feet)	-
Port of Kosrae	5.2101 N, 162.5724 E	1: 165 m (541 feet) Maximum Draft: 9 m (29.5 feet)	General cargo storage: 600 m^2 (6,458 square feet)	-
Port of Pohnpei	6° 58' 50" N, 158° 12' 5" E	International: 264 m (866 feet) Fishing: 70 m (230 feet) Domestic: 60 m (197 feet) Maximum Draft: 12 m (39.4 feet)	2 × dockside transit warehouses (bulk break or bagged goods; 1,200 m^2; 12,917 square feet) outside area container and vehicle storage (7,500 m^2; 80,729 square feet)	Homeport of the merchant vessels CAROLINE VOYAGER and MICRONESIAN NAVIGATOR; when both vessels are in port, they must be birthed side by side
Port of Yap	9.311593 N, 138.73388 E	1: 264 m (866 feet) Maximum Draft: 4-12 m (13-39 feet)	-	-

Table 5: Specifications of International Ports in FSM

The Chuuk, Kosrae, and Yap IDPs (2016-2025) prioritize establishing state-owned asphalt plants with asphalt laying equipment to support road development and maintenance.[248]

FSM has around 240 km (149 miles) of highways. 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. Streets often have large holes, and conditions can worsen significantly after heavy rains.[249] The 2016-2025 IDPs as well as a 2020 World Bank's survey of FSM's roads found varying conditions and threats, detailed in Table 6.[250]

Most residents of the main islands of FSM own vehicles, making roads a crucial infrastructure sector. In terms of road safety, FSM is one of the best performing countries in the East Asia and Pacific Region, with the WHO estimating only two road fatalities and 30 serious injuries in 2016. This result comes despite FSM having no road safety lead agency, national road safety strategy, or national road safety targets. There are no safety regulations restricting the import of new and used vehicles, no national seatbelt laws, and no blood alcohol concentration-based national drunk driving laws. Maximum speed limits for urban and rural roads are 40 km/hour (25 miles per hour), a speed that is low enough to be a significant contributor to the low rate of fatalities and serious injuries.[251]

Schools

A 2021 survey by the national Department of Education (DOE) showed a total of 24,486 students in the public education system (1,740 in Kosrae, 9,341 in Pohnpei, 10,566 in Chuuk, and 2,839 in Yap).[252] According to the DOE's 2020 annual statistical report, there were roughly the same number of boys and girls in schooling. The report revealed a continuing trend of declining numbers with sharper falls in Chuuk and Pohnpei;[253] in general, these declines are assessed as reflecting falling fertility rates and sustained emigration from the country.[254]

State	Unsealed	Sealed	Condition	Primary Climate Hazard
Pohnpei	0 km / miles	100 km / 62 miles (asphalt)	Roads are generally in good and fair condition, with a cautious estimate of approximately 15% of the road network in poor and very poor condition. The road cross-section is very flat, and side drainage is regularly missing or inadequate, leading to standing or running water on the road surface. Bridge maintenance can be lacking, leading to unsafe conditions, and weight limits or closures are possible.	Road surface and pavement damage from a lack of drainage.
Kosrae	0 km / miles	35 km / 21.7 miles (asphalt)	Roads are generally in fair to good condition. There is no evidence of side drainage, but roads tend to have cross-fall such that run off drains on both sides. The Lelu causeway was constructed 50 years ago; it is very narrow, low, and has insufficient drainage, and it suffers from erosion and scouring from tidal action. Bridges are generally in good condition.	The network is mostly very close to the shore and is low lying.
Chuuk (Weno Island)	5 km / 3.1 miles	10 km / 6.2 miles (asphalt), 5 km / 3.1 miles (concrete)	Concrete roads were recently built (between 2015 and 2017) and are in very good condition, while asphalt roads are relatively old and in generally very poor condition. Bridges are generally in good condition.	Coastal and rainfall related, depending on location.
Chuuk (outer islands)	-	-	There are basic roads on the Southern Namoneas and Faichuk Islands; infrastructure plans target these roads for reconstruction to sealed road standard; a pedestrian road is under development on Uman.	-
Yap	10 km / 6.2 miles	40 km / 24.9 miles (asphalt), 10 km / 6.2 miles (double seal)	Roads are generally in good condition in large part due to very good drainage. Three bridges may suffer lack of maintenance and could be in unsafe condition with weight limits or closures considered by the government.	Coastal and rainfall related, depending on location.

Table 6: FSM Primary Road Network Length and Condition

Officially, "school age" runs from 5 years of age when children can be enrolled in early childhood education through 18 years of age for completion of secondary (high) school. Primary school accommodates children 6-15 years of age or school years 1-8. As of 2020, net enrollment of all school age children stood at 77% of eligible children. Primary school enrollment rates tend to be the highest with 77% of eligible children enrolled whereas only 47% of eligible children enroll in early childhood education and 48% enroll in secondary school. Indeed, fewer than half of 17-year-olds and only about 20% of 18-year-olds were in school. Across all age groups, girls tend to have higher enrollment rates than boys, generally by 1-2 percentage points, but the difference is much larger in secondary school (53% of girls and 42% of boys) as the DOE reports that many more boys drop out of secondary education.[255]

The FSM national DOE sets standards, while state DOEs are responsible for curriculum and instruction. In addition to the public schools, there are many religious schools and several key private schools; among the latter are the Pohnpei Agricultural and Trade School (PATS) and the Jesuit-run Xavier High School in Chuuk. PATS offers technical and vocational programs in the construction and building trades, mechanics, agricultural science, and aquaculture for secondary school-age students.

The College of the Federated States of Micronesia (COM-FSM) is the major tertiary education provider. It has a national campus on Pohnpei and campuses in each of the other states. COM-FSM offers an associate degree and certificate-level programs in various subjects. It operates a Fisheries and Maritime Institute (FMI) in Yap. The FMI provides two-year, certificate-level vocational courses in navigation, marine engineering, and fishing technology. COM-FSM also offers a Bachelor of Arts in Elementary Education in conjunction with the University of Guam.[256] Grants and U.S. education programs are used to support many FSM students to attend COM-FSM, the University of Guam, and U.S. colleges and universities.[257]

The national IDP (2004-2023) earmarked US$135.4 million for education infrastructure spending across the 20 years of the plan. It is intended to address issues relating to poor maintenance – including failure of water and power supplies – within educational facilities. As of the writing of the plan, there were many schools in a highly deteriorated state, a shortage of supplies (e.g., furniture, equipment, books, and tools), and a lack of music rooms, auditoriums, and vocational training facilities across the educational system. Moreover, shortfalls in "soft" assets were noted; they included inadequately qualified teachers and inappropriate school curricula.[258]

The states' physical school presences are as follows:

- Kosrae has seven public schools: Kosrae High School and six elementary schools (Lelu, Malem, Sansrik, Tafunsak, Utwe, and Walung). All are located in coastal settlements.[259] Kosrae High School's building was completed in 2010; students can take either a vocational or academic track, taught by 45 faculty members.[260]
- Pohnpei has three public and four private secondary schools; the public schools include Pohnpei Island Central in Kolonia, Madolenihmw in Pohnlangas Madolenihmnw, and Nanpei in Kitti; three of the private high schools are in Kolonia.[261] There are 14 elementary schools (Awak, Enipein, ESDM, Kapinga, Kolonia, Lewetik, Lukop, Mand, Mwoakil, Nett, Ohmine, Palikir, Pehling, and Seinwar).[262]
- Chuuk has 79 public schools scattered throughout the islands and atolls. There are eight high and junior high schools (Chuuk, Faichuk, Moch, and Mortlock high schools; and Halls, Lukeisel, Nomusofo, and Pattiw junior high schools), 12 multi-grade schools, and 59 elementary schools. Among these are at least eight private or religious schools.[263] The Chuuk State Strategic Development Plan recognizes challenges confronting the state's schools; those challenges range from a high number of dropouts to shortfalls in teaching

to problems with physical facilities and the learning environment.[264]
- Yap State has 30 elementary schools and three secondary schools in addition to two private institutes as well as the COM-FSM FMI and the COM-FSM extension campus.[265]

Disaster Risk Reduction in the Education Sector

National DOE standards require that accredited schools must have a School Emergency Protection Plan. Beginning in 2012, USAID and IOM began coordinating training events for state and local officials and delivering disaster information and curriculum materials to schools to help them move toward developing and implementing those plans, including the regular conduct of drills.[266]

Since 2015, funded by USAID and the Australian government, IOM has been the main implementing partner of the Climate Adaptation, Disaster Risk Reduction, and Education (CADRE) Program, now the CADRE+ Program. The four main goals of the program are:
- Support sustainable adaptation and preparedness strategies, and increase the resilience to climate change and natural hazards of vulnerable schools and communities
- Empower schools and communities to independently cope with and respond to natural disasters, thereby filling a gap in the communication and education sectors by combining CCA and DRR
- Support national government efforts to implement national policies and strategies pertaining to adaptation and DRR; and
- Implement practices, which will assist in safeguarding the Millennium Development Goals in the context of climate change and the impacts to which it is linked.

The two main thrusts of the program involve: 1) capacity building among students, teachers, administrators, and the local community in terms of technical assessments of climate change impact and disaster risk on school grounds; and 2) the use of the resulting climate change impact assessments to inform planning and implementation of adaptation measures.[267] Additional opportunities provide workshops for Micronesian teachers and student-teachers preparing to migrate to other places for education, training, or work. Climate change and its local impacts, as well as disaster preparation and risk reduction at the local level were key topics, and CADRE provided curriculum guides and materials for use when trainees began teaching.[268]

More recently, the CADRE+ Program has focused on enhancing the resilience of vulnerable people to climate-induced natural hazards in schools and communities through communication and education activities.[269] Under CADRE+, IOM has targeted thousands of school-aged children, hundreds of teachers, and thousands of community members to establish community disaster preparedness and response committees, develop school emergency management plans, and train teachers in climate change and evacuation center management.[270]

In 2019, the CADRE+ team facilitated community disaster preparedness planning, DRR training workshops, and classroom instruction on CCA and DRR across FSM. Events included community disaster preparedness and management training in Yap, on the islands of Satawal, Lamotrek, and Elato. Community members participated in Hazard Vulnerability Capacity Mapping, coming together to discuss and document vulnerabilities and strategies for mitigating disaster impact, and they established Community Disaster Committees. Their work included general disaster management plans, School Emergency Management Plans, and hazard drill rehearsals.[271]

Communications

The communication system relies mainly on satellite technology. The government-owned FSM Telecommunications Corporation (FSMTC) is the only provider of all telephone, TV, and internet services.

Telephones
Fixed lines: 7,000 (2020)
Mobile subscriptions: 22,000 (2020)

FSM's telecommunications system has seen rising demand for mobile broadband as mobile services are the primary and most wide-spread source for Internet access across the region.

Within FSM, the islands are interconnected by shortwave radiotelephone, satellite (Intelsat) ground stations, and some coaxial and fiber-optic cable. Mobile-cellular service is available on the major islands. Despite growing demand due, in part, to more people moving to main islands and, therefore, having access to the network, fixed line teledensity remains low at approximately 6 per 100 people and mobile-cellular at 21 per 100 people. The Chuuk-Pohnpei Cable and HANTRU-1 submarine cable system provide key links both within FSM and between FSM and the U.S.[272]

FSMTCeLL is the mobile wireless network with coverage on the four main islands, and FSMTC plans to expand the network to some smaller islands.[273] The network includes several generations of technology with 2G still the most common at some 54% of customers while 46% have access to 3G or more modern technology. Android handsets are significantly more common than Apple devices (70% versus 27%).[274] Current coverage maps indicate that settlements along the main ring roads have fair to good service although there remain spots of almost no coverage. FSMTCeLL has both pre- and post-paid services. All outgoing calls are US$0.15 per minute with no charge for incoming calls, and FSMTCeLL customers pay US$0.10 to send a text message with no charge for incoming texts.[275]

Internet Access
Internet users: 56,193 (July 2022)[276]
Fixed broadband subscriptions: 6,000 (2020)[277]

FSMTC currently provides internet access to Pohnpei, Kosrae, Chuuk, and Yap.[278] Of internet users, more than 37% access the web using a mobile device while more than 57% use a laptop or desktop computer. There are an estimated 46,700 social media users with Facebook far and away the most commonly used at more than 80% of the country's internet users. No other social media platform sees activity from more than 10% of FSM internet users.[279]

In 2020, the World Bank announced a US$30.8 million grant to improve internet availability in FSM. The Digital Federated States of Micronesia project is supporting the rollout of terrestrial fiber infrastructure, connections of outer islands to basic broadband services, establishment of critical foundations for digital government services, and strengthening the legal and regulatory enabling environment for the digital economy. Among the targets for completion in 2026, the Digital FSM project seeks to boost outer island internet access to 50% of the residents of those islands; a 2022 mid-term assessment found that 5% had gained access since the project began in 2020. At the same 2022 assessment, project auditors found that the actual numbers of internet users throughout the country had exceeded the 2026 target by 1,500 people although no progress had been made in ensuring women gain internet access.[280]

Mass Media
With FSMTC dominating the television (Internet Protocol (IP) and cable) market, the Communications Division of the national Department of Transportation, Communications, and Infrastructure is mostly tasked with regulating the radio frequency spectrum. However, it does have a role setting out cyber-security and information and communications technology policies that are focused on overall economic development.[281] Beyond those powers, most responsibility for media regulation devolves to the states.

Print media has always had a minimal share of the media market as the production and distribution of any titles was hampered by the small audience and lack of printing facilities within the islands. Thus, any weekly, bi-weekly, or monthly newsletters or magazines were expensive and could not compete with other

information sources. With the extension of internet, this may allow some legacy publications – like Kasalehlie Press – to retain some market share as they no longer need to have their editions printed outside the country and then flown in before distribution from the central hub.

Radio long dominated both mass information and entertainment as communities ran their own stations with limited reach. However, in the past two decades foreign video productions have gained popularity, thereby reducing the reach of community stories and reducing familiarity with local information sources. For this reason, in the past decade, local government, community, and church groups have increased their own video production capacity and, with expanding internet availability, they can begin to compete with foreign video or multi-media programming. Each state does continue to operate its own AM radio station with reach throughout their respective island.[282] Pohnpei's V6AH also has pickup on FSMTC's IPTV slate.[283]

The news media operate freely. Print outlets include government-published newsletters and several small, privately owned weekly and monthly newspapers. There are several radio stations. Cable television is available, and satellite television is increasingly common. Lack of resources is a problem for broadcasting, limiting the reach of key weather or other hazard-related information.[284]

FSMTC's IPTV offerings are available on all four main islands and require a 10 megabit per second (Mbps) connection. The My/Pasifika TV package includes local news/information stations as well as all of the major U.S. networks and news and sports channels as well as 24-hour news stations from France, Japan, South Korea, Turkey, and the United Kingdom.[285]

Post

A government agency, FSM Postal Service oversees operations and services with a Postmaster in each state under the national Postmaster General. There are three locations in Pohnpei (Kolonia, Palikir, and the airport) and one location on each of the other main islands.[286]

Utilities

Each state has its own state-owned and -run public utility commission that has responsibility for electric power and water and sanitation for those areas connected to a public system. Water catchment and self-sustaining septic tanks are the most common water and sanitation arrangements, and in many places, piped water is not potable. While electric power access has expanded, particularly on main islands, costs are high and use of diesel for generation is common. Nonetheless, a 2019 IMF survey found that FSM's emissions from the use of diesel in electricity generation fell by one-third between 2000 and 2018 as use of renewables increased from 4.3% in 2009 to 19% in 2019. Solar accounts for nearly all renewable electricity; Pohnpei does have a hydropower facility while Yap has a wind farm.[287]

Power

A 2016 survey found that electricity is available in 75% of households nationally. Electricity costs are high at US$0.39 per kilowatt-hour (kWh) compared to the rate in the U.S. (US$0.13/kWh).[288] A key challenge for the entirety of FSM is that typhoons and other storms bring saltwater inundation that corrodes electricity infrastructure.[289]

The Vital Group (sometimes called Vital or FSM PetroCorp) is a state-owned corporation made up of Vital FSM Petroleum Corporation, which operates in all four states, and Vital Energy, Inc. which has operations out of Nauru and Guam. Vital is the largest supplier of energy products and services in FSM, where it owns, operates, and leases assets that allow it to deliver energy resources.[290] Gasoline and diesel are delivered by Vital to the bulk shipping terminals on each main island.[291] The company is also involved in some electricity generation. It has a 1.065-MW continuous power diesel plant at Nanpohnmal in Pohnpei; the plant consists of 4×355 kilowatt (kW) engines connecting directly to the Pohnpei Utilities Corporation (PUC), but the plant is used only during peak periods to provide the utility additional power on demand. Meanwhile, Vital is rolling out more renewable

generation solutions throughout FSM.[292] As part of its ten-year strategic plan (2015-2025), the company is exploring ways to broaden its energy mix by investing in renewable energy development, including solar and, potentially, coconut biofuel.[293]

According to the FSM Nation Energy Plan, Chuuk has the lowest coverage of energy services among all four states, mainly because of Chuuk's unique geography. Unlike the other states that are characterized by a bigger center island and much smaller outer islands, Chuuk has a center island and many similar islands scattered in the lagoon and smaller ones outside the lagoon.[294] The Chuuk Public Utilities Corporation (CPUC) is a government-owned corporation that provides power. CPUC's commercial operations are restricted to Weno Island although the 2016-2025 IDP included an expansion of CPUC electricity coverage to Tonoas after a private generating facility there becomes operational. At that point, CPUC will purchase the power and be responsible for distribution and operations and maintenance of the network. Elsewhere, CPUC undertakes operations and maintenance for electric power facilities through service agreements, principally with Chuuk's Education and Health Departments.

Chuuk has a program to increase the proportion of electric power sourced from renewable sources as well as undertaking energy efficiency programs to reduce reliance on imported fuel oils for electric power generation. During the period covered by the current IDP (2016-2025), Chuuk and national authorities seek to bring Chuuk's use of renewable energy sources to 30% of total production and to boost electric power efficiency by 50%.[295] Such modernization is a long-term challenge given that as recently as a 2012 survey, it was found that the power generation system on Weno was on the verge of collapse. Rolling blackouts on half of the island were daily occurrences in addition to island-wide blackouts when CPUC did not have funds to purchase diesel fuel to operate the generators.[296]

Kosrae has its own state-owned power utility authority, the Kosrae Utility Authority (KUA). Kosrae has the highest rate of access to electricity in FSM, at 98% coverage. As noted in a 2013 report on renewable energy opportunities, 8% of households rely on wood for cooking, the lowest of all of FSM's states. Renewable energy options do exist, especially solar;[297] in its 2016-2025 IDP, the state government continued to develop its programs to increase the proportion of electric power from renewable sources.[298] KUA primarily uses diesel generators for power generation. Six diesel generators are located at the Tofol power plant, on the island's northeast, to meet electric power demand.[299]

The Pohnpei Utilities Corporation (PUC) is a unit of the state government and has responsibility for providing electrical power for Pohnpei.[300] Access to electricity is limited, with not all people on Pohnpei's main island having household electricity. On outlying islands, the primary energy source is biomass, with wood and coconut husks used for cooking. Kerosene is also used for lighting; however, high costs (which can be double the cost on the main island) and low household incomes mean that its use is limited. The state is reliant primarily on imported diesel for electricity generation; this diesel is mixed with locally produced coconut oil at approximately a 9:1 ratio. The Nanpil Hydropower station was originally built in 1986 and operated until 2003 when major repairs were needed. The European Union funded rehabilitation that allowed the plant to resume operations, and its capacity represents 11% of peak demand. Gas also forms an important source of energy, with liquified petroleum gas bottles primarily used in restaurants in towns.[301] In its IDP (2016-2025), Pohnpei targets a renewable generating capacity of 20 MW, evenly split between solar and hydro; if met, this capacity would double 2016 total generating capacity in the state. The IDP identified a solar farm site with land in government ownership as a key asset.[302]

Electric power in Yap is provided by Yap State Public Service Corporation (YSPSC) with a focus on the main island group although support is also provided to outer island electric power facilities.[303] Yap is highly dependent on imported diesel. Half of the imported fuel is used for power

generation. Approximately 50% of the population has access to the electricity supply. Yap State has had village electrification projects using solar power, including a project for 50 homes on Satawal and two solar micro-grids in Fadarai and Assor in Ulithi Atoll in 2006. Some private solar installations exist. Two major solar projects were planned for Yap in 2013 – including the European Union Energy Facility, which planned to electrify 10 outlying islands with solar home systems, and the North-Renewable Energy Project to provide micro-grid solar photovoltaic systems for Mogmog, Falalop, Fais, Woleai, and Satawal. It is anticipated that once all these installations are completed, Yap State will have close to 100% access to electricity.[304]

For the electricity sector, FSM has a detailed an ambitious plan to meet its renewable energy target, but progress towards energy efficiency objectives has been limited. The main goals of the 2012 national energy policy were to increase the share of renewable energy to at least 30% of total energy production by 2020, and to increase electricity efficiency by 50%.[305] Although measures of energy usage differ widely, one international survey found that, as of 2019, only 2% of total energy supply was delivered by renewable sources, mainly bioenergy with some solar and hydro or marine, as shown in Figure 9.[306]

At the same time, between 2015 and 2020, the share of renewables in electricity generation rose only marginally to 7% of the total with 4 Gigawatt-hours (GWh) delivered by solar (3 GWh) and hydro or marine (1 GWh).[307]

The energy master plan focuses on electricity and outlines priority projects for increasing renewable energy generation. The policy actions designed to achieve the electricity efficiency targets include public awareness campaigns by utilities and state and national governments, a pilot project to procure energy-efficient air conditioning units for government buildings, and a small program of loan subsidies to encourage energy efficient home design.[308] The European Union's European Development Fund has been a key partner in expanding renewables access and integration. It has provided funding for

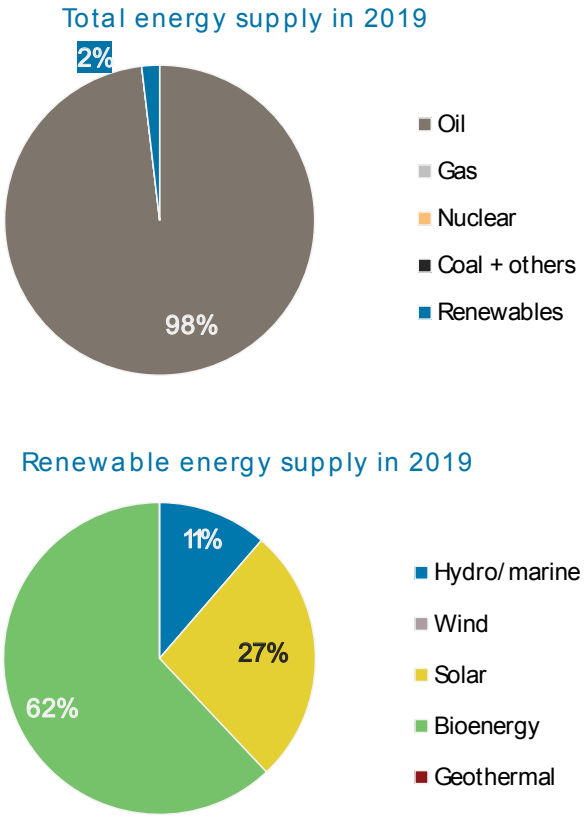


Figure 9: FSM's Total Energy Supply (2019)

solar power in Chuuk, Kosrae, and Yap, and for refurbishing the hydropower station on Pohnpei. More recently, it is programming village access to solar-generated electricity for Chuuk, solar and transmission line upgrades for Pohnpei, sizing transformers on Kosrae, and improving electricity access for outer islands of Yap.[309]

Water and Sanitation

The primary sources of freshwater in most states are underground, surface water, and rainwater. Average rainfall is 4,928 mm (194 inches) per year. Surface water accounts for 60% of exploited water resources and groundwater accounts for 40%. The small, low-lying islands in each state are fully dependent on rainwater and shallow wells. The adverse impacts of climate change, especially salinization and saltwater intrusion due to rising sea levels, increased flooding, and droughts are threatening the availability and quality of fresh water across FSM.[310]

The traditional culture and lives of the island communities in FSM are centered around

freshwater, and the fragile system is being seriously threatened by pollution and overuse. Traditional knowledge of the system is vital for understanding the limits of the system, but often this local and traditional knowledge is either sidelined or lost when elders and practitioners die or depart without passing on their knowledge. Protection of the watersheds has become a major priority issue that has not yet been addressed through a management plan.[311]

Chuuk reports that just over 18% of its population does not access adequate drinking water and some 43.5% do not access adequate toilet facilities. The Weno central water system, supplied by the Pou River, is the major water system in the state and provides piped water to 10,000 persons and most of the state's commercial and tourism enterprises. Most areas on Weno have access to a continuous supply. The exception is the sparsely populated southern side of the island.[312] Water supply services on Weno are provided by CPUC. In almost all cases the water in Chuuk is undrinkable. The urban areas on Weno are also connected to a sewer system run by CPUC. Outside urban centers, the population relies on water catchment or wells and different forms of septic tank systems. Standard water and dry composting toilets are used, particularly in remote villages and outer islands.[313]

Water and wastewater systems on Kosrae are the responsibility of the State Department of Transportation and Infrastructure, but part of KUA's mandate is to deliver water and wastewater utility services on a self-funding basis.[314] Rainfall in Kosrae usually occurs in short, heavy downpours. It is collected in catchments as a primary source of water for drinking, cooking, and daily living. Around three-quarters of Kosrae households use water catchment tanks or drums as their primary water source. Around 99% use the public water system for non-potable uses such as laundry, washing, crops, and animal feeding since the public water system is not fit for drinking. Threats to Kosrae's water resources include climate change, deforestation of the watersheds, and sanitary controls on the watershed activities related to human and animal interference. Most households (93%) have flush toilets and private septic tanks.[315] The single wastewater scheme is limited but includes key government facilities, including the hospital, and covers the populations in Tofol and Lelu. The scheme incorporates settling ponds, and the resulting effluent discharges directly to the sea with several components requiring rehabilitation.[316]

On Pohnpei Island, the main source of water is the Napil River. The PUC provides water to 53% of the main island's population. Across the state, according to a 2010 census, 8.8% of households lacked access to improved drinking water, while 38.1% lacked access to improved toilet facilities.[317] Over the last few years, the potable water system has been extended to include all of Kolonia and most areas within the other main island municipalities. Water supply is achieved by river diversion and multiple wells. Wastewater management, collection, and treatment are limited to the population center of Kolonia and the surrounding areas.[318] Projects included in the Pohnpei IDP are divided between improving the existing systems and extending water and wastewater systems. Extension projects aim to build up the "ring system" around Pohnpei Island and extend the wastewater system to Sokehs Island communities, but the latter project will also involve rehabilitation of the wastewater system to reduce the amount of storm water intrusion.[319]

Reliable treated and filtered potable water is accessible to most people in Yap. The YSPSC Water System, the Gagil/Tomil Water Authority, and Southern Yap Water Authority maintain these water systems. There are four water tanks and catchments on the main islands, and there is one dam with an associated reservoir.[320] About 75% of the population of Yap Island has piped water. Potable water is available in the main islands, except for Maap and Rumung.[321] Still, approximately 86% of Yap State residents do not have plumbing, and the most common source of drinking water is water catchment tanks or drums, as well as public and community water systems. Sewerage connections are not common for households.[322]

HEALTH

FSM has made significant strides with some health indicators, including increasing life expectancy and reducing child mortality. Women's life expectancy increased from 65.5 to 69.6 years between 1990 and 2017, while men's life expectancy increased from 61.7 to 65 years over the same period. The mortality rate for children under 5 years of age decreased from 40.3 to 13.9 deaths per 1,000 live births between 1990 and 2019, while the mortality rate for children under age 1 decreased from 29.6 to 10.5 deaths over the same period.

Noncommunicable diseases (NCD) are major health problems, in particular diabetes, cardiovascular diseases, and cancers. The prevalence of NCDs is exacerbated by the high consumption of imported packaged food, lack of physical activity, and use of tobacco products. In the past four decades, local foods have increasingly been replaced by imported foods, such as white rice, flour, sugar, refined foods, and fatty meats, much of which has historically been linked to U.S. Department of Agriculture (USDA) programs using USDA surplus commodities.

Intentional (violence) injury and suicide are key issues, whose contributing factors are likely to be the burden of cultural and economic dislocation, particularly among young adult males. Alcohol use often leads to violent incidents. Tuberculosis (TB) has a high prevalence, as does leprosy, the incidence of which is among the highest in the Pacific.

Health Care System Structure

The health care system is overseen by the Department of Health and Social Affairs. The Division of Health is comprised of the sections of Behavioral Health and Wellness, Communicable and Infectious Disease, Environmental Health and Food Safety, Family Health Services, Immunization and Vaccine Preventable, and Noncommunicable Disease. Various health programs include communicable diseases, chronic related diseases, child and women's health, immunization for children, substance use prevention and treatment services, psychological assessment and treatment, food safety and environmental health, and hospital and public health preparedness.

Each of FSM's four states – Chuuk, Kosrae, Pohnpei, and Yap – have an autonomous state system. The Department of Health Services in each state provides medical and public health services through a hospital, community health centers, and dispensaries. Health services are highly subsidized by the state governments, except for private health facilities. There are six private clinics and one private hospital in the country. Inter-island transportation challenges often prevent residents of less populated islands from accessing hospital services. If health issues cannot be addressed at the community-level dispensaries or state-level hospitals, referral to hospitals outside of the country is also an option.

Health Strategies and Surveillance

FSM participates in the Pacific Islands Health Officers Association (PIHOA), established in 1986 by the health officials of the six U.S.-Affiliated Pacific Islands (USAPI) – the U.S. territories of American Samoa and Guam, the Commonwealth of the Northern Mariana Islands (CNMI), and the three Compact states (FSM, Republic of the Marshall Islands, and Palau). PIHOA was founded as a regional, collective voice for advocacy and policymaking to address common health concerns.[323] Its current regional priorities are health information management systems and surveillance, human resources for health, performance management and quality improvement, laboratory strengthening, Pacific basin primary care office, regional policy and engagement, health leadership, health

advocacy, and health security – preparedness and response.[324]

The WHO works with FSM in accordance with their country cooperation strategy to pursue the following national strategic priorities:

1. To achieve universal health coverage antimicrobial resistance by building resilient and sustainable health systems to enhance the availability of needs-based health services in the country
   - 1.1 Define an essential package of quality health services and role delineation based on lessons gleaned from demonstration programs in all states, including integrated outreach services.
   - 1.2 Implement an antimicrobial resistance strategy and action plan.
   - 1.3 Develop a health workforce that is critical to the needs of the country.
   - 1.4 Strengthen a supportive and sustainable social and physical environment to improve health through legislative approaches.
   - 1.5 Strengthen the national health accounts system through regular updates.

2. To build International Health Regulations (2005) core capacities for proactive preparedness in health emergencies and natural disasters
   - 2.1 Establish a risk communication system with the capacity to manage public, internal, and partner communication for all phases of public health emergencies.
   - 2.2 Set up a multisectoral approach to respond to events that may constitute public health emergencies.
   - 2.3 Put indicator- and event-based surveillance system(s) in place to detect public health threats with systematic data analysis, risk assessment, and reporting.
   - 2.4 Put in place a national laboratory system capable of conducting 3–4 core tests, along with a system to transport specimens to international reference laboratories for timely diagnosis and quality assurance.

3. To build capacity for NCD prevention and control
   - 3.1 Set up a high-level forum, such as a national NCD coordination mechanism, and organize an annual NCD summit.
   - 3.2 Scale up Package of Essential Noncommunicable (PEN) disease interventions in the dispensaries, health centers, and hospital in all states.
   - 3.3 Establish partnerships between community and primary health care services for community-based rehabilitation, and build the assistive technology capacity of health facilities.
   - 3.4 Conduct NCD surveillance activities.
   - 3.5 Draft legislation to restrict the use of high-sodium foods, institute comprehensive nutrition facts labeling, and pass state-level regulation to set up a traffic light system in stores to help consumers identify healthy foods.
   - 3.6 Implement the WHO Framework Convention on Tobacco Control through several key aspects of tobacco control including graphic health warnings, tackling tobacco industry interference, reducing second-hand smoke, and promoting smoking cessation.

4. To control communicable diseases
   - 4.1 Follow the technical process to achieve and maintain the target of lymphatic filariasis elimination by 2022.
   - 4.2 Intensify TB and leprosy screening in Chuuk State.
   - 4.3 Strengthen vector control and ensure reduction of dengue cases and fatalities.
   - 4.4 Strengthen the immunization program to increase vaccination coverage to meet the national targets.[325]

Communicable Diseases

FSM has experienced occasional outbreaks of diseases spread by Aedes aegypti or Aedes albopictus mosquitoes; these include dengue, chikungunya, and Zika. However, the country does not have a high risk of malaria, which is

spread by the Aedes anopheles mosquito. There are no known malaria areas, per the U.S. CDC as of November 2021.

FSM has a risk of waterborne and foodborne diseases, including bacterial diarrhea. Among vaccine-preventable communicable diseases, Typhoid and Hepatitis A occur the most frequently. The hepatitis A virus (HAV) is a common infectious etiology of acute hepatitis worldwide. HAV is most commonly transmitted through the fecal-oral route via exposure to contaminated food, water, or close physical contact with an infectious person.

FSM has had great success in reducing transmission of Hepatitis B. The nation reduced the prevalence of Hepatitis B among children to less than 1% in 2018, joining 18 other countries and areas in the Western Pacific that had been verified by an independent panel as having met that goal. Hepatitis B is a virus that spreads through bodily fluids, attacks the liver, and is often transmitted during pregnancy or childbirth. As Hepatitis B had historically been endemic and primarily affected young children, the achievement was a significant public health victory. FSM added Hepatitis B to the national immunization program in 1988.

Additional information on some communicable diseases that FSM experiences is as follows:

Dengue

There have been sporadic outbreaks of dengue over the years in various parts of FSM. In 2019, a type-3 dengue fever outbreak affected the state of Yap. Between 1 January and 9 October 2019, a total of 826 cases were reported. Dengue is a flu-like illness spread by mosquito bites, with symptoms beginning 3-14 days after infection and that may include high fever, headache, vomiting, muscle and joint pains, and/or a skin rash inclusive of red spots.

HIV/AIDS

There is an inconsistent amount of data regarding incidence rates in FSM of the human immunodeficiency virus (HIV), which can lead to acquired immunodeficiency syndrome (AIDS). According to the Global Health Data Exchange, HIV had become the 5th most common cause of death in FSM in 2019 after having been the 14th most common cause of death in 2009, a 206% increase in recorded infection rates. HIV was similarly the 4th leading cause of death and disability combined for FSM in 2019. However, recent data about HIV rates in FSM are not available from WHO or UNAIDS, or readily accessible from open FSM sources. HIV targets the immune system and weakens people's defenses against many infections and some types of cancer that people with healthy immune systems can more easily fight off. As the virus destroys and impairs the function of immune cells, infected individuals gradually become immunodeficient. Immune function is typically measured by CD4 cell count. There is no cure for HIV infection, but it has become a manageable chronic health condition.

Tuberculosis

The incidence of TB for FSM was 75 cases per 100,000 people in 2020. While TB rates have fluctuated in recent years, it has tended to decrease over the past two decades. TB is caused by Mycobacterium tuberculosis. People with TB can spread it in the air by coughing, speaking, or singing, with others becoming infected when they breathe TB bacteria into their lungs. Not everyone infected with TB bacteria becomes sick or has symptoms, and this experience is known as latent TB infection. While people with latent TB infection cannot spread it to others, they can become sick years later if their immune systems weaken. A cluster of multi-drug resistant TB was of concern during 2008-2012 in Chuuk State, but it was controlled after a concerted effort by the government and multiple agencies.

Zika

FSM has reported Zika cases in the past, but there were no current infections as of September 2022. Many people infected with the virus do not get sick or only have mild symptoms. However, infection during pregnancy can cause severe birth defects.

Coronavirus Disease 2019 (COVID-19)

While the virus that causes COVID-19 was first identified in Wuhan, China, in December 2019, it did not reach FSM until 8 January 2021 with an imported case linked to a cargo ship.[326] This experience was largely due to FSM recognizing their vulnerability with a health infrastructure that could be overwhelmed by the pandemic. Authorities, thus, early on instituted the world's strictest travel bans prohibiting all arrivals from countries with confirmed cases.[327] By August 2020, FSM undertook a whole-of-government response to keep the country COVID-free as long as possible and mitigate effects upon eventual arrival. This included President Panuelo designating a National Taskforce – consisting of representatives from different government agencies, the local community, business community, and partners – to oversee the implementation and coordination of the response plan. As outlined in the implementation of the FSM COVID-19 Framework, the government conducted active screening of passengers at ports of entry, health education and risk communication through radio, social media, and print messaging, and procuring supplies.[328] FSM received financial and technical support in its efforts against COVID-19 from multilateral organizations including WHO, UNICEF, UNDP, the UN Population Fund, SPC, IOM, MRCS, World Bank, Asian Development Bank, and PIHOA. FSM also received bilateral aid via government embassies resident in Pohnpei, the Pohnpei Japanese Organization, Luen Thai Fishing Ventures, Kyowa Shipping Lines, and numerous national and local civil society organizations.

The first COVID-19 case recorded in FSM was confirmed in January 2021. It occurred on a cargo ship and was successfully contained. However, COVID-19 entered the country the following year, in July 2022, and began spreading locally. As of 22 September 2022, there had been 10,057 confirmed cases of COVID-19 in FSM, with 31 deaths reported to WHO. As of 20 August 2022, a total of 170,346 vaccine doses had been administered.[329] FSM's efforts in keeping COVID-19 out until vaccines were widely available likely played a role in reducing fatality rates. FSM has a COVID-19 case fatality rate (the ratio between confirmed deaths and confirmed cases) of 0.30%, versus the world average case fatality rate of 1.07%.[330] Figure 10 shows daily new confirmed COVID-19 cases in FSM from 26 January 2021 to 26 October 2022, highlighting how long FSM was able to delay local spread of COVID-19 (approximately 8 months).[331]

As of 1 August 2022, FSM borders are officially open. Pohnpei and Kosrae are allowing unfettered entry and exit. Chuuk and Yap continue to restrict inbound passengers and impose quarantine restrictions. Entry to Yap and Chuuk will continue to be controlled by the FSM Consulate in Guam in coordination with United Airlines and subject to proof of vaccination with a WHO-approved vaccine and a post-flight quarantine in FSM.[332]

Noncommunicable Diseases

NCDs comprise a large proportion of the health challenges in FSM. NCDs accounted for the four leading causes of death in the country in 2019 – ischemic heart disease, diabetes, stroke, and chronic kidney diseases. Chronic obstructive pulmonary disease (COPD) and hypertensive heart disease were the seventh and eighth leading causes of death, respectively. NCDs comprised six out of the ten leading causes of death in FSM in 2019, as depicted in Figure 11.[333]

PIHOA declared a state of NCD emergency for the Pacific region in 2010. Following the PIHOA Declaration, the four states of FSM also declared a state of NCD emergency.

In accordance with the National Strategic Plan of Action for the Prevention and Control of NCDs (2019-2024), FSM's goals are aimed at three areas: 1) Primary Prevention: decrease the number of people with NCDs by reducing the NCD risk factors; 2) Secondary Prevention: decrease the impact of NCDs through improved "Primary Care Services and Hospital Care

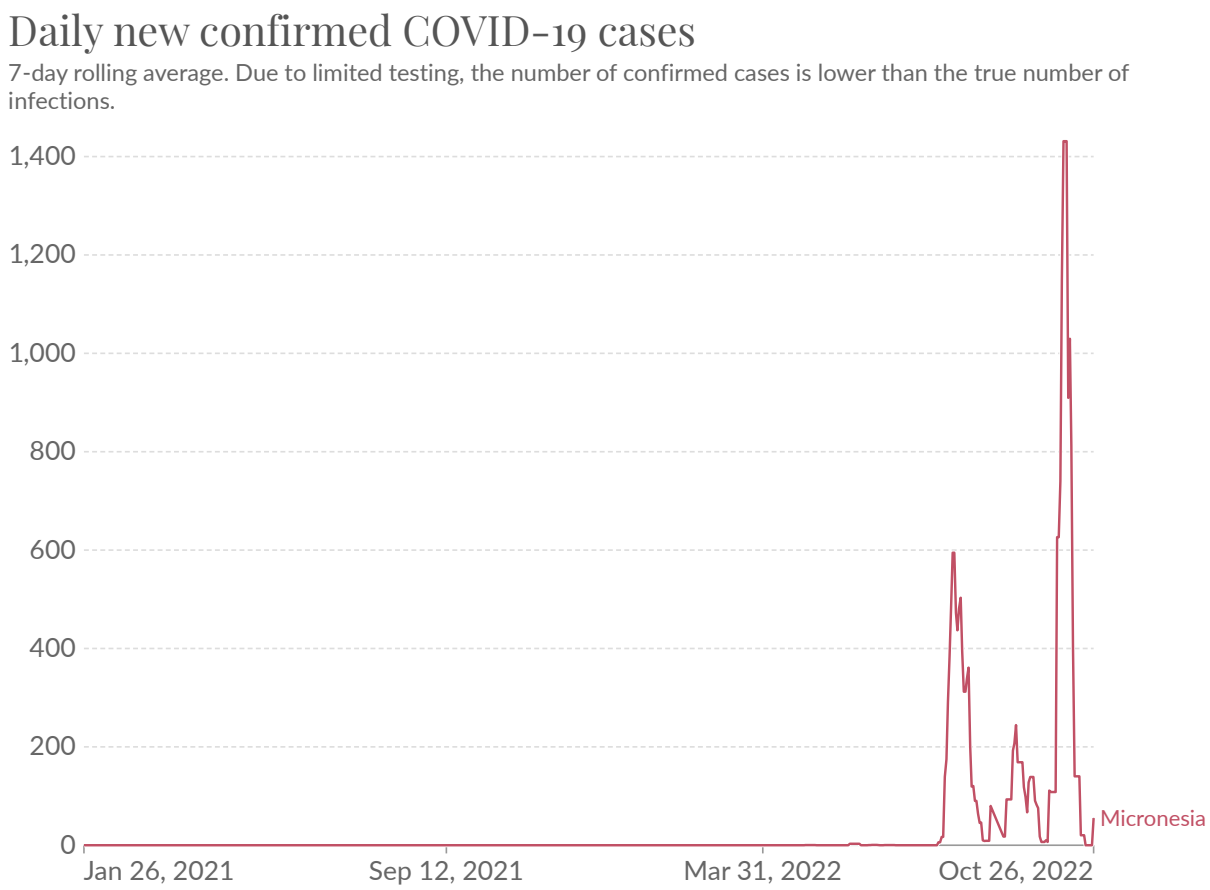
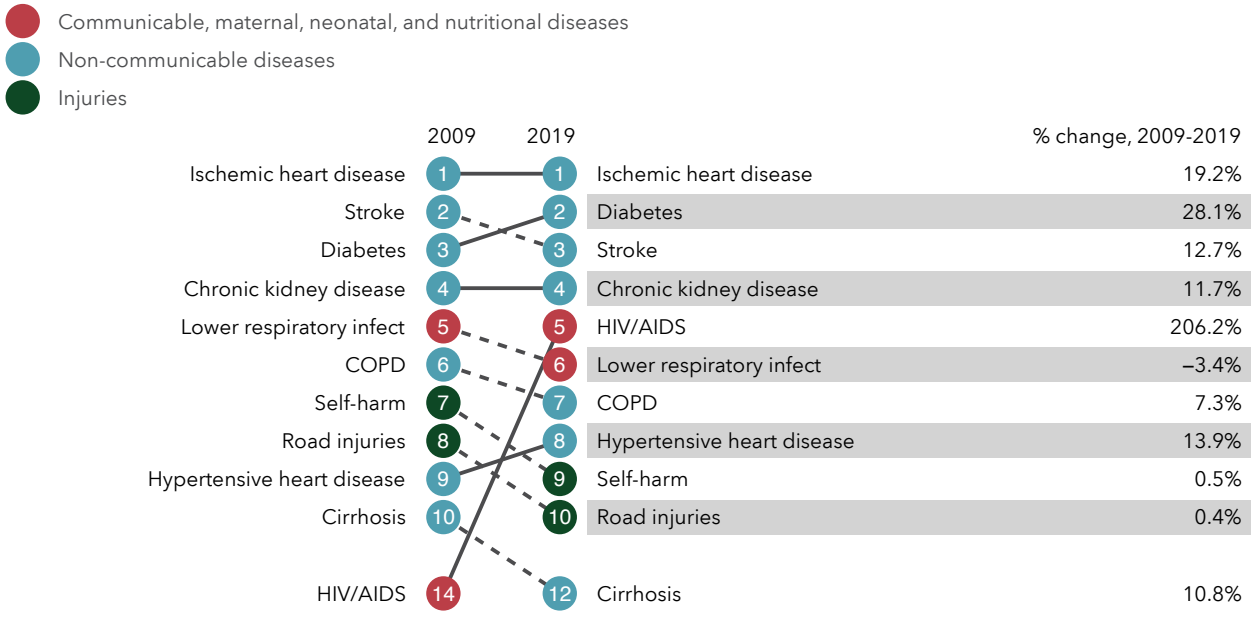


Figure 10: Daily New Confirmed COVID-19 Cases in FSM through 26 October 2022

What causes the most deaths?



Top 10 causes of total number of deaths in 2019 and percent change 2009–2019, all ages combined

Figure 11: FSM Top 10 Causes of Death in 2019 and Percent Change (2009-2019)

Services" by reducing and delaying NCD complications; and 3) Tertiary Prevention: decrease the impact of NCDs by improving "Survivorship Support Services." The plan's five strategic action areas are:

1. Environmental Intervention – through policy and regulatory interventions
2. Community Intervention – population based at the level of common risk factors
3. Clinical Intervention – at the level of early and established diseases
4. Advocacy – providing strategic action in social mobilization, public education and outreach programs, risk communication, and advocacy for policy change relevant to NCDs
5. Surveillance, Monitoring, and Evaluation
    a. Risk factors in adults in the WHO's STEPwise approach to NCD risk factor surveillance (STEPS) survey or U.S. Behavioral Risk Factor Surveillance System (BRFSS) survey
    b. Risk factors in youth (school-based surveys)
    c. Disease burden (cancer registry, diabetes from vital statistics, hospitalization from hospital databases, etc.)
    d. Quality of primary, hospital, and end of life care[334]

Training for Health Professionals

New Tokyo Medical College (NTMC) was the first fully approved medical school established in the Northern Pacific Ocean Area. The professional medical school is located in Kolonia, Pohnpei State. NTMC obtained approval for its establishment from the state government in June 2009. The school is recognized by the Foundation for Advancement of International Education and Research and the Educational Commission for Foreign Medical Graduates and is listed on the International Medical Education Directory and WHO's World Directory of Medical Schools. NTMC offers both 6-year and 4-year Doctor of Medicine (MD) programs for highly qualified students from FSM and the region. Faculty members hail from the U.S., the Philippines, and South Korea. The first cohort of approximately 60 students were scheduled to graduate in 2018 and begin serving upon completing their residency training as early as 2020.[335]

The College of Micronesia-FSM has a Public Health Training Program, offering an Advanced Certificate in Public Health, an Associate of Science Degree in Public Health, and an Associate of Science Degree in Nursing. The college works with the University of Guam's School of Health program, Micronesian Area Health Education Center, to organize training for health profession students to serve in underserved communities.[336] The college also works with the University of Hawaii John A. Burns School of Medicine's Area Health Education Center to offer a pre-medical and pre-dental Health Careers Opportunities Program.[337]

The Pacific Open Learning Health Net (POLHN) focuses on distance education for health professionals working in the Pacific, serving as an initiative to meet some logistical challenges faced by populated islands scattered across thousands of miles of ocean. POLHN was established in 2003 as a joint initiative between WHO, the Government of Japan, and Pacific Ministers of Health. POLHN uses a free and open-source software learning management system akin to a massive open online course platform to train more than 67,000 students.[338] Its digital curricula encompass medicine, nursing, health education, and public health.

WOMEN, PEACE, AND SECURITY

The Women, Peace, and Security (WPS) agenda refers to a strategy to increase women's participation in the maintenance and promotion of peace and security in their countries and communities through activities including conflict prevention and resolution, peace negotiation, peacebuilding, peacekeeping, humanitarian response, relief aid, and economic recovery and development. The WPS agenda is credited as originating with United Nations Security Council Resolution (UNSCR) 1325, adopted in October 2000 and affirming the important role women play in the many aspects of promoting and maintaining peace and security. In the two decades since, the WPS agenda has expanded with the Security Council's adoption of additional resolutions addressing the intersecting issues of gender and security, including the need to stop disproportional gender-based violence and to promote women's roles in conflict resolution, recovery, and peacebuilding. The UNSCRs that comprise the WPS agenda include 1325 (2000); 1820 (2009); 1888 (2009); 1889 (2010); 1960 (2011); 2106 (2013); 2122 (2013); 2242 (2015), 2467 (2019), and 2493 (2019). The WPS agenda has broadened to include applying a gendered perspective to disaster management and humanitarian aid for more equitable participation, which will not only address humanitarian needs but also benefit society as a whole. As of August 2022, 103 countries have adopted National Action Plans on WPS, but FSM is not among them.[339] FSM is not included in the rankings of either the Women, Peace, and Security Index or the Global Gender Gap Report. However, data on select gender-related indicators are available from other sources.

The World Bank's Women, Business, and the Law Index covers 190 economies and is structured around the life cycle of a working woman. Overall scores are averaged across 35 questions spanning eight indicators, with 100 representing the highest possible score. FSM's overall score for 2022 was 61.3, with the country achieving perfect scores for lack of legal constraints on freedom of movement or marriage alongside low scores for laws affecting women's work after having children, particularly paid parental leave.[340] Figure 12 shows the World Bank Women, Business, and the Law score snapshot for FSM for 2022. It reflects answers to questions such as "Can a woman apply for a passport in the same way as a man?" and "Is dismissal of pregnant workers prohibited?" The answers to these questions - yes and no, respectively - feed into the total scores available

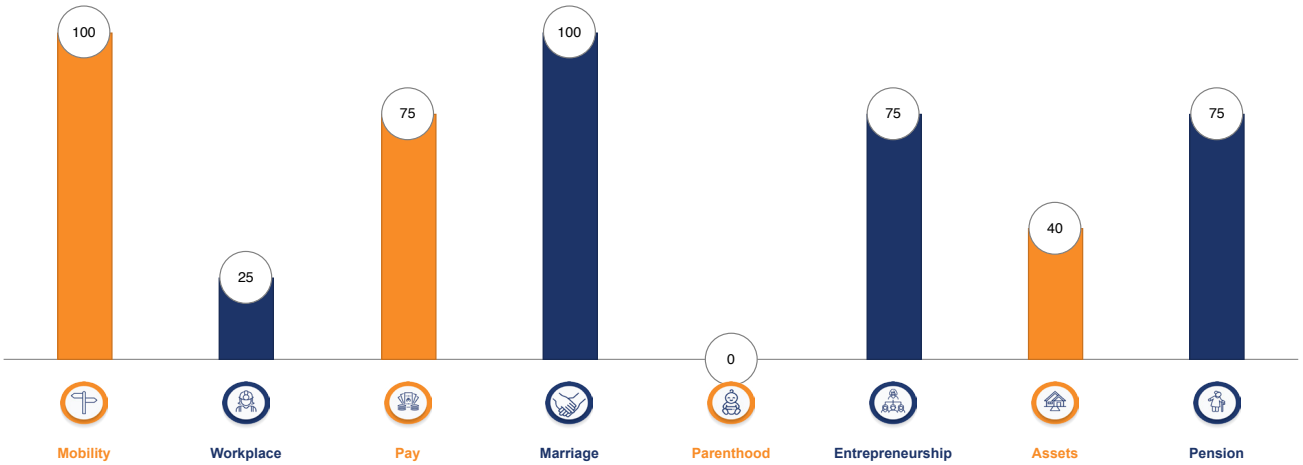


Figure 12: FSM Nets Mixed Scores from World Bank for Laws Regarding Women's Equality

in the snapshot. FSM scores a perfect 100 for a lack of constraints on freedom of movement and marriage. However, current FSM laws do not protect women in the workplace or address gender differences in property and inheritance; thus, the country nets lower scores (i.e., 25 in workplace and 40 in assets).[341] While the scores are categorized as for the whole country, the World Bank data refer to the laws and regulations that are applicable to the main business city area of Palikir and Kolonia on Pohnpei Island.

Micronesia had 108 male births to 100 female births in 2021,[342] reflecting only a slight son bias over the naturally expected sex ratio at birth of 105 males to 100 females in the absence of gender discrimination or interference.[343] FSM had a relatively high amount of intimate partner violence, with a prevalence estimate of 21% for physical or sexual intimate partner violence in the past 12 months.[344] FSM has a very low proportion of women serving in its national parliamentary body, the Congress of the FSM. In December 2021, Dr. Perpetua Sappa Konman made history as the first woman to be sworn in and seated as a Member of Congress. She won a National Special Election on 12 November 2021 to fill the seat vacated with the death of her husband, Senator Derensio S. Konman.[345] With her election, women hold 7% of seats in the 14-member national parliament.[346]

FSM has participated in the Pacific Community's (SPC) Progressing Gender Equality in the Pacific project, which includes workshops to identify country priorities related to implementing policies to integrate outcomes that advance gender equality across all government sectors.[347]

FSM is one of 14 Pacific Island Countries and Territories that falls under the umbrella of UN Women's Fiji Multi-Country Office, which works to promote gender equality and women's empowerment in the Pacific through four key programs: 1) Women's Economic Empowerment; 2) Ending Violence Against Women; 3) Advancing Gender Justice in the Pacific; and 4) Increasing Community Resilience through Empowerment of Women to Address Climate Change and Natural Hazards Program.[348]

Gender is among the planning matrices under the FSM Strategic Development Plan (SDP), which identified priority issues for work in the FSM for the period 2004-2023.[349] At the 7th Meeting of Pacific Ministers for Women in May 2021, FSM endorsed women's economic empowerment, gender-responsive climate justice, and tackling gender-based violence. This endorsement entailed agreeing to establish or improve regulatory frameworks and the development and enforcement of labor laws to ensure that informal sector workers and migrant workers have decent paid work and safe workplaces. In FSM, where labor laws beyond the minimum wage are scarce, this work could include the development and promotion of legislation designed to promote fairness in employer and employee relationships, with an emphasis towards ensuring protections for women. Governments agreed to seek to establish or increase support to crisis centers, safe houses, and referral networks for gender-based violence survivors. In FSM, this could include additional financial or programmatic support to government-led initiatives, such as the support centers for victims of human trafficking across the FSM, as well as various women's groups, such as the Chuuk Women's Council, which has been successfully innovating support in this area through its Tongen Inepwineu Counseling Center.[350]

CONCLUSION

The Federated States of Micronesia has experienced various natural disasters, including drought, typhoons, earthquakes, and flooding. In early 2019, Typhoon Wutip struck, hitting Chuuk and Yap particularly hard, and these areas continued to undergo rebuilding efforts as of latter 2022. In the midst of this recovery, the country suffered a year-long drought that saw the entire country experience life-threatening water shortages. During the responses to these two events, FSM was able to call on regional and international partners, including the U.S. government, European Union, and Pacific Community.

The majority of Micronesia's population resides in coastal areas and is exposed to extreme weather. However, FSM also faces a diverse set of hazards that are impacted by climate change, which is exacerbating the prevalence of extreme heat, intensified cyclones, and extreme rainfall. Meanwhile, sea level rise threatens low-lying areas as it increases risks associated with saltwater intrusion, tsunami and cyclone-induced storm surge, wave-driven flooding, and coastal erosion. The country has experienced warming of average temperatures of around 0.7°C (1.25°F) between 1980 and 2017.[351] Biodiversity and the natural environment face extreme pressure, and loss of some species of fish, coral, birds, and terrestrial species is likely without very effective conservation measures. This loss impacts not only the environment but also places stress on livelihoods. Geographic isolation and economic vulnerabilities will increase the challenges faced by communities and decision makers in disaster management and climate change mitigation and adaptation. One of the climate change challenges for FSM is that data and reliable model projections at local scales are lacking, presenting further difficulties for decision makers.

FSM officials face further challenges in collecting and analyzing comprehensive risk information due to the wide range of hazards and remoteness of the island nation. Other areas of future focus for disaster management may include the importance of public and private investment in disaster risk prevention and reduction, looking toward a national standardized risk and vulnerability assessment framework, improving early warning systems, exploring remote humanitarian needs assessments, enhancing capacity building, and promoting gender equality. The sustainability of funding sources, due to FSM's heavy dependence on international aid funding, has been observed as a challenge to consistent, long-term implementation of DRR policy and activities. This challenge is of immediate interest as the COFA between the FSM and U.S. is set to expire in 2023. Renewal negotiations were continuing as of October 2022. The updated 2023 status of the COFA may drive revisions to the FSM National Strategic Development Plan to reflect any new nuances in funding, and these changes may, in turn, impact the policies and agencies involved in disaster response.

Beyond the funding issue, the U.S. government's development and humanitarian action agencies have, heretofore, played a key role in FSM's disaster management frameworks. Amidst global competition, the U.S. has recently expressed strengthening commitment to FSM and Oceania as a region. This commitment will continue to include areas of disaster management in an acknowledgment of the unique logistical challenges that FSM confronts given its remote island geography and minimal resource base. U.S. assistance plays an important role in FSM along with UN multilateral aid and development programs. The importance of this cooperation was shown in the international response to Typhoon Wutip after which the FSM government, the U.S. interagency, and UN agencies all cooperated in a joint damage assessment. FSM's seemingly growing place in the U.S. regional strategy to promote a free and open Indo-Pacific all but ensures that the U.S. and international stakeholders will continue to grow partnerships with FSM, including in DRR and CCA.

APPENDICES

DoD DMHA Engagements in the Past Five Years (FY 2017-2022)

The list below describes engagements between the U.S. DoD and FSM that have DMHA relevance.

Pacific Islands Conference of Leaders, September 2022

On 12 September 2022, leaders from 16 Pacific Islands nations and territories, including FSM's President Panuelo, convened at the East-West Center in Honolulu for the opening of the 12th Pacific Islands Conference of Leaders (PICL) summit meeting.[352] The U.S. participated with a high-level interagency delegation that included representatives from the Department of State, National Security Council, Department of the Interior, DoD, Coast Guard, and USAID. U.S. Deputy Secretary of State Wendy Sherman led the delegation and reaffirmed the U.S. commitment to the Pacific Islands at the conference. The Deputy Secretary highlighted a range of ongoing areas of cooperation with the Pacific Islands and announced several new programs that will provide assistance for governance, people-to-people programs, climate resilience, and information and communications technology. The PICL was followed by a Washington D.C.-hosted U.S.-Pacific Island Country Summit in late September.[353]

Operation Triggerfish, November 2019

From 11 through 29 October 2019, as part of operation Triggerfish 2019, U.S. sailors from Underwater Construction Team (UCT) 2 significantly reduced the size of an underwater obstruction in Sapwuahfik Atoll, located 150 km (93 miles) southwest of the main island of Pohnpei, to widen a channel that serves as an important cargo and passenger transfer point for the country. FSM requested this assistance from the U.S. so that inter-island cargo and passenger ships could enter the atoll in a safer manner. Due to a 37 square meter (400 square foot) obstruction in the middle of the channel, ships previously had to transfer cargo and passengers to small boats to transit ashore. The smaller boats often battled strong currents when transiting. "We have lost numerous goods and people trying to navigate the channel in small boats," said Kapino Neior, a Sapwuahfik elder. The Pohnpei Port Authority and Sapwuahfik residents designated the location where UCT 2 used explosive dredging to remove the obstruction, after conducting environmental pre-site surveys.[354] Sailors operated from USNS Grasp, a Safeguard-class salvage ship operated by civilian merchant mariners and used for diving and salvage.[355] The ship allowed divers to operate close to shore and provided ready access to a recompression chamber in the event of a diving emergency. UCT 2 has been assisting FSM since 2016 with maritime infrastructure assessments, training local divers in the region as well as completing many other projects under the Maritime Infrastructure Assistance program. UCT 2 is part of the Naval Construction Force, the "Seabees." Triggerfish 2019 was a U.S. Third Fleet-led mission that employed expeditionary forces to conduct hydrographic surveys and clear hazards to navigation in FSM. Captain Oscar Rojas, commodore of Explosive Ordnance Disposal Group 1 who oversaw the command and control of Triggerfish 2019, stated, "Operations such as Triggerfish 2019 directly contribute to economic stability and safety at sea, and I am proud of our team for their dedication to that important mission."

Photo 3 shows Master Chief Equipmentman Emory Cole, assigned to UCT 2 Construction Dive Detachment/Bravo, as he carries a suction hose on a shoal in a channel at the Sapwuahfik Atoll on 24 October 2019 in support of Triggerfish 2019.[356]



Photo 3: U.S. Sailor Clears a Channel for Safer Navigation in Sapwuahfik Atoll, Pohnpei

Pacific Partnership, May 2019

Pacific Partnership 2019 (PP19) visited seven countries, including FSM. PP19 officially commenced its mission stop in FSM with an opening ceremony in Chuuk on 13 April. However, PP19 had already been conducting mission-related activities on other Micronesian islands over the previous two weeks. The USNS Brunswick (T-EFP 6), a Military Sealift Command expeditionary fast transport ship, had been conducting activities in the Lower Mortlock Islands and Northwest Islands since 31 March to provide support in the aftermath of Typhoon Wutip, in close coordination with FSM national and Chuuk State and local authorities, the U.S. Embassy, and USAID. The official opening ceremony was followed by a community health and sports fair at Saramen School. According to U.S. Navy Commander Toni Piliwale, Pacific Partnership 2019 assistant director for medical operations, "Pacific Partnership medical professionals from the U.S., Peru, and Australia spent time educating the community about environmental health, nutrition and exercise, and disease prevention. In addition, we were joined by local NGOs and the International Federation of Red Cross and Red Crescent Societies to emphasize the important of disaster preparedness."[357] While in FSM, PP19 worked with local government organizations to host several side-by-side and subject matter expert exchanges ranging from first aid, humanitarian aid and disaster relief (HADR), engineering projects, health symposiums, and other community outreach engagements.[358]

PP19 started on 19 March in Guam,[359] and it concluded on 28 May when participating ships arrived in Singapore.[360] PP19 was the first Pacific Partnership iteration to feature two expeditionary fast transport ships, Fall River and Brunswick, with teams attached to the ships making stops in FSM, the Philippines, Malaysia, the Republic of the Marshall Islands, Timor-Leste, Vietnam, and Thailand. "Pacific Partnership worked to strengthen ties and build national capabilities and preparedness for disaster emergencies," said Royal Navy Captain. Paddy Allen, PP19 director of mission. PP19's focus evolved from direct assistance to furthering regional resiliency and security through DRR opportunities to assist nations in preparing for and responding to crises. Countries from around the world came together to collaborate and learn how to best communicate during a natural disaster. Pacific Partnership is the largest annual, multilateral disaster response preparedness mission in the Indo-Pacific region. In addition to each host nation, participating partner nation personnel hailed from Australia, Canada, Japan, Malaysia, Peru, the Philippines, South Korea, Thailand, and the United Kingdom. This was the second year that Pacific Partnership incorporated a multinational command and control structure, including a director of mission from the United Kingdom and mission chief of staff from Australia. Pacific Partnership's mission

is to work collectively with host and partner nations to enhance regional interoperability and disaster response capabilities, increase stability and security in the region, and foster new and enduring friendships across the Indo-Pacific region.

COPE North, February-March 2019

The U.S., Japan, and Australia participated in COPE North 2019 at Andersen Air Force Base in Guam from 18 February to 8 March. The HADR training event was designed to increase readiness among the allied nations. The exercise's focus on HADR provided critical training to U.S. and allied forces that has a direct impact on the militaries' ability to support the region, including FSM and Palau.[361]

Operation Christmas Drop, December 2018

U.S. Indo-Pacific forces participated in the annual Operation Christmas Drop, delivering three bundles to the island of Nama in FSM on 10 December 2018. This 67th iteration of Operation Christmas Drop planned to provide 25 tons of supplies including food, tools, and toys to 20,000 people throughout FSM, the Commonwealth of the Northern Marianas, and the Republic of Palau. Christmas Drop serves as the world's longest running airdrop training mission. In addition to the U.S. Air Force, the Japan Air-Self Defense Force and the Royal Australian Air Force participated in the effort to better prepare to respond to HADR situations in the region via Coastal Humanitarian Air Drops that increase interoperability.[362]

Pacific Partnership in FSM, March-April 2018

Pacific Partnership 2018 (PP18) concluded aboard the expeditionary fast transport ship USNS Brunswick (T-EPF 6) in Yap, on 1 April 2018. More than 800 military personnel aboard the Brunswick and the hospital ship USNS Mercy, along with host nation civilians and NGOs, participated in the PP18 mission in FSM, Indonesia, Malaysia, Palau, Sri Lanka, Thailand, and Vietnam. The USNS Brunswick is specially configured for HADR operations and is capable of accommodating a multi-specialized team of medical, engineering, and civic assistance personnel to support the Pacific Partnership mission.[363] The PP18 portion in FSM concluded in Yap on 2 April 2018.[364]

International/Foreign Relations

A significant part of FSM's foreign policy is regional cooperation through membership in multilateral organizations, particularly in the Pacific Islands Forum (PIF), the Pacific Community (SPC), and the Secretariat of the Pacific Regional Environment Programme (SPREP). However, PIF dynamics grew increasingly rocky in February 2021, when five nations from the Oceanic sub-region of Micronesia – FSM, Nauru, Kiribati, Republic of the Marshall Islands (RMI), and Palau – announced that they agreed to initiate the formal year-long process of withdrawing from PIF.[365] This followed an October 2020 communiqué threatening to withdraw if the Secretary-General position did not go to their candidate, Gerald Zackios, Marshall Islands' ambassador to the U.S. and former RMI foreign minister. This was to stay aligned with an established gentlemen's agreement on sub-regional rotation of leadership among Oceania's Micronesian, Melanesian, and Polynesian sub-regions.[366] However, on 3 February 2021, PIF leaders instead voted 9 to 8 for Henry Puna, former prime minister of the Cook Islands. PIF had only once been led by a Micronesian secretary-general since it was formed in 1971.[367] In early 2022, the Micronesian countries deferred their withdrawal. By June 2022, PIF reached an agreement in Suva to formalize in writing to make permanent the rotation of the Secretary-General position among Micronesia, Melanesia, and Polynesia, with the creation of two deputy secretary-general positions for the other sub-regions.[368] This agreement kept Puna in the top job, but Micronesia will be represented by the next secretary-general from 2024. FSM stayed in; however, Kiribati had not participated in the deal

and by July 2022 Kiribati withdrew from PIF.[369]

FSM is one of three Pacific Island countries (along with the RMI and Palau) to have entered a Compact of Free Association (COFA) with the United States. The international agreement establishes and governs the relationship of free association between FSM and the U.S., including funding assistance. The original Compact ran 1986-2001, and it was amended in 2004 for 20 years. It is set to expire in 2023 for FSM and RMI (with Palau's agreement set to expire in 2024). Renewal of the COFA is tied to about US$220 million in U.S. aid delivered to the region. Total aid to the COFA nations since COFA was originally established amounts to US$7.7 billion, funding that has primarily gone to infrastructure, education, and medical and environmental support.[370] In March 2022, President Joseph Biden named Ambassador Joseph Yun as U.S. Special Presidential Envoy for Compact Negotiations to take over negotiation for amendment and continuation of COFA.[371] The COFA provides for U.S. economic assistance including eligibility for certain U.S. federal programs, defense of FSM, and other benefits in exchange for U.S. defense and other operating rights in FSM, denial of access to FSM territory by other nations, and other agreements.[372]

FSM has been a prominent voice opposing China's security influence in Oceania. In March 2022, FSM President Panuelo publicly urged the Solomon Islands not to sign a security pact with China due to grave security concerns,[373] though the Solomon Islands entered the security pact with China the following month.[374] China is FSM's third largest trading partner (US$6.8 million). FSM's other top trading partners are Thailand (US$90.9 million), the Philippines (US$15.1 million), Japan (US$4.99 million), and the United States (US$2.52 million), to which FSM exports fish, broadcasting equipment, and perfumes.[375] Dozens of FSM students annually study abroad in China, often facilitating Chinese investment in FSM upon return to their home country. China has increased its presence in Oceania over the longer-term through a range of activities, including business and cultural exchanges.

For the FSM, relations with both the U.S. and China involve a balancing act, relying on its "friend to all, enemy to none" foreign policy.[376]

Participation in International Organizations

Micronesia is a member of, participates in, or cooperates with the following international organizations and agreement frameworks either as a government or via a national NGO or other entity:

Alliance of Small Island States (AOSIS), Asian Development Bank (ADB), Food and Agriculture Organization of the United Nations (FAO), Group of 77 (G-77), Institute of Catastrophe Risk Management (ICRM), Inter-Parliamentary Union (IPU), International Bank for Reconstruction and Development (IBRD), International Civil Aviation Organization (ICAO), International Development Association (IDA), International Federation of Red Cross and Red Crescent Societies (IFRC), International Finance Corporation (IFC), International Monetary Fund (IMF), International Olympic Committee (IOC), International Organization for Migration (IOM of the UN), International Telecommunications Satellite Organization (ITSO), International Telecommunications Union (ITU), Multilateral Investment Guarantee Agency (MIGA), Organisation for the Prohibition of Chemical Weapons (OPCW), Organisation of African, Caribbean and Pacific States (ACP), Pacific Community (SPC, formerly the South Pacific Commission), Pacific Islands Forum (PIF), South Pacific Regional Trade and Economic Co-operation Agreement (Sparteca), United Nations (UN), United Nations Conference on Trade and Development (UNCTAD), UN Educational, Scientific, and Cultural Organization (UNESCO), World Health Organization (WHO), World Meteorological Organization (WMO).

Force Protection/Pre-Deployment Information

The following information is provided for pre-deployment planning and preparations.[377] Visit www.travel.state.gov prior to deployments for further up-to-date information. DoD personnel must review the Foreign Clearance Guide for travel to FSM (www.fcg.pentagon.mil). All official travel and personal travel for active-duty personnel must be submitted through an APACS request. Contact information for the Defense Attaché Office can be found in the Foreign Clearance Guide if you have additional questions.

Passport/Visa

U.S. citizens traveling to Micronesia need a passport valid for at least 180 days from the time of entry, a completed FSM Immigration Arrival and Departure Record, and a completed FSM Customs Form in order to enter. Air carriers distribute the FSM Immigration Arrival and Departure Record and Customs Form before arrival in the FSM. U.S. citizens may enter the FSM to live, work, or study indefinitely without visas or non-citizen registration requirements per the Compact of Free Association (COFA). There is no limit to the length of time U.S. citizens can remain in the FSM.

Micronesia imposes departure taxes. which must be paid upon departure from each island. For current departure fees visit Micronesia's Customs Regulations webpage (https://visit-micronesia.fm/regulations/). Credit cards are not accepted, and ATM machines are not available at any of the airports. There is no departure fee for U.S. officials traveling on official or diplomatic passports.

Travel on commercial aircraft between states of the FSM is considered international travel, and persons who are not citizens of the FSM are required to comply with passport requirements upon arrival in any state of the FSM from a commercial aircraft regardless of the point of boarding.

FSM Travel Letters: U.S. citizens with FSM family ties who reside in the continental U.S., Hawaii, or the U.S. Pacific Island territories of Guam or the Commonwealth of the Northern Mariana Islands, should avoid traveling to Chuuk or Yap States with travel letters issued by the FSM Embassy or Consulate. U.S. citizens who enter the FSM with a travel letter will not be able to exit the FSM without a valid U.S. passport, which can only be obtained on Pohnpei. Travelers, including small children, have been stranded in Chuuk or Yap for days and weeks waiting to receive their passports, because the only U.S. Consulate is on Pohnpei.

Safety and Security

Most crime in the FSM is petty theft motivated by opportunity and impulse. However, U.S. citizens and other foreigners have received threats of violence. Outside of city limits, local residents may wield guns as a form of intimidation. Do not attempt to intervene in disputes between local citizens. Crime increases at night and alcohol usually plays a role, especially in assaults. Sexual assaults do occur but can most often be avoided using basic precautions. Crime rates are significantly higher in Chuuk, and incidents in Chuuk have recently included assaults on U.S. citizens. Compared to norms in the United States, local police are less responsive to victim concerns, particularly in cases involving burglary. Local police do not possess the resources to fully investigate crimes.

Unexploded ordnance from sunken World War II vessels and aircraft exists in the area, especially in Chuuk, Yap, and surrounding channels. Use extreme caution when boating, snorkeling, or diving.

To remain safe:

- Exercise extreme caution at all times
- Report any threats against your safety or suspicious activities to the local police and the U.S. Embassy
- Be alert to any unusual activity around your home or business
- Stay off the streets after dark
- Drive with the car windows closed and doors locked

- Women should travel in groups and walk in well-lit areas

Victims of crime should:
- Report crimes to the local police by dialing 911 and contact the U.S. Embassy at 320-2187
- Remember that local authorities are responsible for investigating and prosecuting crime

The Embassy can:
- Help find appropriate medical care
- Assist in reporting a crime to the police
- Contact relatives or friends with written consent
- Provide general information regarding the victim's role during the local investigation and following its conclusion
- Provide a list of local attorneys
- Provide information on victim's compensation programs in the U.S.
- Provide an emergency loan for repatriation to the United States and/or limited medical support in cases of destitution
- Help find accommodation and arrange flights home
- Replace a stolen or lost passport

Tourism: The tourism industry is unevenly regulated, and safety inspections for equipment and facilities do not commonly occur. Hazardous areas/activities are not always identified with appropriate signage, and staff may not be trained or certified either by the host government or by recognized authorities in the field. In the event of an injury, appropriate medical treatment is typically available only in/near major cities. Divers should check on hyperbaric chamber functionality with a reputable international dive organization before diving in FSM. First responders are generally unable to access areas outside of major cities or to provide urgent medical treatment. U.S. citizens are encouraged to purchase medical evacuation insurance.

Domestic Violence: U.S. citizen victims of domestic violence are encouraged to contact the Embassy for assistance.

Emergency Contact Information

U.S. Embassy Kolonia
1286 U.S. Embassy Place, Pohnpei
Kolonia, Federated States of Micronesia
Phone: 691-320-2187 or 691-920-2369 (after hours)
Email: *KoloniaACS@state.gov*
Website: *https://fm.usembassy.gov/*
Twitter: @USEmbassyFSM
Facebook: usembassykolonia

Currency Information

The U.S. Dollar (US$) is the official currency in FSM.

Travel Health Information

The U.S. Centers for Disease Control and Prevention (CDC) provides guidance that all travelers to Micronesia should be up to date on routine vaccinations. The following are additional recommendations for travel to FSM. The information in Tables 7 and 8 are taken directly from the CDC website under the Travelers Health Section (*https://wwwnc.cdc.gov/travel/destinations/list/*).[378]

The following actions you can take to stay healthy and safe on your trip include:

Eat and Drink Safely

Unclean food and water can cause travelers' diarrhea and other diseases. Reduce your risk by sticking to safe food and water habits.

Eat
- Food that is cooked and served hot
- Hard-cooked eggs
- Fruits and vegetables, you have washed in clean water or peeled yourself
- Pasteurized dairy products

Don't Eat
- Food served at room temperature
- Food from street vendors
- Raw or soft-cooked (runny) eggs
- Raw or undercooked (rare) meat or fish
- Unwashed or unpeeled raw fruits and vegetables

Routine Vaccinations	All travelers should be up to date on all routine vaccines before every trip. Some of these vaccines include • Chickenpox (Varicella) • Diphtheria-Tetanus-Pertussis • Flu (influenza) • Measles-Mumps-Rubella (MMR) • Polio • Shingles
COVID-19	All eligible travelers should be up to date with the COVID-19 vaccine, including boosters.
Hepatitis A	Vaccination is recommended for unvaccinated travelers one year old or older. Infants 6 -11 months old should also be vaccinated; this dose does not count toward the routine 2-dose series. Travelers allergic to a vaccine component or who are younger than 6 months should receive a single dose of immune globulin, which provides effective protection for up to 2 months depending on dosage given. Unvaccinated travelers who are over 40 years old, immunocompromised, or have chronic medical conditions and who are planning to depart to a risk area in less than 2 weeks should get the initial dose of vaccine and at the same appointment receive immune globulin.
Hepatitis B	Recommended for unvaccinated travelers of all ages.
Measles	Infants 6 to 11 months old traveling internationally should get 1 dose of MMR vaccine before travel. This dose does not count as part of the routine childhood vaccination series.
Typhoid	Vaccination is recommended for most travelers, especially those staying with friends or relatives or visiting smaller cities or rural areas.

Table 7: CDC Travel Health Information for Vaccine Preventable Diseases in Micronesia

Chikungunya	Transmitted by mosquito bite; avoid bug bites.
Dengue	Transmitted by mosquito bite; avoid bug bites.
Hantavirus	Contracted by breathing in air or accidentally eating food contaminated with the urine, droppings, or saliva of infected rodents, by a bite from an infected rodent, or by being around someone sick with hantavirus. Avoid rodents and areas where they live, and avoid sick people.
Leptospirosis	Contracted by touching urine or other body fluids from an animal infected with leptospirosis, swimming or wading in urine-contaminated fresh water, contact with urine-contaminated mud, or drinking water or eating food contaminated with animal urine. Avoid contaminated water and soil.
Tuberculosis (TB)	Contracted by breathing in TB bacteria that is in the air from an infected and contagious person coughing, speaking, or singing. Avoid sick people.
Zika	Transmitted by mosquito bite or from a pregnant woman to her unborn baby; avoid bug bites.

Table 8: CDC Travel Health Information for Non-Vaccine Preventable Diseases in Micronesia

- Unpasteurized dairy products
- "Bushmeat" (monkeys, bats, or other wild game)

Drink
- Bottled water that is sealed
- Water that has been disinfected
- Ice made with bottled or disinfected water
- Carbonated drinks
- Hot coffee or tea
- Pasteurized milk

Don't Drink
- Tap or well water
- Ice made with tap or well water
- Drinks made with tap or well water (such as reconstituted juice)
- Unpasteurized milk

Take Medicine

Talk with your doctor about taking prescription or over-the-counter drugs with you on your trip in case you get sick. If you are going to a high-risk area, fill your malaria prescription before you leave, and take enough with you for the entire length of your trip. Follow your doctor's instructions for taking the pills; some need to be started before you leave.

Prevent Bug Bites

Bugs (like mosquitoes, ticks, and fleas) can spread a number of diseases in FSM. Many of these diseases cannot be prevented with a vaccine or medicine. You can reduce your risk by taking steps to prevent bug bites.

To prevent bug bites:

- Cover exposed skin by wearing long-sleeved shirts, long pants, and hats.
- Use an appropriate insect repellent (see below).
- Use permethrin-treated clothing and gear (such as boots, pants, socks, and tents). Do not use permethrin directly on skin.
- Stay and sleep in air-conditioned or screened rooms.
- Use a bed net if the area where you are sleeping is exposed to the outdoors.

For protection against ticks and mosquitoes:

Use a repellent that contains 20% or more DEET for protection that lasts up to several hours.

For protection against mosquitoes only:

Products with one of the following active ingredients can also help prevent mosquito bites. Higher percentages of active ingredient provide longer protection.

- DEET
- Picaridin (also known as KBR 3023, Bayrepel, and Icaridin)
- Oil of lemon eucalyptus (OLE) or para-Menthane-3,8-diol (PMD)
- IR3535
- 2-undecanone

If you are bitten by bugs:

- Avoid scratching bug bites and apply hydrocortisone cream or calamine lotion to reduce the itching.
- Check your entire body for ticks after outdoor activity. Be sure to remove ticks properly.

Safety and Security

Note that conditions can change rapidly in a country at any time. To receive updated Travel Advisories and Alerts for the countries you choose, sign up at step.state.gov.

Sendai Framework

A 2022 report, Disaster Risk Reduction in the Federated States of Micronesia, provided a snapshot of the state of DRR in FSM under four priorities of the Sendai Framework for Disaster Risk Reduction 2015-2030. It noted the challenge FSM officials can have collecting and analyzing comprehensive risk information due to the wide range of hazards and remoteness of the island nation, the importance of public and private investment in disaster risk prevention and reduction, and efforts to promote capacity building and gender equality. It identified one of the biggest challenges in implementing DRR policy and activities in FSM as being the sustainability of funding sources because of the country's heavy dependence on international aid funding. It recommended that FSM revitalize the National Strategic Development Plan to reflect a new context with COFA funding in 2023, when the COFA expires, and to plan for renewal contingencies. It also recommends FSM adopt a national standardized risk and vulnerability assessment framework, develop an impact-based early warning system, and utilize remote assessments and community feedback on the impacts of the disasters to assist the determination of humanitarian needs.

The information in this section is sourced directly from the Sendai Framework. The Sendai Framework for Disaster Risk Reduction 2015-2030 outlines seven clear targets and four priorities for action to prevent new and reduce existing disaster risks:

The Seven Global Targets include:

- Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality rates in the decade 2020-2030 compared to the period 2005-2015.
- Substantially reduce the number of affected people globally by 2030, aiming to lower average global figure per 100,000 in the decade 2020 -2030 compared to the period 2005-2015.
- Reduce direct disaster economic loss in relation to GDP by 2030.
- Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.
- Substantially increase the number of countries with national and local DRR strategies by 2020.
- Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this Framework by 2030.
- Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.

The Four Priorities of Action include:

- Understanding disaster risk
- Strengthening disaster risk governance to manage disaster risk
- Investing in disaster reduction for resilience; and
- Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation, and reconstruction.

The Sendai Framework aims to achieve the substantial reduction of disaster risk and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries over 15 years. It was adopted at the Third United Nations World Conference on Disaster Risk Reduction in Sendai, Japan, in 2015. The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters. Figure 13 shows the Sendai DRR Framework.

Chart of the Sendai Framework for Disaster Risk Reduction
2015-2030

Scope and purpose

The present framework will apply to the risk of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters, caused by natural or manmade hazards as well as related environmental, technological and biological hazards and risks. It aims to guide the multi-hazard management of disaster risk in development at all levels as well as within and across all sectors

Expected outcome

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries

Goal

Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience

Targets

Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality between 2020-2030 compared to 2005-2015	Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 between 2020-2030 compared to 2005-2015	Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030	Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030	Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020	Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030	Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030

Figure 13: UN Sendai Framework for Disaster Risk Reduction 2015-2030

HFA Country Progress Report

The Hyogo Framework for Action (HFA) was adopted as a guideline to reduce vulnerabilities to natural hazards. The HFA assists participating countries to become more resilient and to better manage the hazards that threaten their development. The most recent levels of progress results published from FSM are from 2011-2013 and are represented in Figure 14 and Table 9. Table 10 provides an overview of the overall challenges and the future outlook statement from the HFA report. The 2011-2013 Report is the most recent HFA report available for FSM. The information in this section is sourced directly from the HFA Country Progress Report.

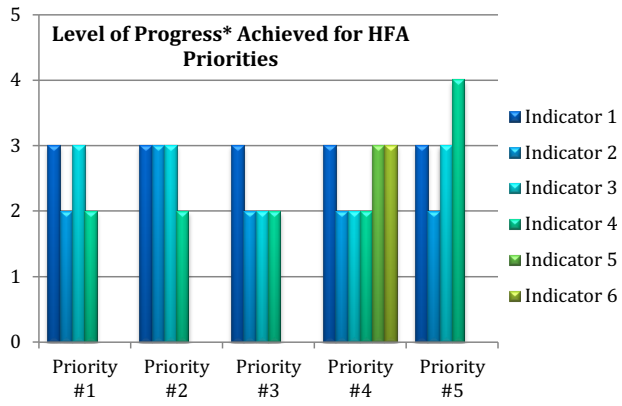


Figure 14: HFA Level of Progress Achieved

Core Indicator*	Indicator Description	Level of progress Achieved*
Priority for Action #1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.		
1	National policy and legal framework for disaster risk reduction exists with decentralized responsibilities and capacities at all levels.	3
2	Dedicated and adequate resources are available to implement disaster risk reduction plans and activities at all administrative levels.	2
3	Community participation and decentralization is ensured through the delegation of authority and resources to local levels.	3
4	A national multi sectoral platform for disaster risk reduction is functioning.	2
Priority for Action #2: Identify, assess, and monitor disaster risks and enhance early warning.		
1	National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors.	3
2	Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities.	3
3	Early warning systems are in place for all major hazards, with outreach to communities.	3
4	National and local risk assessments take account of regional / trans-boundary risks, with a view to regional cooperation on risk reduction.	2
Priority for Action #3: Use knowledge, innovation, and education to build a culture of safety and resilience at all levels		
1	Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems, etc.).	3
2	School curricula, education material and relevant trainings include disaster risk reduction and recovery concepts and practices.	2
3	Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened.	2
4	Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened.	2

Table 9: FSM National Progress Report on the Implementation of the HFA (2011-2013)

Priority for Action #4: Reduce the underlying risk factors.		
1	Disaster risk reduction is an integral objective of environment related policies and plans, including for land use natural resource management and adaptation to climate change.	3
2	Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk.	2
3	Economic and productive sectorial policies and plans have been implemented to reduce the vulnerability of economic activities.	2
4	Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes.	2
5	Disaster risk reduction measures are integrated into post disaster recovery and rehabilitation processes.	3
6	Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure.	3
Priority for Action #5: Strengthen disaster preparedness for effective response at all levels.		
1	Strong policy, technical and institutional capacities, and mechanisms for disaster risk management, with a disaster risk reduction perspective are in place.	3
2	Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programs.	2
3	Financial reserves and contingency mechanisms are in place to support effective response and recovery when required.	3
4	Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews.	4

Table Notes:
*Level of Progress:
1 – Minor progress with few signs of forward action in plans or policy
2 – Some progress, but without systematic policy and/ or institutional commitment
3 – Institutional commitment attained, but achievements are neither comprehensive nor substantial
4 – Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities
5 – Comprehensive achievement with sustained commitment and capacities at all levels

Table 9: FSM National Progress Report on the Implementation of the HFA (2011-2013) (cont.)

Future Outlook Area 1: The more effective integration of disaster risk considerations into sustainable development policies, planning, and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness, and vulnerability reduction.	
Challenges:	• Planning department and sector agencies do not see DRR as a priority, or do not understand the linkages. • Absence of DRR policy, national legislation, or action plan. • Absence of a multi-stakeholder forum that includes strong representation from civil society. • Weak coordination and dissemination of DRM information.
Future Outlook Statement:	A National DRM Policy is developed to complement the National Climate Change Policy and DRM is being effectively implemented through the development of supporting legislation, improved coordination, and the integration of DRR into sectoral, agency, and state development plans.
Future Outlook Area 2: The development and strengthening of institutions, mechanisms, and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.	
Challenges:	• Limited technical capacity in DRM planning. • Weak capacity at sub-national levels (staffing, resources) – State and Community levels. • Limited use of available technical agencies. • Difficulty of accessing remote communities on outer islands
Future Outlook Statement:	Increased capacity for effective DRR planning through training and capacity building of relevant institutions such as the National DM Task Force, OEEM (now DECEM) staff, and State-level players, as well as development of appropriate tools and systems for DRR, and improved use of existing technical and educational institutions, such as the College of Micronesia.
Future Outlook Area 3: The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response, and recovery programs in the reconstruction of affected communities.	
Challenges:	• Limited national capacity for conducting post-disaster damage assessments and analysis and integration of lessons learned. • Strong reliance on international partners. • Logistical constraints.
Future Outlook Statement:	State and community level programs and capacities for emergency preparedness, response, and recovery are strengthened including improved coordination between different levels of government.

Table 10: HFA Country Progress Report Future Outlook Areas, FSM

Country Profile

The information in the Country Profile section is sourced directly from the CIA World Fact book for Micronesia, Federated States of. Additional numbers on country comparison to the world can be found by going directly to the CIA website (*https:/www.cia.gov*). It discusses topics including geography, people and society, government, economy, energy, communications, military and security, transportation, terrorism, and transnational issues.[379]

Background

Each of the four states that compose the Federated States of Micronesia (FSM) - Chuuk, Kosrae, Pohnpei, and Yap - has its own unique history and cultural traditions. The first humans arrived in what is now the FSM in the second millennium B.C. In the 800s A.D., construction of the artificial islets at the Nan Madol complex in Pohnpei began, with the main architecture being built around 1200. At its height, Nan Madol united the approximately 25,000 people of Pohnpei under the Saudeleur Dynasty. Around the same time, Kosrae was united in a kingdom centered in Leluh by 1250. Yap's society became strictly hierarchical, with chiefs receiving tributes from islands up to 1,100 km (700 mi) away. Widespread human settlement in Chuuk began in the 1300s, and the different islands in the Chuuk Lagoon were frequently at war with one another.

Portuguese and Spanish explorers visited a few of the islands in the 1500s and Spain began exerting nominal, but not day-to-day, control over some of the islands - which they named the Caroline Islands - in the 1600s. Christian missionaries arrived in the 1800s, in particular to Chuuk and Kosrae. By the 1870s, nearly every Kosraean had converted to Christianity and religion continues to play an important role in daily life on the island. In 1899, Spain sold all of the FSM to Germany. Japan seized the islands in 1914 and was granted a League of Nations mandate to administer them in 1920. The Japanese navy built bases across most of the islands and headquartered their Pacific naval operations in Chuuk. The US bombed Chuuk in 1944 during Operation Hailstone in World War II, destroying 250 Japanese planes and 40 ships. The US military largely bypassed the other islands in its leapfrog campaign across the Pacific.

The FSM came under US administration as part of the Trust Territory of the Pacific Islands in 1947, which comprised six districts: Chuuk, the Marshall Islands, the Northern Mariana Islands, Palau, Pohnpei, and Yap; Kosrae was separated from Pohnpei into a separate district in 1977. In 1979, Chuuk, Kosrae, Pohnpei, and Yap ratified the FSM Constitution and declared independence while the other three districts opted to pursue separate political statuses. In 1982, the FSM signed a Compact of Free Association (COFA) with the US, which granted the FSM financial assistance and access to many US domestic programs in exchange for exclusive US military access and defense responsibilities; the COFA entered into force in 1986 and its funding was renewed in 2003. There are significant inter-island rivalries stemming from their different histories and cultures. Chuuk, the most populous but poorest state, has pushed for secession, but an independence referendum has been repeatedly postponed and may not be held.

Eligible Micronesians can live, work, and study in any part of the US and its territories without a visa - this privilege reduces stresses on the island economy and the environment. Micronesians serve in the US armed forces and military recruiting from the FSM, per capita, is higher than many US states.

Geography
Note: composed of four major island groups totaling 607 islands

Location
Oceania, island group in the North Pacific Ocean, about three-quarters of the way from Hawaii to Indonesia

Geographic coordinates
6 55 N, 158 15 E

Area
total: 702 sq km
land: 702 sq km
water: 0 sq km (fresh water only)
note: includes Pohnpei (Ponape), Chuuk (Truk) Islands, Yap Islands, and Kosrae (Kosaie)
country comparison to the world: 196

Area - comparative
four times the size of Washington, DC (land area only)

Land boundaries
total: 0 km

Coastline
6,112 km

Maritime claims
territorial sea: 12 nm
exclusive economic zone: 200 nm

Climate
tropical; heavy year-round rainfall, especially in the eastern islands; located on southern edge of the typhoon belt with occasionally severe damage

Terrain
islands vary geologically from high mountainous islands to low, coral atolls; volcanic outcroppings on Pohnpei, Kosrae, and Chuuk

Elevation
highest point: Nanlaud on Pohnpei 782 m
lowest point: Pacific Ocean 0 m

Natural resources
timber, marine products, deep-seabed minerals, phosphate

Land use
agricultural land: 25.5% (2018 est.)
arable land: 2.3% (2018 est.)
permanent crops: 19.7% (2018 est.)
permanent pasture: 3.5% (2018 est.)
forest: 74.5% (2018 est.)
other: 0% (2018 est.)

Irrigated land
0 sq km (2012) NA

Population distribution
the majority of the population lives in the coastal areas of the high islands; the mountainous interior is largely uninhabited; less than half of the population lives in urban areas

Natural hazards
typhoons (June to December)
People and Society

Population
101,009 (2022 est.)
country comparison to the world: 194

Nationality
noun: Micronesian(s)
adjective: Micronesian; Chuukese, Kosraen(s), Pohnpeian(s), Yapese

Ethnic groups
Chuukese/Mortlockese 49.3%, Pohnpeian 29.8%, Kosraean 6.3%, Yapese 5.7%, Yap outer islanders 5.1%, Polynesian 1.6%, Asian 1.4%, other 0.8% (2010 est.)

Languages
English (official and common language), Chuukese, Kosrean, Pohnpeian, Yapese, Ulithian, Woleaian, Nukuoro, Kapingamarangi

Religions
Roman Catholic 54.7%, Protestant 41.1% (includes Congregational 38.5%, Baptist 1.1%, Seventh Day Adventist 0.8%, Assembly of God 0.7%), Church of Jesus Christ 1.5%, other 1.9%, none 0.7%, unspecified 0.1% (2010 est.)

Age structure
0-14 years: 28.24% (male 14,585/female 14,129)
15-24 years: 18.62% (male 9,473/female 9,461)
25-54 years: 40.81% (male 19,998/female 21,493)
55-64 years: 7.38% (male 3,602/female 3,898)
65 years and over: 4.95% (2021 est.) (male 2,260/female 2,776)

Figure 15 is the population pyramid for Micronesia for 2022.[380]

Dependency ratios
total dependency ratio: 55.2
youth dependency ratio: 48.4
elderly dependency ratio: 6.8
potential support ratio: 14.7 (2020 est.)

Median age
total: 26.3 years
male: 25.5 years
female: 27.1 years (2020 est.)
country comparison to the world: 154

Population growth rate
-0.67% (2022 est.)
country comparison to the world: 227

Birth rate
18.39 births/1,000 population (2022 est.)
country comparison to the world: 80

Death rate
4.19 deaths/1,000 population (2022 est.)
country comparison to the world: 211

Net migration rate
-20.91 migrant(s)/1,000 population (2022 est.)
country comparison to the world: 229

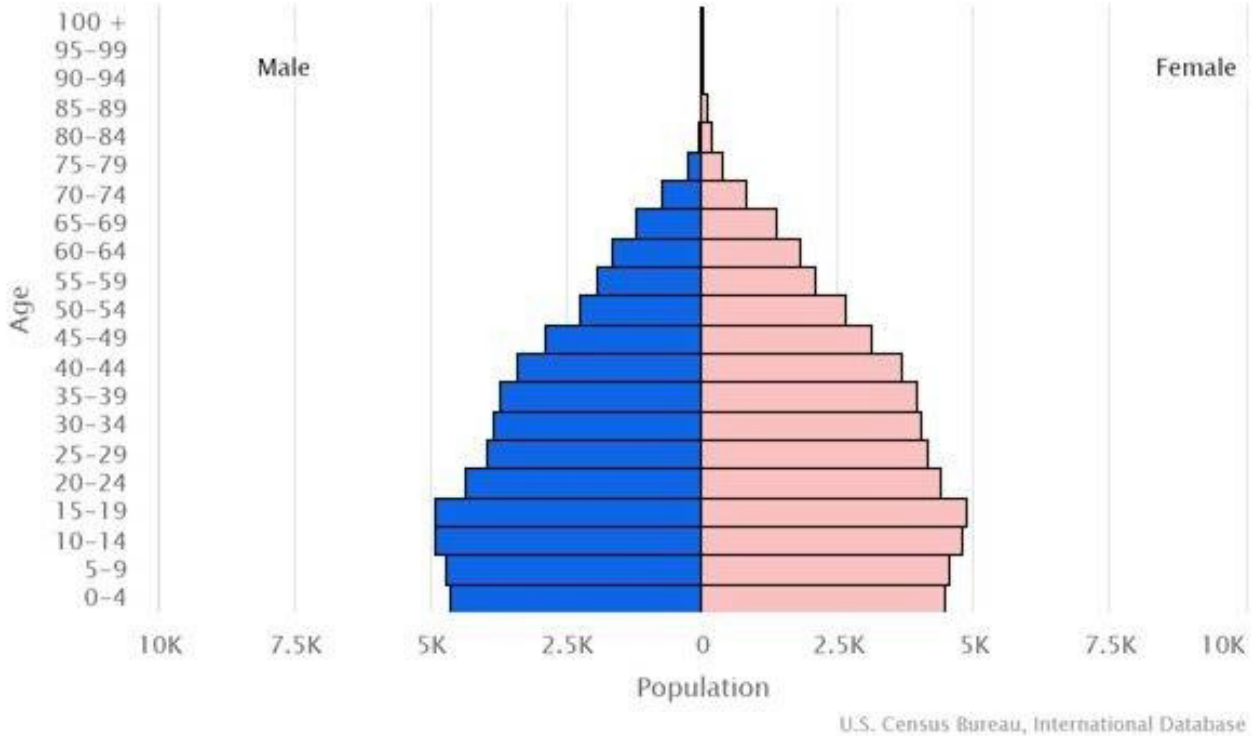


Figure 15: Population Pyramid, Micronesia (2022)

Population distribution
the majority of the population lives in the coastal areas of the high islands; the mountainous interior is largely uninhabited; less than half of the population lives in urban areas

Urbanization
urban population: 23.2% of total population (2022)
rate of urbanization: 1.52% annual rate of change (2020-25 est.)
total population growth rate v. urban population growth rate, 2000-2030

Major urban areas - population
7,000 PALIKIR (capital) (2018)

Sex ratio
at birth: 1.05 male(s)/female
0-14 years: 1.03 male(s)/female
15-24 years: 1 male(s)/female
25-54 years: 0.92 male(s)/female
55-64 years: 0.92 male(s)/female
65 years and over: 0.57 male(s)/female
total population: 0.96 male(s)/female (2022 est.)

Maternal mortality ratio
88 deaths/100,000 live births (2017 est.)
country comparison to the world: 75

Infant mortality rate
total: 21.9 deaths/1,000 live births
male: 25.02 deaths/1,000 live births
female: 18.63 deaths/1,000 live births (2022 est.)
country comparison to the world: 76

Life expectancy at birth
total population: 74.44 years
male: 72.34 years
female: 76.66 years (2022 est.)
country comparison to the world: 137

Total fertility rate
2.24 children born/woman (2022 est.)
country comparison to the world: 83

Contraceptive prevalence rate
NA

Drinking water source
improved: total: 78.6% of population
unimproved: total: 21.4% of population (2017 est.)

Current Health Expenditure
11.4% (2019)

Hospital bed density
3.2 beds/1,000 population

Sanitation facility access
improved: urban: NA
rural: NA
total: 88.3% of population
unimproved: urban: NA
rural: NA
total: 11.7% of population (2017 est.)

HIV/AIDS - adult prevalence rate
NA

HIV/AIDS - people living with HIV/AIDS
NA

HIV/AIDS - deaths
NA

Major infectious diseases
degree of risk: high (2020)
food or waterborne diseases: bacterial diarrhea
vectorborne diseases: malaria

Obesity - adult prevalence rate
45.8% (2016)
country comparison to the world: 10

Children under the age of 5 years underweight
NA

Education expenditures
9.7% of GDP (2018 est.)
country comparison to the world: 4

Literacy
total population: NA
male: NA
female: NA

Unemployment, youth ages 15-24
total: 18.9%
male: 10.4%
female: 29.9% (2014)
Environment

Environment - current issues
overfishing; climate change; water pollution, toxic pollution from mining; solid waste disposal

Environment - international agreements
party to: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Climate Change-Paris Agreement, Comprehensive Nuclear Test Ban, Desertification, Hazardous Wastes, Law of the Sea, Ozone Layer Protection
signed, but not ratified: none of the selected agreements

Air pollutants
particulate matter emissions: 10.23 micrograms per cubic meter (2016 est.)
carbon dioxide emissions: 0.14 megatons (2016 est.)
methane emissions: 0.02 megatons (2020 est.)

Climate
tropical; heavy year-round rainfall, especially in the eastern islands; located on southern edge of the typhoon belt with occasionally severe damage

Land use
agricultural land: 25.5% (2018 est.)
arable land: 2.3% (2018 est.)
permanent crops: 19.7% (2018 est.)
permanent pasture: 3.5% (2018 est.)
forest: 74.5% (2018 est.)
other: 0% (2018 est.)

Urbanization
urban population: 23.2% of total population (2022)
rate of urbanization: 1.52% annual rate of change (2020-25 est.)
total population growth rate v. urban population growth rate, 2000-2030

Revenue from forest resources
forest revenues: 0.02% of GDP (2018 est.)
country comparison to the world: 143

Major infectious diseases
degree of risk: high (2020)
food or waterborne diseases: bacterial diarrhea
vectorborne diseases: malaria

Waste and recycling
municipal solid waste generated annually: 26,040 tons (2016 est.)

Total renewable water resources
0 cubic meters (2017 est.)
Government

Country name
conventional long form: Federated States of Micronesia
conventional short form: none
local long form: Federated States of Micronesia
local short form: none
former: New Philippines; Caroline Islands; Trust Territory of the Pacific Islands, Ponape, Truk, and Yap Districts
abbreviation: FSM
etymology: the term "Micronesia" is a 19th-century construct of two Greek words, "micro" (small) and "nesoi" (islands), and refers to thousands of small islands in the western Pacific Ocean

Government type
federal republic in free association with the US

Capital
name: Palikir
geographic coordinates: 6 55 N, 158 09 E
time difference: UTC+11 (16 hours ahead of Washington, DC, during Standard Time)
time zone note: Micronesia has two time zones
note: Palikir became the new capital of the country in 1989, three years after independence; Kolonia, the former capital, remains the site for many foreign embassies; it also serves as the Pohnpei state capital

Administrative divisions
4 states; Chuuk (Truk), Kosrae (Kosaie), Pohnpei (Ponape), Yap

Independence
3 November 1986 (from the US-administered UN trusteeship)

National holiday
Constitution Day, 10 May (1979)

Constitution
history: drafted June 1975, ratified 1 October 1978, entered into force 10 May 1979
amendments: proposed by Congress, by a constitutional convention, or by public petition; passage requires approval by at least three-fourths majority vote in at least three fourths of the states; amended 1990; note – at least every 10 years as part of a general or special election, voters are asked whether to hold a constitution convention; a majority of affirmative votes is required to proceed; amended many times, last in 2019 (approval by referendum to hold a constitutional convention)

Legal system
mixed legal system of common and customary law

International law organization participation
has not submitted an ICJ jurisdiction declaration; non-party state to the ICCt

Citizenship
citizenship by birth: no
citizenship by descent only: at least one parent must be a citizen of FSM
dual citizenship recognized: no
residency requirement for naturalization: 5 years

Suffrage
18 years of age; universal

Executive branch
chief of state: President David W. PANUELO (since 11 May 2019); Vice President Yosiwo P. GEORGE (since 11 May 2015); note - the president is both chief of state and head of government
head of government: President David W. PANUELO (since 11 May 2019); Vice President Yosiwo P. GEORGE (since 11 May 2015)
cabinet: Cabinet includes the vice president and the heads of the 8 executive departments
elections/appointments: president and vice president indirectly elected by Congress from among the 4 'at large' senators for a 4-year term (eligible for a second term); election last held on 11 May 2019 (next to be held in 2023)
election results: David W. PANUELO elected president by Congress; Yosiwo P. GEORGE reelected vice president

Legislative branch
description: unicameral Congress (14 seats; 10 members directly elected in single-seat constituencies by simple majority vote to serve 2-year terms and 4 at- large members directly elected from each of the 4 states by proportional representation vote to serve 4-year terms)
elections: last held on 2 March 2021 (next to be held on March 2023)
election results: percent of vote - NA; seats - independent 14; composition as of July 2022 - men 13, women 1, percent of women 7.1%

Judicial branch
highest courts: Federated States of Micronesia (FSM) Supreme Court (consists of the chief justice and not more than 5 associate justices and organized into appellate and criminal divisions)
judge selection and term of office: justices appointed by the FSM president with the approval of two-thirds of Congress; justices appointed for life
subordinate courts: the highest state-level courts are: Chuuk Supreme Court; Kosrae State Court; Pohnpei State Court; Yap State Court

Political parties and leaders
no formal parties

International organization participation
ACP, ADB, AOSIS, FAO, G-77, IBRD, ICAO, ICRM, IDA, IFC, IFRCS, IMF, IOC, IOM, IPU, ITSO, ITU, MIGA, OPCW, PIF, Sparteca, SPC, UN, UNCTAD, UNESCO, WHO, WMO

Diplomatic representation in the US
chief of mission: Ambassador Akillino Harris SUSAIA (since 24 April 2017)
chancery: 1725 N Street NW, Washington, DC 20036
telephone: [1] (202) 223-4383
FAX: [1] (202) 223-4391
email address: *dcmission@fsmembassy.fm*
website: *https://fsmembassy.fm/*
consulate(s) general: Honolulu, Portland (OR), Tamuning (Guam)

Diplomatic representation from the US
chief of mission: Ambassador Carmen G. CANTOR (since 31 January 2020)
embassy: 1286 US Embassy Place, Kolonia, Pohnpei, FM 96941
mailing address: 4120 Kolonia Place, Washington, D.C. 20521-4120
telephone: [691] 320-2187
FAX: [691] 320-2186
email address: *koloniaacs@state.gov*
website: *https://fm.usembassy.gov/*

Flag description
light blue with four white five-pointed stars centered; the stars are arranged in a diamond pattern; blue symbolizes the Pacific Ocean, the stars represent the four island groups of Chuuk, Kosrae, Pohnpei, and Yap

National symbol(s)
four, five-pointed, white stars on a light blue field, hibiscus flower; national colors: light blue, white

National anthem
name: "Patriots of Micronesia"
lyrics/music: unknown/August Daniel BINZER
note: adopted 1991; also known as "Across All Micronesia"; the music is based on the 1820 German patriotic song "Ich hab mich ergeben", which was the West German national anthem from 1949-1950; variants of this tune are used in Johannes BRAHMS' "Festival Overture" and Gustav MAHLER's "Third Symphony"

National heritage
total World Heritage Sites: 1 (cultural)
selected World Heritage Site locales: Nan Madol: Ceremonial Center of Eastern Micronesia
Economy

Economic overview
Economic activity consists largely of subsistence farming and fishing, and government, which employs two-thirds of the adult working population and receives funding largely - 58% in 2013 – from Compact of Free Association assistance provided by the US. The islands have few commercially valuable mineral deposits. The potential for tourism is limited by isolation, lack of adequate facilities, and limited internal air and water transportation.

Under the terms of the original Compact, the US provided $1.3 billion in grants and aid from 1986 to 2001. The US and the Federated States of Micronesia (FSM) negotiated a second (amended) Compact agreement in 2002-03 that took effect in 2004. The amended Compact runs for a 20-year period to 2023; during which the US will provide roughly $2.1 billion to the FSM. The amended Compact also develops a trust fund for the FSM that will provide a comparable income stream beyond 2024 when Compact grants end.

The country's medium-term economic outlook appears fragile because of dependence on US assistance and lackluster performance of its small and stagnant private sector.

Real GDP (purchasing power parity)
$390 million (2019 est.)
$390 million (2018 est.)
$389 million (2017 est.)
note: data are in 2017 dollars
country comparison to the world: 214

Real GDP growth rate
2% (2017 est.)
2.9% (2016 est.)
3.9% (2015 est.)
country comparison to the world: 137

Real GDP per capita
$3,500 (2019 est.) note: data are in 2017 dollars
$3,500 (2018 est.) note: data are in 2017 dollars
$3,200 (2015 est.)
country comparison to the world: 190

GDP (official exchange rate)
$328 million (2017 est.)

Inflation rate (consumer prices)
0.5% (2017 est.)
0.5% (2016 est.)
country comparison to the world: 42

GDP - composition, by sector of origin
agriculture: 26.3% (2013 est.)
industry: 18.9% (2013 est.)
services: 54.8% (2013 est.)

GDP - composition, by end use
household consumption: 83.5% (2013 est.)
government consumption: 48.4% (2016 est.)
investment in fixed capital: 29.5% (2016 est.)
investment in inventories: 1.9% (2016 est.)
exports of goods and services: 27.5% (2016 est.)
imports of goods and services: -77% (2016 est.)

Agricultural products
coconuts, cassava, vegetables, sweet potatoes, bananas, pork, plantains, fruit, eggs, beef

Industries
tourism, construction; specialized aquaculture, craft items (shell and wood)

Industrial production growth rate
NA

Labor force
37,920 (2010 est.)
country comparison to the world: 199

Labor force - by occupation
agriculture: 0.9%
industry: 5.2%
services: 93.9% (2013 est.)
note: two-thirds of the labor force are government employees

Unemployment rate
16.2% (2010 est.)
country comparison to the world: 180

Unemployment, youth ages 15-24
total: 18.9%
male: 10.4%
female: 29.9% (2014)
country comparison to the world: 85

Population below poverty line
41.2% (2013 est.)

Gini Index coefficient - distribution of family income
40.1 (2013 est.)
country comparison to the world: 63

Household income or consumption by percentage share
lowest 10%: NA
highest 10%: NA

Budget
revenues: 213.8 million (FY12/13 est.)
expenditures: 192.1 million (FY12/13 est.)

Budget surplus (+) or deficit (-)
6.6% (of GDP) (FY12/13 est.)
country comparison to the world: 4

Public debt
24.5% of GDP (2017 est.)
25.3% of GDP (2016 est.)
country comparison to the world: 176

Taxes and other revenues
65.2% (of GDP) (FY12/13 est.)
country comparison to the world: 7

Fiscal year
1 October - 30 September

Current account balance
$12 million (2017 est.)
$11 million (2016 est.)
country comparison to the world: 62

Exports
$88.3 million (2013 est.)
country comparison to the world: 210

Exports - partners
Thailand 73%, Japan 10%, China 9% (2019)

Exports - commodities
fish and fish products, coral/shells, scrap metals, mollusks, office machinery/parts (2019)

Imports
$167.8 million (2015 est.)
$258.5 million (2013 est.)
country comparison to the world: 214

Imports - partners
United States 32%, China 16%, Japan 14%, Taiwan 9%, Philippines 6%, South Korea 6% (2019)

Imports - commodities
poultry meats, netting, broadcasting equipment, various meats, fish products (2019)

Reserves of foreign exchange and gold
$203.7 million (31 December 2017 est.)
$135.1 million (31 December 2015 est.)
country comparison to the world: 174

Debt - external
$93.6 million (2013 est.)
$93.5 million (2012 est.)
country comparison to the world: 194

Exchange rates
the US dollar is used
Energy

Electricity access
electrification - total population: 82% (2018)
electrification - urban areas: 93.5% (2018)
electrification - rural areas: 78.7% (2018)

Coal
Production: 0 metric tons (2020 est.)
Consumption: 0 metric tons (2020 est.)
Exports: 0 metric tons (2020 est.)
Imports: 0 metric tons (2020 est.)

Petroleum
Refined petroleum consumption: 1,200 bbl/day (2019 est.)
Refined petroleum products production: 0 bbl/day (2014)
country comparison to the world: 177

Refined petroleum products - exports
0 bbl/day
country comparison to the world: 182

Natural gas
Production: 0 cubic meters (2021 est.)
Consumption: 0 cubic meters (2021 est.)
Exports: 0 cubic meters (2021 est.)
Imports: 0 cubic meters (2021 est.)
Proven reserves: 0 cubic meters (2021 est.)

Carbon dioxide emissions
177,000 metric tonnes of CO2 (2019 est.)
From coal and metallurgical coke: 0 metric tonnes of CO2 (2019 est.)
From petroleum and other liquids: 177,000 metric tonnes of CO2 (2019 est.)
From consumed natural gas: 0 metric tonnes of CO2 (2019 est.)
country comparison to the world: 204

Energy consumption per capita
0 Btu/person (2019 est.)
country comparison to the world: 202
Communications

Telephones - fixed lines
total subscriptions: 7,000 (2020 est.)
subscriptions per 100 inhabitants: 6 (2020 est.)
country comparison to the world: 195

Telephones - mobile cellular
total subscriptions: 22,000 (2020 est.)
subscriptions per 100 inhabitants: 19 (2020 est.)
country comparison to the world: 214

Telecommunication systems
general assessment: adequate system, the demand for mobile broadband is increasing due to mobile services being the primary and most wide-spread source for Internet access across the region (2020)
domestic: islands interconnected by shortwave radiotelephone, satellite (Intelsat) ground stations, and some coaxial and fiber-optic cable; mobile-cellular service available on the major islands; fixed line teledensity roughly 6 per 100 and mobile-cellular nearly 21 per 100 (2019)
international: country code - 691; landing points for the Chuuk-Pohnpei Cable and HANTRU-1 submarine cable system linking the Federated States of Micronesia and the US; satellite earth stations - 5 Intelsat (Pacific Ocean) (2019)

Broadcast media
no TV broadcast stations; each state has a multi-channel cable service with TV transmissions carrying roughly 95% imported programming and 5% local programming; about a half-dozen radio stations (2009)

Internet country code
.fm

Internet users
total: 39,834 (2019 est.)
percent of population: 35% (2019 est.)
country comparison to the world: 202

Broadband - fixed subscriptions
total: 6,000 (2020 est.)
subscriptions per 100 inhabitants: 5 (2020 est.)
country comparison to the world: 183
Transportation

Civil aircraft registration country code prefix
V6

Airports
total: 6 (2021)
country comparison to the world: 174

Airports - with paved runways
total: 6
1,524 to 2,437 m: 4
914 to 1,523 m: 2 (2021)

Roadways
note - paved and unpaved circumferential roads, most interior roads are unpaved

Merchant marine
total: 38
by type: general cargo 19, oil tanker 4, other 15 (2021)
country comparison to the world: 127

Ports and terminals
major seaport(s): Colonia (Tamil Harbor), Molsron Lele Harbor, Pohnepi Harbor
Military and Security

Military and security forces
no military forces; Federated States of Micronesia National Police (includes a maritime wing)
Note: defense is the responsibility of the US
Transnational Issues

Disputes - international
none identified

Illicit drugs
major consumer of cannabis

Acronyms and Abbreviations

°	Degree(s) – of temperature: °C = Celsius or °F = Fahrenheit; or latitude: °N/S/E/W = North / South / East / West
$	Dollar(s) (of the U.S.)
ACP	Organisation of African, Caribbean and Pacific States
ADB	Asian Development Bank
AIDS	Acquired immunodeficiency syndrome
AOSIS	Alliance of Small Island States
APAN	All Partners Access Network
BHA	Bureau for Humanitarian Assistance (of USAID)
CADRE	Climate Adaptation, Disaster Risk Reduction, and Education
CCA	climate change adaptation
CDC	Centers for Disease Control and Prevention
CDEOC	Chuuk Disaster and Emergency Operation Center
CFE-DM	Center for Excellence in Disaster Management and Humanitarian Assistance
cm	centimeter(s)
CNMI	Commonwealth of the Northern Mariana Islands (U.S. territory)
COFA	Compact of Free Association
COM	College of Micronesia or Chief of Mission
COPD	Chronic obstructive pulmonary disease
COVID-19	Coronavirus Disease 2019
CPUC	Chuuk Public Utilities Corporation
CREWS	Climate Risk and Early Warning Systems
CRI	Climate Risk Index
CRS	Catholic Relief Services
CWG	Coordination Working Group
DAC	Disaster Assistance Coordinator
DAEF	Disaster Assistance Emergency Fund
DCO	Disaster Coordination Office(r)
DECEM	Department of Environment, Climate, and Emergency Management
DKI-APCSS	Daniel K. Inouye Asia-Pacific Center for Security Studies
DMO	Disaster Management Officer
DoD	Department of Defense (of the U.S.)
DOE	Department of Education
DRR	disaster risk reduction
DRRP	Disaster Relief and Reconstruction Plan
EM-DAT	Emergency Events Database
ENSO	El Niño Southern Oscillation
EPA	Environment Protection Authority
FANGO	FSM Alliance of NGOs
FAO	Food and Agriculture Organization
FEMA	Federal Emergency Management Agency (of the U.S.)

FMI	Fisheries and Maritime Institute
FSM	Federated States of Micronesia
FSMTC	FSM Telecommunications Corporation
FSS	Federated States Ship
FY	Fiscal Year
GCF	Green Climate Fund
GDACS	Global Disaster Alert and Coordination System
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
GHG	greenhouse gas
GWh	Gigawatt-hours
HADR	Humanitarian aid and disaster relief
HAV	Hepatitis A virus
HCT	Humanitarian Country Teams
HDX	Humanitarian Data Exchange
HFA	Hyogo Framework for Action
HIV	Human immunodeficiency virus
IATA	International Air Transport Association
IBRC	International Bank for Reconstruction and Development
ICAO	International Civil Aviation Organization
ICRC	International Committee of the Red Cross
ICRM	Institute of Catastrophe Risk Management
IDA	International Development Association
IDP	Infrastructure Development Plan
IFC	International Finance Corporation
IFRC	International Federation of Red Cross and Red Crescent Societies
IHL	International Humanitarian Law
IMF	International Monetary Fund
IMPACT	Inclusive Mitigation and Preparedness in Action
INDOPACOM	Indo-Pacific Command (of the U.S. Armed Forces)
INFORM	Index for Risk Management
IOC	International Olympic Committee
IOM	International Organization for Migration
IP	Internet Protocol
IPU	Inter-Parliamentary Union
ITSO	International Telecommunications Satellite Organization
ITU	International Telecommunications Union
JDA	Joint Damage Assessment
JRM	Joint Risk Management
JSAP	Joint State Action Plan on Disaster Risk Management and Climate Change
KIRMA	Kosrae Island Resource Management Authority
km / km^2	kilometer(s) / square kilometer(s)

KUA	Kosrae Utility Authority
kW / kWh	kilowatt(s) / kilowatt-hour
m / m^2	meter(s) / square meter(s)
Mbps	megabit per second
MCT	Micronesian Conservation Trust
MIGA	Multilateral Investment Guarantee Agency
mm	millimeter(s)
MRCS	Micronesia Red Cross Society
MW	megawatt(s)
NAP	National Adaptation Plan
NCD	Noncommunicable disease
NDC	National Disaster Committee or Nationally Determined Contributions
NDCT	National Disaster Coordination Team
NDRP	National Disaster Response Plan
NEOC	National Emergency Operations Center
NGO	non-government organization
NOAA	National Oceanic and Atmospheric Administration (of the U.S.)
NTMC	New Tokyo Medical College
NWS	National Weather Service
OCHA	Office for the Coordination of Humanitarian Affairs (of the UN)
OEEM	Office of Environment and Emergency Management (now DECEM)
OFDA	Office of Foreign Disaster Assistance (of USAID, now BHA)
OPB	Office of Planning and Budget
OPCW	Organisation for the Prohibition of Chemical Weapons
PATS	Pohnpei Agricultural and Trade School
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PDA	preliminary damage assessment
PDC	Pacific Disaster Center
PDD	Presidential Disaster Declaration
PHT	Pacific Humanitarian Team
PICL	Pacific Islands Conference of Leaders
PICT	Pacific Island Countries and Territories
PIF	Pacific Islands Forum
PIFACC	Pacific Islands Framework for Action on Climate Change
PIHOA	Pacific Islands Health Officers Association
PNG	Papua New Guinea
POLHN	Pacific Open Learning Health Net
PRC	People's Republic of China
PTWC	Pacific Tsunami Warning Center
PUC	Pohnpei Utilities Corporation
RCP	Representative Concentration Pathway
RFA	Pacific Disaster Risk Reduction and Disaster Management Framework for Action
RMI	Republic of the Marshall Islands

SDC	State Disaster Committee
SDCT	State Disaster Coordination Team
SEOC	State Emergency Operations Center
SIDS	Small Island Developing States
Sparteca	South Pacific Regional Trade and Economic Co-operation Agreement
SPC	Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
TB	Tuberculosis
UCT	Underwater Construction Team
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDAC	United Nations Disaster Assessment and Coordination
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Program
UNDRR	United Nations Office for Disaster Risk Reduction
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
UNSCR	United Nations Security Council Resolution
U.S.	United States
USAID	United States Agency for International Development
USAPI	U.S.-Affiliated Pacific Island
USDA	U.S. Department of Agriculture
V	volt(s)
WASH	water, sanitation, and hygiene
WFO	Weather Forecast Office
WFP	World Food Program
WHO	World Health Organization
WMO	World Meteorological Organization
WPS	Women, Peace, and Security
WSO	Weather Service Office
YRMN	Yap Risk Management Network
YSPSC	Yap State Public Service Corporation

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