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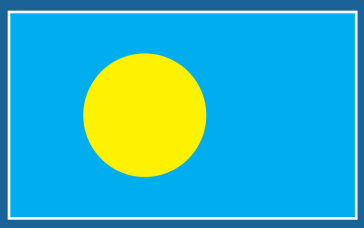

PALAU

Disaster Management Reference Handbook

January 2023

Disaster Management Reference Handbook Series

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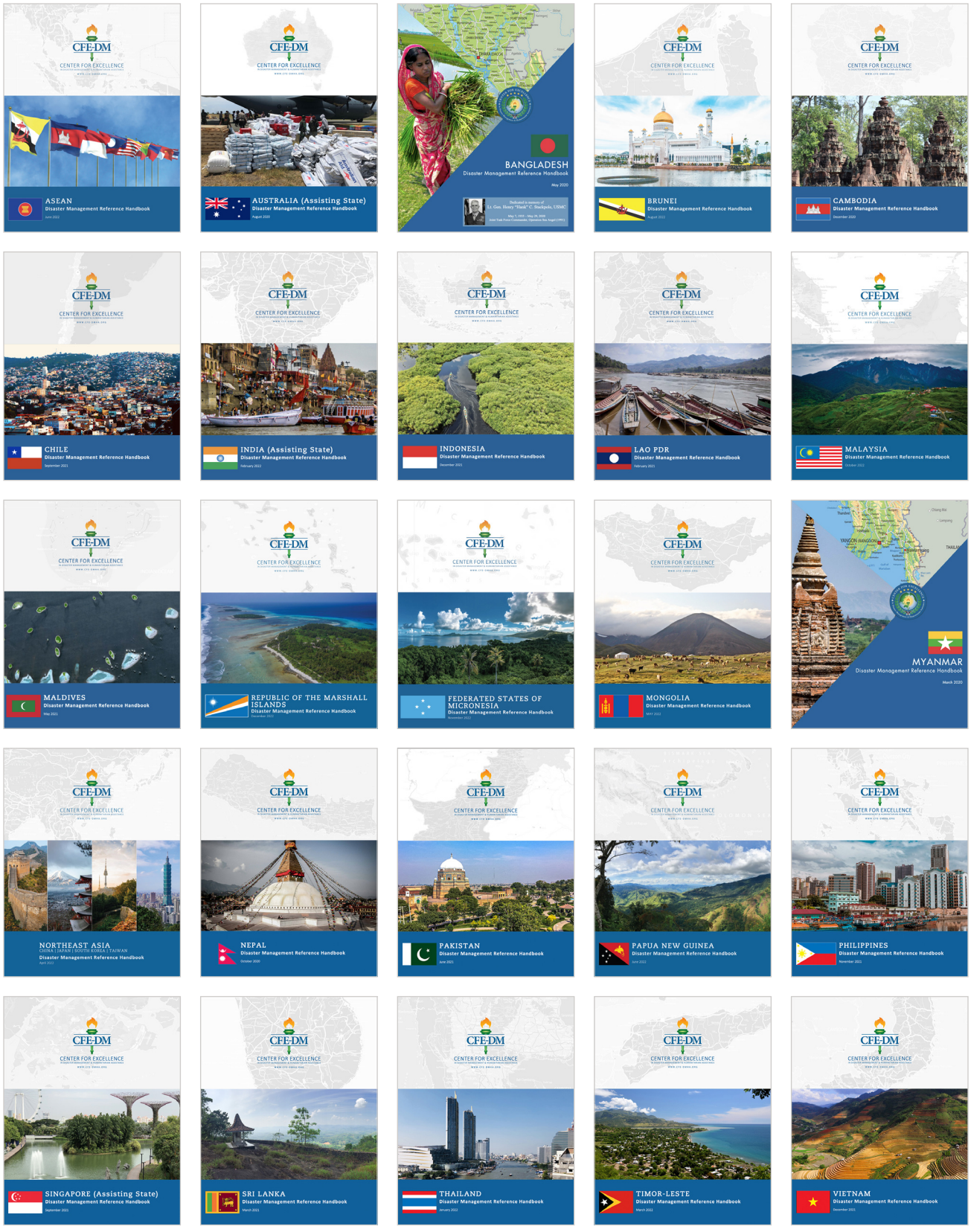

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Front Cover

Koror, Palau. Photo by Annette Bouvain. https://flic.kr/p/hAnM3e

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).

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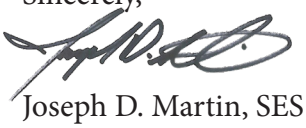
Letter from the Director

Palau is feeling impacts of climate change, the practical results of which include compromised water resources and increased threats to vital infrastructure, settlements, and facilities that support the livelihoods of island communities. In the face of this challenge, Palau is striving to make development economically, socially, and environmentally sustainable.

The United States (U.S.) and Palau already have deep and long-standing ties based on shared history, values, and aspirations. Even before the September 2022 elaboration of the U.S.-Pacific Island Partnership, Palau was an integral part of cooperation and activities the U.S. undertook to help protect and conserve resources, mitigate climate change, and bolster sustainable social development throughout the broader region. The upshot of this long-standing cooperation was that, in April 2021, in the aftermath of Typhoon Surigae, the U.S. Coast Guard was swiftly deployed to help deliver assistance to impacted Palauan communities. The groundwork for this cooperation was laid by Palau's participation in various exercises and events that emphasize humanitarian assistance and disaster relief (HADR). In particular, during Pacific Partnership 2022 and 2021, we in the Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) delivered HADR workshops to Palauan personnel to build upon years of efforts by the U.S. military's Civic Action Team (CAT) Palau and exercises COPE North and Koa Moana.

To sustain progress made by the aforementioned missions and partnerships, this Palau Disaster Management Reference Handbook focuses on Palau's disaster management framework and disaster risk reduction strategies. It also provides an overview of the country's government, geography, demographics, social cultural practices, and history of natural disasters. It is hoped that this handbook will serve as an initial source of information for individuals preparing for disaster management, response, and risk reduction activities or immediate deployment with Palauan partner responders in a crisis.

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.

Contact Information

Center for Excellence in Disaster Management and Humanitarian Assistance
456 Hornet Ave
JBPHH, HI 96860-3503
Telephone: +1 (808) 472-0518
https://www.cfe-dmha.org

EXECUTIVE SUMMARY

With almost 1,500 kilometers (km; 1,000 miles) of coastline, the Republic of Palau (Palau) is vulnerable to droughts, typhoons, sea level rise, coastal erosion, and storm surges linked to climate change.[1] Disasters have affected the small island nation, evidenced by the events of 2012 and 2013, when Super Typhoon Bopha and Super Typhoon Haiyan swept through[2] causing significant wind damage to trees, homes, and structures, saltwater intrusion to agriculture, alterations to lagoon patterns, and storm surge flooding to coastal areas.[3] In 2016, Palau was affected by severe drought. More recently, in April 2021, Typhoon Surigae damaged an estimated 1,500 houses as well as critical water and power infrastructure, and led to losses across key sectors including health, public works, communication, agriculture, and education.[4]

The region is experiencing more frequent and severe typhoons, sea level rise, and other climate change-related impacts. Climate change is expected to disrupt many aspects of life in Palau, and populations that are already vulnerable – e.g., children, women, individuals with disabilities, and others – are at greater risk from extreme weather and climate events. In Palau, both sea level rise and more frequent and intense rainfall events will produce flooding in coastal and urban areas. What is important to recognize is that a significant portion of the population and infrastructure is located in low-lying coastal areas; furthermore, high tidal flooding has significantly affected homes and infrastructure.[5] Knowing this information, Palau has focused on reducing the risk of disasters at all levels, but particularly at the community level.

The Palau Climate Policy has been finalized and is used as a reference for national-, state-, and community-level planning. Efforts are also focused by the National Emergency Committee (NEC) and the National Emergency Management Office (NEMO) on developing the State Disaster Risk Management Plans (SDRMP) that also adopt disaster risk reduction (DRR) processes.[6]

Palau has no disaster management (DM) legislation in place to address disaster risks. Rather, the Palau National Disaster Risk Management Framework 2010 (NDRMF) (amended in 2016) outlines the institutional arrangements for coordination and collaboration in preparing for, responding to, and recovering from the impact of any hazard to Palau. It also focuses on the strengthening of national disaster risk management structures and mechanisms to incorporate DM and climate change adaptation (CCA) into the national budget and plans.[7] At the national level, the NDRMF is being revised to include the integration of DRR strategies within the budgetary allocations and planning.[8]

With regards to national coordination structure, the Disaster Executive Council (DEC) provides strategic direction and oversight, and the NEC is responsible for operational management. It consists of the NEMO and the Central Control Group (CCG). Overall guidance is provided by the DEC during an emergency or disaster, and the NEC carries out management and coordination with support from NEMO.[9]

Palau is making efforts to make development economically, socially, and environmentally sustainable. Over the years since independence, Palau has established governance and infrastructure and evolved from a low-income country in 1994 to reach high-income status in 2017. There are many Sustainable Development Goal (SDG) targets that Palau has obtained, is on track to realize, or requires additional efforts to maintain good progress. Key achievements include universal access to quality health care, education, poverty reduction, and enduring regional and global partnerships. Nonetheless, global economic forces and climate change remain challenges to the small island developing state.[10]

COUNTRY OVERVIEW

Palau is made up of nearly 600 islands in the Western Pacific. However, it is home to fewer than 18,000 people, of whom approximately 14,000 reside in Koror and Airai states, the economic hub of the country. A presidential republic, Palau entered into free association with the U.S. in the mid-1990s and continues to rely on COFA grants and financial aid to make up for the economic constraints placed on the country by its small population and land mass, geographic remoteness, narrow resource and export bases, and exposure to external shocks.

History

While the exact date of the arrival of people in the islands that make up modern Palau remains unknown, it is thought probable that they first arrived as long ago as 2,500 BCE.[11] Carbon dating of artifacts from the oldest known settlements on the Rock Islands and areas of Babeldaob suggests community formation dating to 1,000 BCE.[12] Several of the Rock Islands are shown in Photo 1.[13] The islands of modern Palau were inhabited by successive waves of Malays from Indonesia, Melanesians from New Guinea, Philippine natives, and some Polynesians from outlying Polynesian islands in Micronesia. These waves resulted in Palau having a diverse population that, from the late 18th century, was augmented by the arrivals of Europeans, Japanese, and U.S. citizens.

For more than two millennia, the people of Palau built a vital culture, attested to by the remains of large hillside terraces, stone structures, and megaliths on Babeldaob. The first extensive contact between Palauans and Westerners followed the 1783 shipwreck of the British East India Company's *Antelope*[14] on a reef between Koror and Peleliu. With the assistance of Koror's High Chief, the crew spent three months in Ulong where they rebuilt their ship.[15] An account of the interactions among the shipwrecked crew and locals was published in 1788 and fueled European interest in and fascination with the Pacific islands.[16] Britain would become Palau's main trading partner,[17] but, until the end of the 19th century, Palau still saw only occasional visits by whalers and traders, who may have thought they had only left some beachcombers and firearms, but they also transmitted diseases to islanders that led to the deaths of many of them.[18]

Foreign governance of the islands formally began in 1885 when Pope Leo XIII asserted Spain's rights over the "Caroline Islands," which included the islands of both modern Palau and the Federated States of Micronesia. Based on the Pope's assertion, the Roman Catholic church was established in the islands, a founding that also introduced the Roman alphabet[19] although the orthography of Palauan would not be standardized until the 1970s.[20] In 1899, Spain

Photo 1: A View of Palau's Rock Islands, Koror State

sold the Carolines to Germany, which established an organized program to exploit the islands' people and natural resources[21] by developing phosphate mines and coconut plantations.[22] Although the Japanese navy expelled German authorities at the beginning of World War I,[23] the islands were not formally ceded to Japan until the finalization of the Treaty of Versailles in 1919. The influence of Japan's presence in Palau was immense as it shifted the economy from subsistence to market activities and removed property ownership from the clan in favor of individuals. In 1922, Koror became the administrative center for Japan's South Pacific possessions,[24] and by 1935, Koror was home to four times as many Japanese residents as locals.[25]

Japan's military fortifications and naval facilities in Palau were targeted by allied attacks during World War II, and some Palauan islands were the scenes of fierce fighting between U.S. and Japanese forces.[26] Photo 2 shows a Japanese storage bunker – now the Peleliu War Museum – that was damaged by artillery fire during the Battle of Peleliu (September – November 1944).[27] Following World War II, in 1947, the Carolines, Marianas, and Marshall Islands became the United Nations (UN) Trust Territory of the Pacific Islands (TTPI) under U.S. administration; Palau was named one of six island districts of the TTPI. As part of its mandate, the U.S. was tasked with improving Palau's infrastructure and educational system to prepare it to become self-sufficient.[28] In 1979, the TTPI began to splinter with both Palau and the Marshall Islands opting not to become parts of a larger, federated Micronesian state.[29]

In 1981, islanders adopted a constitution and participated in elections. The country became internally self-governing that year. Subsequently, Palau signed a Compact of Free Association (COFA) with the United States in 1982, but the required number of voters (75%) failed to approve the text via referendum. The Compact required that the United States remain responsible for external security and defense and that it provide financial assistance for Palau, but conflict arose over Palau's constitutional prohibition on the operation of U.S. nuclear-powered or nuclear-armed vessels and aircraft within the jurisdiction of Palau. According to the terms of the Compact, the United States reserved this right as well as the right to neither confirm nor deny the presence or absence of such weapons in Palau. Several attempts were made to revise Palau's constitution, revise the Compact, and secure Palauan approval. Meanwhile, the United States dissolved the TTPI in 1986.[30] In 1987, Palau voted to amend its constitution to allow approval of the Compact by a simple majority, rather than by 75%. In a subsequent referendum, 73% of voters supported the draft Compact. Still, the Supreme Court ruled in 1988 that the process had been unconstitutional.[31]

In addition to two more failed referenda to approve the COFA,[32] Palau's internal politics were troubled during the latter 1980s and early 1990s amidst pressure from Washington and

Photo 2: A Japanese Bunker Now Houses the Peleliu War Museum

political scandals.[33] In June 1985, political violence resulted in the assassination of the first president, Haruo I. Remeliik. That August, Lazarus E. Salii was elected to serve out the remaining three and one-half years of Remeliik's four-year term, but Salii committed suicide in August 1988.[34] He was succeeded by Ngiratkel Etpison, who served until 1992 when fresh Presidential elections brought Kuniwo Nakamura to the first of his two successive four-year Presidential terms.[35] Also in 1992, voters approved an amendment that reduced to a simple majority the popular vote required to override the anti-nuclear provision of the constitution, a vote that cleared the way for approval of the Compact[36] in 1993.[37] Palau achieved self-government in free association with the United States on 1 October 1994.[38] The country joined the UN that December.[39]

In 2000, President Nakamura's former Vice-President Tommy Remengesau won presidential elections; he would be re-elected in 2004. During Remengesau's second term, in 2006, Palau would begin to move its government institutions from Koror to a new capital, Ngerulmud, in Melekeok state.[40] Although the new capital complex to house the executive, legislative, and judicial branches of the national government has been completed, it is among the only buildings in the new capital, which is home to only a few hundred people.[41] Elections in 2008 brought Johnson Toribiong to the Presidency, but 2012 polls brought Tommy Remengesau back into power[42] for two fresh terms. During President Remengesau's final term, the Compact Review Agreement of 2018 extended certain financial provisions of the COFA through September 2024.[43] In 2020, elections brought Surangel Whipps, Jr. to power.[44]

Culture and Demographics

Palau has a diverse population. From about 3,000 years ago, the islands began to be inhabited by Malays originating from Indonesia, Melanesians from New Guinea, Philippine natives, and Polynesians from Micronesia. Numerous stone ruins, hillside terraces, and megaliths on Babeldaob give evidence of historic culture before contact with European explorers.

Palau is a matriarchal and matrilineal society. Women predominantly own land, money, and titles. In the traditional Palauan society, gender roles were well defined. Men were warriors and fishermen. Today, they continue their traditional tasks in rural areas; however, they also have taken on political office and participate in business as part of Palau's modern society.[45] Women were and remain engaged in household chores, childcare, shellfish collection, and farming.

Within Palauan society, respect towards elders is highly valued; the head of the family is usually the eldest male or female of the household.[46] The Palauan culture values respect for all things living and non-living, consideration for the well-being of others, and striving for knowledge and education. Traditional Palauan homes were known as *bais*. Each village had its own or several bais consisting of wood and decorated with artwork depicting the stories of Palauan historical legends and events. The roof is woven from nipa leaves and tropical woods are used across the floors and walls, as illustrated in Photo 3. Cultural and religious importance is linked to the bais or meetinghouse. Symbols such as roosters, money birds, spiders, and bats are painted on the beams. Many traditional Palauan customs are still practiced today, including the First Birth Ceremony.[47]

Photo 3: Traditional Palauan Meeting House (Bais)

Palau conducted its most recent census in 2020, and it counted 17,614 people.[48] Palau's population is divided into the following segments:[49]

- 0-14 years: 18.68% (male 2,090/female 1,961)
- 15-24 years: 15.86% (male 1,723/female 1,716)
- 25-54 years: 45.33% (male 6,026/female 3,804)
- 55-64 years: 10.68% (male 853/female 1,463)
- 65 years and over: 9.45% (male 501/female 1,548) (2020 est.)

Ethnic Makeup

The ethnic composition of Palau's population is Palauan (Micronesian with Malayan and Melanesian admixtures) 73%, Carolinian 2%, Asian 21.7%, Caucasian 1.2%, and other 2.1%.[50]

Key Population Centers

Palau is comprised of 16 states: Aimeliik, Airai, Angaur, Hatohobei, Kayangel, Koror, Melekeok, Ngaraard, Ngardmau, Ngeremlengui, Ngatpang, Ngchesar, Ngarchelong, Ngiwal, Peleliu, and Sonsorol. Koror has the largest number of residents (11,400) with Airai coming second (2,529).[51] The locations of Angaur, Peleliu, and Koror states as well as the capital city (Melekeok) can be seen in Figure 1.[52]

Five of the 16 states are located in outlying areas. The population variability between states ranges from less than 100 (Sonsorol) to a few thousand (Koror).[53]

Language

English and Palauan are the most common languages spoken in Palau. The 2020 census asked if residents speak Palauan at home. The results indicated that 41% (7,205) of residents spoke Palauan at home. The census also reported that 29% (5,194) of residents spoke another language in addition to Palauan, with the majority using English. Other languages measuring 2% or less were Micronesian, Philippine languages, and Japanese.[54]

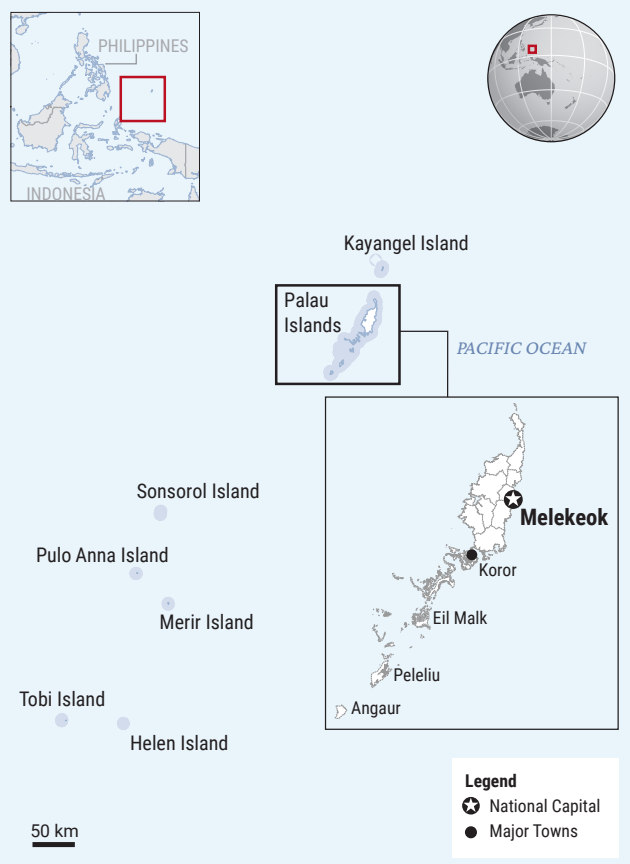


Figure 1: Map of Palau Islands (2022)

Religion

Religions present in Palau, taken from the most recent 2020 census include:[55]

- Catholic 47% (6,363 persons)
- Evangelical 25% (3,335)
- Seven Day Adventist 5% (676)
- Assembly of God 1% (113)
- Baptist 1% (71)
- Muslim 4% (661)
- Mormon 1% (112)
- Modekngei (689) 5% (indigenous to Palau); and
- Other 11% (1,546) (several smaller denominations).

Vulnerable Groups

This section will discuss some of Palau's vulnerable groups, which include women, children, and persons with disabilities. Vulnerability is the degree to which a population,

individual, or organization is unable to anticipate, cope with, resist, and recover from the impacts of disasters.[56] Fortunately, Palau has taken action to train staff (21 women and 21 men) from the public sector and civil society organizations who engage in national and community disaster risk management to integrate a gender, age, disability, and cultural perspective in policies and practices of disaster risk management. In February 2021, Palau's NEMO, Bureau of Aging, Disability, and Gender (BADG), and the UN Development Programme (UNDP), in partnership with Palau Red Cross, the International Federation of Red Cross and Red Crescent Societies (IFRC), the Pacific Community (SPC), and OMEKESANG Association of Palau, a civil society organization working for the rights of persons with disabilities, offered a 2-day workshop that emphasized the importance of protection, gender and social inclusion, and integrating these aspects in DM.[57]

Women

Discrimination against women and gender inequality are regarded as the most prevalent and pressing social issues in the Pacific. Violence against women and girls often escalates in times of emergency and undermines recovery efforts and progress towards the SDGs. Under the Constitution of Palau, women are afforded the same opportunities as men, although there is political, economic, and social inequality. Cultural rights are also not equal. In addition, domestic violence occurs, yet there is a lack of effective enforcement of existing protective legislation on domestic violence, prostitution, and human trafficking. Palau signed the Convention on the Elimination of all forms of Discrimination against Women (CEDAW) but has not ratified it yet. There are societal elements that can hinder women's social, economic, and political participation. Gender stereotypes define what women should do and be; these stereotypes can inform and reinforce formal and informal restrictions on women's active participation in decision-making in the home, political representation, access to their earnings, and owning land and businesses.[58]

Children

According to the Constitution of Palau, the government has a duty to protect children from exploitation and include safeguards against abuse, neglect, exploitation, drugs, and pornography. In addition, children with special needs have the right to receive special care.[59] UN estimates suggest that 7% of children in Palau have low birthweight, which is one of the lowest prevalence rates of the Pacific Island Countries and Territories (PICT). Tobacco use and obesity amongst pregnant women is a key risk factor contributing to low birthweight in Palau. Palau has limited quantitative data on child protection, and therefore it is difficult to gather a clear picture of the extent of violence, abuse, neglect, and exploitation of children. An older Child Protective Baseline Survey found that fathers were the main perpetrators in 7% of cases where children were reported to be physically abused in their homes. Of adults who engaged in or observed physical punishment, 48% said that it was done to educate the child, 21% because the child had made a mistake, and 14% was to make children respect adults. The minimum age for marriage is 16 for females, but parental permission is required until the age of 18. The minimum age for marriage for males is 18. The age for consent to sexual activity is 15 with no gender distinction. These rules do stand in contrast with key global child protection-related SDG targets. In addition, sexual abuse appears to be a concern in Palau. In one Family Health and Safety Study, almost 12% of respondents indicated that they had experienced sexual abuse before they were 15 years old, mostly when they were 10-14 years old (55%) or 5-9 years (41%). Male family members (fathers, stepfathers, and other male relatives) were noted as the most common perpetrators (76%). Targets and indicators for SDGs 5.2 and 5.3 are shown in Table 1.[60]

Disabled Persons

Almost 2.4% of the Palau population have reported living with disabilities. For example, a total of 748 people reported facing some

SDG	Target	Indicators
5.2	Eliminate all forms of violence against women and girls in public and private spheres, including trafficking and sexual and other types of exploitation	Proportion of ever-partnered women and girls aged 15 years and older subjected to physical, sexual, or psychological violence by a current or former intimate partner in the previous 12 months, by form of violence and by age
		Proportion of women and girls aged 15 years and older subjected to sexual violence by persons other than an intimate partner in the previous 12 months, by age and place of occurrence
5.3	Eliminate all harmful practices, such as child, early, and forced marriage and female genital mutilation	Proportion of women aged 20–24 years who were married or in a union before age 15 and before age 18
		Proportion of girls and women aged 15–49 years who have undergone female genital mutilation/cutting, by age

Table 1: Key Child Protection-Related Sustainable Development Goals (SDG)

difficulties in seeing, 544 people reported facing some difficulties in mobility, and 515 people reported facing some difficulties with memory. The highest proportion of persons with disabilities are among the population aged 50 years and above (6.6%). The highest prevalence of disability for the population as a whole (4.9%) is in East Babeldaob, followed by Airai (2.8%) and West Babeldaob (2.4%). Disabled persons in Palau are less likely to acquire education at the same level as their counterparts without disabilities; this difference is more visible in outlying states where disabled persons have low literacy rates - 25%.

Economics

Palau, like many PICTs, is constrained in economic terms by its small population and land mass, geographic remoteness, narrow resource and export bases, and exposure to external shocks, the last exemplified by the Coronavirus Disease 2019 (COVID-19) pandemic during which they country was able to keep the spread of the virus at bay but could not stop the devastating economic impacts of a global tourism industry that came to a halt. Indeed, Asian Development Bank (ADB) estimates suggest that pandemic impacts on the economy will last through 2023 or 2024.[61] However, even if pandemic-era supply chain and travel restriction kinks relax, other events and trends will have knock-on effects. For example, as a small, price-taking country, Palau will continue to struggle with high fuel prices linked to disruptions in the global oil and gas markets, some linked to Russia's invasion of Ukraine. Moreover, as the international public becomes more aware of or more cautious of climate change, long-distance travel to remote tourism spots like Palau could become either too costly or too wasteful, thereby eroding the audience susceptible to Palau's tourism marketing.

Palau's economy is based on tourism, fishing, and subsistence agriculture, which together make up much of the country's national revenue. Travel restrictions related to COVID-19 severely affected the tourism industry. Palau relies heavily on aid linked to the COFA with the United States.[62] The COFA provides U.S. direct assistance, subsidies, and other financial support. In 2019, U.S. assistance to Palau was US$32 million, roughly one-quarter of government spending. Palau receives additional aid from Australia, Japan, Taiwan, and international organizations.[63]

Development indicators and data for Gross Domestic Product (GDP) and Gross National Income (GNI) for 2010-2019 are represented in Table 2.[64]

The government is the country's largest employer, accounting for approximately 30% of the workforce, and the tourism sector is Palau's biggest economic driver, contributing an estimated 40% to GDP. Apart from tourism, commercial industries include wholesale/retail trade, business services, commercial fisheries, and construction. Fish, coconuts, breadfruit, bananas, and taro cultivation constitute the subsistence sector. Primary exports include frozen fish (tuna), tropical aquarium fish, ornamental clams and corals, coconut oil, and handicrafts. Palau continues to rely heavily on

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019[a]
Production and Income Earned										
Growth of Output (annual change as % of GDP)[b]	-0.5	5.7	2.1	-1.4	5.4	8.6	-0.4	-2.4	5.1	0.3
GDP per capita, 2015 constant prices ($ per FY)	12,802	13,918	14,420	14,103	15,026	15,880	15,676	15,352	16,304	15,688
GNI per FY ending 30 September ($ million at current prices)[b]	199.4	209.8	229.8	243.4	262.1	301.0	322.5	306.3	306.9	289.5
GNI per capita ($)	10,900	11,700	13,000	14,000	15,100	17,000	18,000	17,100	17,100	17,100
Structure of Output (% of GDP at current basic prices)[b]										
Agriculture (%)	4.2	4.2	4.1	4.1	3.7	3.3	3.3	3.6	3.5	3.4
Industry (%)	11.0	9.7	9.4	8.9	8.5	8.9	10.3	9.2	9.4	10.4
Services (%)	84.8	86.1	86.5	87.0	87.8	87.8	86.4	87.2	87.1	86.2
Gross Fixed Capital Formation (%)[b]										
% of GDP	43.7	54.3	55.6	49.3	71.8	76.2	80.4	86.1	78.2	85.2
Trade (%)										
Exports of goods and services[b]	91.4	109.2	127.5	131.9	148.0	163.5	155.1	142.6	133.5	117.5
Imports of goods and services[b]	141.5	167.4	191.4	196.4	223.5	211.9	216.7	222.9	219.0	221.0

a This column consists of provisional, preliminary estimates.
b The values in these rows are taken from the Asian Development Bank (ADB) publication Key Indicators for Asia and the Pacific.

Table 2: Key Economic Development Indicators for Palau (2010-2019)

imports and continues to run trade deficits.

Most of the major industries are controlled by state-owned or quasi-state enterprises that cover utilities, telecommunications, and the national bank. Professional, medical, management, and other special labor skills are in high demand. Given the scarcity of residents who are qualified, Palau allows investors to employ non-resident workers provided they agree to cover the cost of repatriation and that they hire and train at least one citizen to perform the same work. There are an estimated 4,300 estimated foreign workers in the country.[65]

Government

Each of the 16 states has its own constitution, which governs governmental operations and arrangements. There are also traditional systems within each state and within hamlets that govern matters of tradition and customs. There are traditional leadership and clan systems, and they have representatives in state legislatures.[66]

Palau approved its constitution in 1981. It lays out a constitutional government in free association with the U.S. Palau has three branches of government: the executive, the legislature, and the judiciary. The Olbiil Era Kelulau (National Congress) includes the Senate and the House of Delegates.[67] The President is both the head of state and the head of government and serves a four-year term.[68] Executive and legislative branches are elected for four-year terms, and voting is open to those 18 years of age and older. The Palau judiciary consists of the Supreme Court, with both trial and appellate divisions, the Court of Common Pleas, and the Land Court. Palau has no armed forces as the U.S. is responsible for national defense. Palauans can and do volunteer to serve in the U.S. armed forces.[69]

Environment

Geography

Palau is made up of 586 volcanic and limestone islands in the Western Pacific Ocean. The main archipelago covers a 200-km (124-mile) range from Kayangel atoll in the north to Angaur atoll in the south. Palau is home to the largest rainforests in the Micronesia region. It has mangrove forests, seagrass beds, and barrier reefs.[70] Photo 4 depicts barrier and fringing reefs.[71]

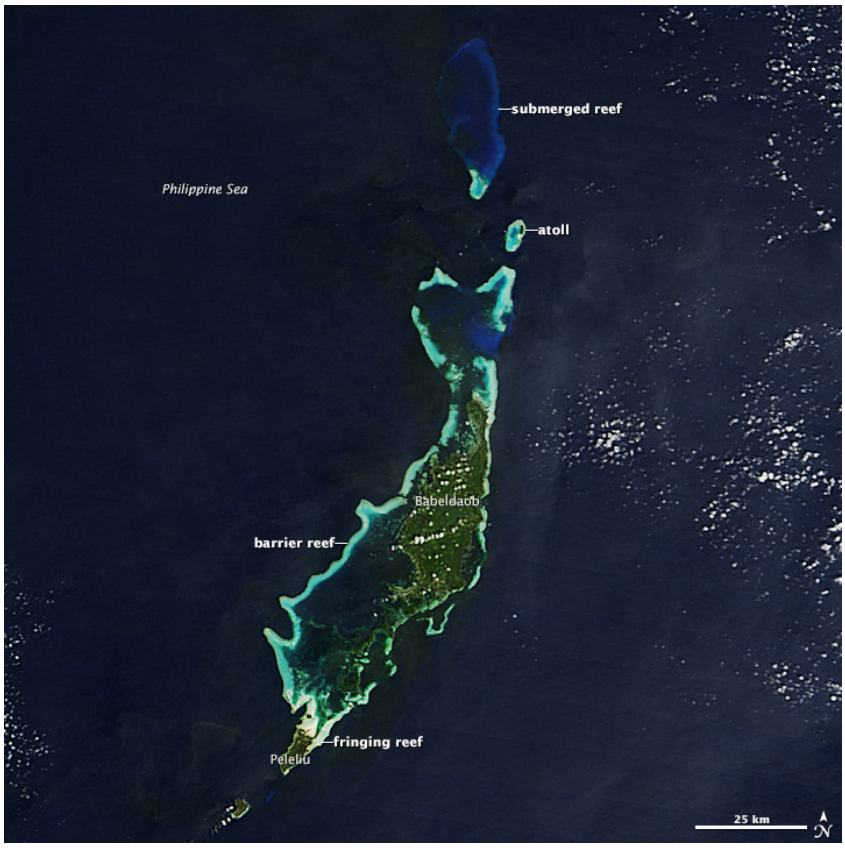


Photo 4: Palau Reefs

Borders

There are no borders as Palau is a collection of islands. Guam is 1,330 km (830 miles) to the northeast, and the Philippines is 890 km (550 miles) to the west.[72]

Climate

The climate is hot and humid. Average relative humidity is 82% with the mean daily air temperature averaging 28°C (82°F). There is little seasonal variability in temperature, with a difference of only 0.8°C (1.4°F) between Palau's hottest and coldest months. The main wet season is between May and October. Figure 2 represents the average monthly temperature as well as rainfall in Palau during the period 1991-2020.[73]

El Niño poses a major drought threat for Palau. From November to April, rainfall during an El Niño year tends to be lower than average. After August, the monthly rainfall begins to rapidly drop, sinking to well below average in four months' time. Very intense El Niño events caused severe droughts in 1982 and 1997.[74]

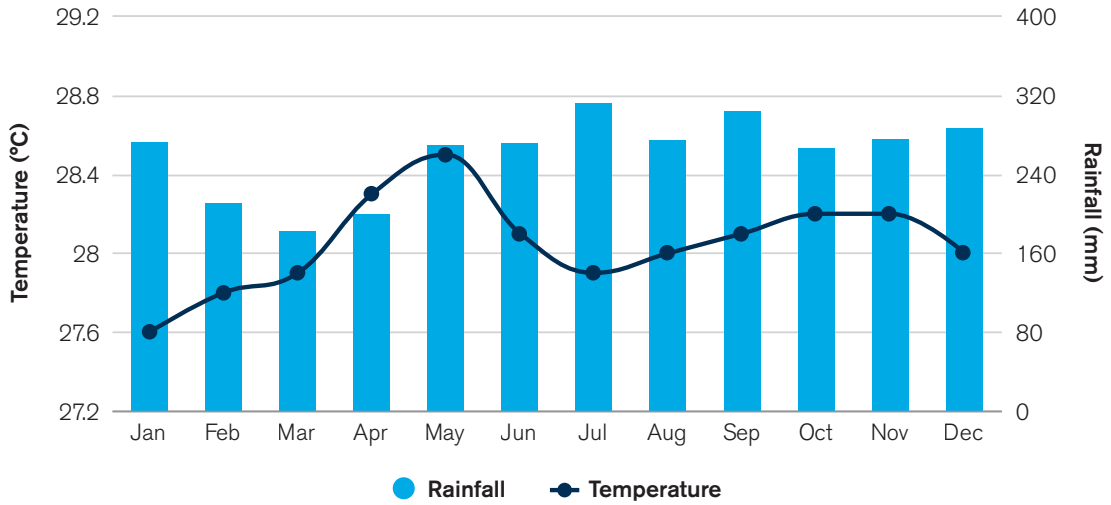


Figure 2: Average Monthly Temperature and Rainfall (1991-2020)

DISASTER OVERVIEW

Palau is outside the main Pacific tropical cyclone tracks, but occasional strong storms with high winds cross the islands between July and November. El Niño events tend to extend the dry season from its usual 1.5 months to 2-3 months. On the contrary, La Niña events tend to bring greater than average rainfall along with more intense and more frequent storms. Palau remains vulnerable to man-made disasters such as fires, marine oil spills, disease outbreaks, and water pollution. Like many Pacific Island countries, Palau's vulnerability is heightened due to geographic remoteness. After many years without a disaster, typhoons struck in 2012 and 2013 while a major drought impacted the country in 2016. These events forced a reconsideration of disaster planning, vulnerability assessments, adaptation plans, and management processes.

Climate Change

Palau is already feeling acute impacts of climate change. Communities and researchers have confirmed rising sea levels and an increased incidence of extreme weather. Direct impacts are expected to also include changes in seasonal rainfall and temperature and increasing ocean acidification, all of which suggest a less predictable relationship with the ocean and less reliable weather patterns.[75] The practical results of these changes include compromised water resources and increased threats to vital infrastructure, settlements, and facilities that support the livelihoods of island communities.[76]

Palau has set a target of a 22% reduction in emissions (reference year 2005) by 2025, to be achieved by a combination of energy efficiency and transition to renewable energy sources. Other relevant sectors include waste management, construction, and transportation. For waste management, Palau is exploring methane recovery from the national landfill. For construction, the National Congress is working on how to promote energy efficiency through a national building code. For transportation, the country is pursuing an innovative marine vessel design fueled by renewable energy. On land, the "Complete the Streets" initiative supports use of alternative transport – i.e., walking, biking, and public transportation – in addition to the transition to fuel-efficient vehicles over the medium term.

The Palau Climate Change Policy (2015) addressed climate mitigation and adaptation across nine sectors: agriculture and fisheries, health, biodiversity conservation and natural resource management, society and culture, tourism, critical infrastructure, utilities, finance and economic development, and education. The policy identifies six priorities for action:

- Agriculture: Promote climate-resilient agriculture and aquaculture
- Forestry: Protect forests as important carbon sinks
- Health: Increase public awareness about mosquito-borne diseases and reduce mosquito breeding sites
- Natural Resource Management: Sustainably manage coastal ecosystems and protect ocean health, as oceans are an important sink for greenhouse gases
- Policy and Planning: Develop a comprehensive vulnerability and adaptation strategy that also addresses broader development and social and environmental issues
- Water: Improve the management and maintenance of existing systems, watershed protection infrastructure, drought and flood preparedness, and centralized water treatment in urban areas.

Climate mitigation involves measures to slow down or reverse climate change. With already minimal greenhouse gas (GHG) emissions, Palau still is targeting a 22% reduction by 2025 in GHG emissions by addressing emissions from the fossil-fuel-based energy sector, which accounts for 84-96% of total emissions. Progress

using rooftop or other solar panel installations has been uneven; the contribution of solar to the national electricity grid hit 3.3% in 2019 whereas the remote northern island of Kayangel is powered 100% through solar power.

Concurrently, climate change adaptation (CCA) includes measures to reduce the impacts of climate change by improving the country's ability to manage disasters and minimize risks. The Palau Climate Change Policy of 2015 addressed the issue of CCA with three overarching policy objectives: 1) enhance CCA across all sectors; 2) improve the country's ability to manage unexpected disasters and to minimize disaster risks; and 3) mitigate climate change by maximizing energy efficiency, protecting carbon sinks (e.g., oceans and forests), and minimizing GHG emissions.[77] Natural carbon sinks such as oceans and forests absorb and capture carbon dioxide from the atmosphere and reduce its concentration in the air.[78]

The Representative Concentration Pathways (RCP) 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 because of human activities. The four RCPs range from very high concentrations of GHG (RCP8.5) to very low concentrations (RCP2.6), and each of the RCPs (2.6, 4.5, 6.0, and 8.5) plots a different emissions trajectory (pathway) and signifies the cumulative GHG concentrations in the atmosphere in the year 2100.[79] Surface air temperatures in Palau are expected increase through 2100 compared to the end of the 20th century under the high emissions scenario (RCP 8.5). Rises could be 0.6-1.0°C (1.1-1.8°F) by 2030, 1.0-1.9°C (1.8-3.4°F) by 2050, and as much as 2.1-4.0°C (3.8-7.2°F) by 2090.[80]

Indicators of how climate change is impacting or is expected to impact Palau by the year 2100 include:

- Number of hot days (above 32°C/90°F) and cool nights (below 23.5°C/74°F) – In Koror, the average number of hot days per year has risen from 46 (1952-1961) to 100 (2009-2018) while the average number of cool nights has fallen from 40 (1952-1961) to 13 (2009-2018)[81]
- Extreme rainfall events – Projected increases in the intensity of the West Pacific Monsoon and Intertropical Convergence Zone are expected to drive an increase in intense, extreme rainfall events (1-in-20-year events become 1-in-8-year events under lower RCPs and 1-in-4-year events under higher RCPs)
- Drought – Palau is expected to experience less frequent drought overall and moderate or severe droughts that last less time
- Cyclones – As the climate warms, Palau can expect fewer total storms but greater intensity in the storms that do form.[82]

Palau already experiences high sea level variability (0.5-0.6 meters [m]; 1.6-2.0 feet).[83] Two high tides occur per day and the range between peak high and low tides is about 2 m (6.5 feet). At Malakal harbor, sea level rose 19 millimeters (mm; 0.75 inches) over the 30 years to 2000.[84] Projections of climate change influences indicate that increases in mean sea level will affect tidal flood frequency and cause high-tide flooding. Compared to the year 2000, Palau could see a total mean sea level rise of 1.8-2.0 m (5.9-6.6 feet) by 2100.[85]

Hazards

Palau faces relatively moderate natural disaster risk and mainly experiences tropical storms, drought, and tidal surges. However, as with other Pacific Island countries, Palau is particularly vulnerable to the impacts of climate change, including severe weather events and rising sea levels. A survey of disaster events between 2011 and 2020 showed that 67% of events were storms, including two major cyclones, and 33% of events were epidemic/pandemic diseases. A total of 1,374 people were impacted during this period by these events.[86] Insurers' calculations indicate that, between 2021 and 2050, Palau has a 50% chance of experiencing total disaster losses exceeding US$30 million and casualties exceeding 45 people, and a 10% chance of experiencing total losses exceeding US$247 million and casualties exceeding 175 people.[87]

Drought

The country has an annual dry season from January to March, a period during which the quality and quantity of potable water available to local communities fall.[88] El Niño is one of the most important influences on the incidence of drought in Palau. Less than average rainfall (generally November-April) and weaker than average trade winds can start to develop as early as May or June of an El Niño year and typically reach maximum strength during December; the conditions generally would then subside by June of the following year.[89] Thus, the country can experience a full year of dry conditions.

Four states – i.e., Angaur, Kayangel, Ngiwal, and Peleliu – each have water systems that have groundwater supply sources. They are vulnerable to extreme water shortfalls during dry periods as they are dependent on the rains to recharge their groundwater sources and water lenses. The states of Sonsorol and Hatohobei rely almost entirely on individual home and community water catchments and wells. In addition to immediate water shortfalls, all groundwater, lenses, and wells are at risk of rising salinity from saltwater intrusion if they are not recharged by rains.[90]

Knock-on effects of drought include power outages (as cooling towers cannot circulate water), increased disease burden as water quality declines, and higher risk of wildfires.

Earthquake / Tsunami

Palau is situated in a relatively quiet seismic area but is surrounded by the Pacific "Ring of Fire," which aligns with the boundaries of the tectonic plates. In historical times, no instances of significant earthquake damage have been recorded in Palau. The country has a 40% chance of experiencing, at least once, light to moderate levels of ground shaking by 2050. Such an event would cause very light or no damage to well-engineered buildings and possibly more damage to structures built with less stringent criteria.[91]

Similar to earthquake risk, the tsunami threat is minimal. A number of small tsunami events (less than 10 centimeters [cm; 3.9 inches] in amplitude) have been recorded in the immediate region via sea level gauges. One such event, in 2009, was generated by two 7.6- and 7.5-magnitude earthquakes in the New Guinea trench. Since 1970, there are records of eight tsunamis that have reached Palau, although no damage has been observed. Research into the threat has found that a 9.0-magnitude quake in any of the Philippine, Mariana, Ryukyu, Nankai, or New Guinea trenches could send a 240 cm (7.8 foot) wave toward the region. A follow-on study found that, for a 2000-year return period, a maximum wave amplitude of 2.3-2.7 m (7.5-9.9 feet) could be expected near Tobi, Fanna, and Sonsorol, and a 3.5 m (11.5 feet) wave could threaten the west coast of Babeldaob and Koror. The risk is much lower over a shorter timeframe. Warning times for tsunamis generated in regional trench zones range from one hour (Philippine) and 6-10 hours (Kuril Islands, Russia, Alaska, and South America). The geographically isolated southern states of Palau are also relatively low-lying and would suffer more severe impacts from a tsunami than the larger northern islands, which also have higher elevations and better connections to external assistance.[92]

Epidemic/Pandemic Disease

As of 11 November 2022, the Ministry of Health and Human Services (MHHS) had reported more than 5,500 confirmed cases of COVID-19 in the country over the first 18 months of the pandemic.[93] The country has, in recent years, battled small outbreaks of other contagious diseases or vector- or water-borne illnesses. In the first half of 2021, the MHHS reported 24 cases of leptospirosis,[94] and during 2019, more than 800 cases of Dengue (serotype-3) were identified.[95] However, the population does tend to maintain higher than 95% coverage rates for vaccination against key diseases – e.g., measles and diphtheria-tetanus-pertussis.[96] The small population and remoteness of the country contribute both to its capacity to keep diseases out and to keep outbreaks small as well as to its vulnerability to a novel disease, as illustrated by the fact that approximately one-

quarter of the population contracted COVID-19 during the first two years of the pandemic.

As a means to identify and report key diseases, the national hospital is the focal point and houses the sole laboratory for testing in the country. All samples taken on outer islands are referred to the national hospital laboratory for analysis. However, beyond seven priority notifiable diseases that are tested locally, the country's health sector uses referrals to Hawaii and Guam. Meanwhile, MHHS also operates a digitized, web-based reporting system whereby local clinics can report cases (suspected or confirmed) of 38 priority diseases, and an MHHS EpiNet Team of clinical and public health professionals coordinates outbreak response activities, facilitates public communication regarding outbreaks, and advises policymakers. Finally, the MHHS Director of the Bureau of Public Health sits on the National Emergency Committee (NEC) and serves as a focal point to public health emergencies as well as serving as the focal point for international health agencies.

In addition to routine testing and reporting, Palau has plans in place for medical countermeasures - medicines and medical supplies that can be used to diagnose, prevent, or treat diseases related to chemical, biological, radiological, or nuclear (CBRN) threats. It also has policies in place for requesting assistance from foreign medical experts in cases of emergencies. The country maintains locally a one-month stockpile of medical countermeasures. As part of the COFA, Palau participates in the U.S. strategic national stockpile program, and, in the event of a large-scale emergency or disaster, this participation means Palau could access large quantities of medicine and medical supplies – e.g., antibiotics, chemical antidotes, antitoxins, airway maintenance supplies, and medical/surgical items. Additional international agreements, such as one established with Taiwan during the 2019 dengue outbreak, mean the country has continually expanded its ability to receive public health specialists.[97]

Tropical Storms / Cyclones

Palau is located north of the equator in an area known for frequent tropical cyclones with damaging winds, rain, and storm surges. The country has been affected by devastating cyclones in the past. For example, Typhoon Marie in 1976 destroyed crops, damaged buildings and public utilities, and caused more than US$4 million in damage. In 2001, Typhoon Utor resulted in another US$4 million in damage.[98] More recently, Typhoons Bopha (2012), Haiyan (2013), and Surigae (2021) brought high sea surges and extensive wind damage and displaced communities. A 2021 survey noted that from 1945, Palau recorded 68 typhoons, tropical storms, or tropical depressions within 200 nautical miles of its islands or reefs. At their nearest point to Palau, 20 of these storms were typhoon strength with winds 118 km per hour (73 miles per hour); the average works out to one typhoon every three years.[99]

Additional effects of major storms include coastal and upland flooding, landslides on particularly steep slopes, and coastal erosion in addition to lingering damage to cropland or reefs that support fisheries.

History of Natural Disasters

The following is a list of disasters in Palau in the last ten years.

2020-2022 – COVID-19

Palau closed its borders in March 2020[100] and staved off the arrival of the virus for more than one year. It did not report a single case of COVID-19 until September 2021; the first wave of infection began to decline in January 2022 with a second, smaller wave peaking in May and a very small uptick in spread in August. As of 18 November 2022, the country had reported a total of 5,572 confirmed cases of the disease and seven deaths from it. As of 6 September 2022, more than 50,000 doses of vaccine had been administered,[101] and the Asian Development Bank (ADB) reported that by January 2022, when

the country re-opened its borders, more than 96% of the population was fully vaccinated.

Although the direct health consequences of the pandemic were minimal for Palau, the country suffered immensely from the closure of boarders and the complete halt of the country's tourism industry, a situation that saw thousands suddenly unemployed. The Coronavirus Relief One-Stop Shop (CROSS) Act offered immediate social assistance to the population-at-large. However, key segments of the population either were not able to access this assistance or required additional consideration. The country approached the ADB for grant assistance and accessed trust funds financed by Ireland and Japan in order to deliver assistance directly to more than 1,600 beneficiaries with a focus on highly vulnerable people – e.g., farmers, women, children, the elderly, and persons with disabilities.

The personal and overall socio-economic losses suffered during the pandemic led the country to seek ways to bolster its social services. One key system that was strengthened related to community health and family groups who provide direct assistance to homebound elders and persons with disabilities. A second system that received direct strengthening to ensure that future disruptions – whether global pandemics or the long-term consequences of climate change – do not become catastrophes was a project to bolster the agricultural network from small farmers up through cooperatives, plant nurseries, and food processing facilities. Finally, in an effort to keep the country from experiencing rises in gender-based and domestic violence that were noted in many countries during the COVID-19 pandemic, Palau boosted the availability and resources of case managers for survivors, hotlines, counseling, and information campaigns to both help change societal perceptions and inform people of available services.[102]

On 17 March 2020, Palau's MHHS issued its Certificate of an Unavoidable Public Health Emergency Response for COVID-19, a declaration that mandated the scaling up of clinical and public health response measures. By 20 March, the National Governing Board of the Palau Red Cross Society (PRCS) approved the PRCS COVID-19 Preparedness and Contingency Plan and Business Continuity Plan. This approval also activated the PRCS COVID-19 Emergency Operations Centre (EOC) to carry out its duties and functions under these PRCS plans and its duties as per the National Disaster Risk Management Framework (NDRMF), whereby the articulated role of PRCS is to support the lead agency in medical health and sanitation emergencies, communications, mass care, and relief management.[103]

2021 – Typhoon Surigae

A tropical system formed south of the Federated States of Micronesia in mid-April 2021. It became Typhoon Surigae on 16 April and would become the strongest typhoon in the northern hemisphere to form before May and be the most intense storm ever recorded by the U.S. National Oceanic and Atmospheric Administration (NOAA). It passed north of Palau, near Kayangel State with sustained winds of 136 km per hour (85 miles per hour). All of Babeldaob and parts of Angaur, Peleliu, Kayangel, and Koror felt the impacts of heavy rain and high winds, which blew the roofs off of houses and damaged utilities infrastructure. The storm swell peaked at 23 m (75 feet) in some places. Estimates found that 1,500 houses were damaged and 150 destroyed, along with belongings and crops.

PRCS activated its EOC on 14 April to provide coordination and support to the NEC and responders. PRCS mobilized 125 trained Red Cross Disaster Action Team (RDAT) members and volunteers who were deployed by the National Emergency Management Office (NEMO) on 17 April to conduct initial damage assessments and initial distributions of non-food items to all 16 states. RDAT assisted with evacuations of vulnerable households, supported evacuation center registration and management, provided basic needs to shelter evacuees in Koror, and helped relocate evacuees' essential household items. PRCS provided psychological first aid to

300 shelter evacuees within the first 48 hours after the storm. In addition, PRCS provided a phone hotline for NEMO and weather services and cleared and moved internationally procured items arriving in the country throughout May. It supplemented all of this action by providing cash voucher assistance to 1,072 households with government support.

The International Federation of Red Cross and Red Crescent Societies (IFRC) supported the operation through an in-country disaster risk management delegate from the IFRC North Pacific Sub-Delegation; this delegate helped provide briefings and guidance to PRCS, provided early warning weather information, and coordinated information sharing with local and regional partners. An additional delegate provided remote oversight from the North Pacific Sub-Delegation office in the Marshall Islands. The IFRC delegation in Suva, together with the ICRC Pacific Delegation, provided remote technical assistance to the operation through coordinated updates and information to all regional partners and technical support. Additional Red Cross support came from the American Red Cross Society, the Australian Red Cross Society, and the New Zealand Red Cross Society.

The NEC coordinated dissemination of information to the public and sent more than 15 detailed special weather statements and key messages. It coordinated essential services, state-level support to assessments, and restoration of services and infrastructure. The NEC secretariat carried out wider community engagement via radio announcements, press releases, and governors' consultations. Finally, NEC coordinated communication to community leaders and members on matters of public concern and information about relief efforts across agencies. The International Organization for Migration (IOM) assisted NEMO by donating essential household items to meet the shelter and water, sanitation, and hygiene (WASH) needs of targeted households.[104]

Airlifting of relief items from overseas began on 6 May. IFRC and the United Nations World Food Programme (WFP) collaborated to bring IFRC relief supplies and 400 family kits donated by the Government of Australia and delivered from the WFP-managed UN Humanitarian Response Depot (UNHRD) in Kuala Lumpur, Malaysia, using the WFP-managed Pacific Humanitarian Air Service (PHAS). The first relief flight carried family kits, kitchen sets, buckets, blankets, and jerry cans that were distributed by PRCS to communities on the main and outer islands.[105]

On 19 May, the U.S. Agency for International Development (USAID) airlifted plastic sheeting for shelter needs, kitchen sets, and other relief supplies from the USAID warehouse in Miami (Florida, USA). These items were handed over to IOM for immediate distribution. In addition, USAID delivered US$100,000 to PRCS to support its on-the-ground efforts.[106]

2018-2019 – Dengue Outbreak

On 7 December 2018, the Palau MHHS sent out a public alert regarding an outbreak of dengue fever; this alert followed the country's first ever laboratory confirmation of two cases of dengue serotype-3, which posed a significant concern for public health as the whole population was vulnerable. MHHS activated its emergency response team the same day as the alert was published. The team was tasked with raising community awareness of the outbreak and dengue prevention measures, conducting disease surveillance and reporting, strengthening environmental control measures, and ensuring adequate resources were available to combat the outbreak. Between 1 December 2018 and 8 September 2019, the outbreak grew to include 586 cases; numbers peaked in late July. There were two deaths attributed to dengue infection during this outbreak. The hardest hit group was native Palauans ages 10-19 years with Koror, Airai, and Aimeliik recording the most cases; Koror alone reported 423 cases, but there were cases recorded in 13 of 16 states.[107]

2016 – Drought

The NEC convened on 21 March 2016

to discuss the effects of drought conditions prevailing over the country. Among information considered by NEC was a NOAA weather report that categorized Palau as being in a state of Extreme Drought Level 3 (of four levels), and the report revealed that cumulative rainfall for Koror over the preceding four months had been the lowest recorded after 1951. The state had received just 448 mm (17.65 inches) of precipitation.

The Palau Public Utilities Corporation (PPUC) reported that the two water sources for the Koror-Airai Water System had been declining since January and the Ngerimel Dam outflow had been shut down. The remaining source of water, the Ngerikiil River, was delivering only 19% of the normal outflow. PPUC placed Koror and Airai on an Emergency Water Rationing Schedule on 12 March; PPUC further reduced rations on 22 March and again on 19 March. Beyond the Koror-Airai region, PPUC reported that other parts of Babeldaob, including the larger states of Ngaraard, Ngarchelong, and Aimeliik, as well as the outer islands of Kayangel, Peleliu, Angaur, and the Southwest Islands, were seeing their water resources diminish and had been placed on water rationing schedules. MHHS reported that the direct health impacts included outbreaks of diarrhea, pink eye, and other diseases related to contaminated food and water and from poor air quality. Moreover, MHHS facilities were confronting shortfalls in supply from the public water system upon which they rely. The Ministry of Education (MOE) reported a 3-4-day onsite water storage capacity but little ability to refill, and MOE reported increased risk to student health and hygiene.

NEC recommended declaration of a State of Emergency, and President Remengesau issued Executive Order 389 on 22 March to declare a State of Emergency due to an Extreme Drought. At the end of an initial 10-day emergency period, conditions had significantly deteriorated to the point that water from the Ngerikiil Reservoir could no longer provide adequate water to Koror and Airai, and water distribution by truck became necessary. Demands on local retailers completely exhausted all available stocks of drinking water. As a result, MHHS, MOE, and the Environmental Quality Protection Board (EQPB) implemented emergency plans to increase awareness regarding the quality of drinking water and public water conservation measures. On 1 April, the NEC recommended the President extend the State of Emergency, a request to which both the President and Congress assented. However, a second extension was rejected by Congress, and the State of Emergency expired on 11 April. Nonetheless, continued extreme drought conditions led to a Presidential Directive, issued on 18 April and directing the Executive Branch to continue responding to the emergency situation and operating as if there was a continued constitutional State of Emergency.

Only on 9 May did PPUC report that the amount of collected rainfall was sufficient to allow resumption of 24-hour water service for Koror and Airai. PPUC reported that water levels at the Ngerimel Dam and the Ngerikiil Reservoir were adequate to fill water intake and delivery tanks. The NEC continued to meet weekly to discuss updates and coordinate efforts to assist the States that continued to experience water shortfalls.[108]

2013 – Typhoon Haiyan

On 7 November, Super Typhoon Haiyan passed just to the north of Palau, and the storm's outlying winds and rain hit Kayangel state very hard. All of the houses and other buildings on the island were destroyed, and all residents were evacuated to Koror. No casualties were reported. In other states, homes were damaged, and electricity and water supplies were disrupted for several days. In total, across the affected islands, 415 homes were damaged, 39 of them completely destroyed (22 of them on Kayangel).

Ahead of the storm's passage, the National Emergency Operations Center (NEOC) had been activated by the government, and PRCS had activated its own EOC. The NEC met regularly to receive updates and direct the response. On 8 November, the President signed a Declaration

of a State of Emergency and released US$1.48 million for immediate relief and restoration of infrastructure. Various stakeholders, including PRCS, conducted damage assessments and distributed emergency relief supplies, including drinking water, tarpaulins, jerry cans, towels, soap, mosquito coils, emergency lighting, and cooking stoves with gas. Representatives of IFRC, the Australian Red Cross, and Micronesian Red Cross were in Palau ahead of the typhoon, and they stayed to support PRCS efforts. A 15 November visit to Kayangel by the President and other stakeholders revealed the extent of the damage; along with almost all buildings, all of the infrastructure and most crops were completely destroyed.[109]

On 9 November, the U.S. Chargé d'Affaires had declared a disaster in Palau. In response, USAID's Office of U.S. Foreign Disaster Assistance (OFDA, now the Bureau for Humanitarian Assistance [BHA]) provided US$100,000 to the PRCS to procure and distribute emergency relief commodities.[110] Additional assistance came in the form of funding and relief items from Taiwan and Japan. By 18 November, the emergency phase had ended, and the government and UN Office for the Coordination of Humanitarian Affairs (OCHA) began the Near Term Response Plan (3-12 months).[111] As of mid-May 2014, reconstruction of homes and the electric power infrastructure had begun,[112] and a UNDP-backed project was improving the availability and quality of water supplies for returning residents.[113]

The initial damage estimate was assessed at US$6.3 million (2.8% of GDP), but the final damage was estimated at US$9.7 million (4.3% of GDP).[114]

2012 – Typhoon Bopha

On 3 December, Typhoon Bopha passed just south of Palau. It was packing winds up to 250 km per hour (155 miles per hour) as it passed[115] and produced storm surges up to 5.5 m (18 feet) high[116] and damaged coral reefs on the country's east coast. In outlying island areas, the storm caused a storm surge that brought ocean waters several hundred feet inland, extensively damaged crops, damaged roads, and dispersed debris.[117] On 4 December, the President declared a State of Emergency,[118] and on 5 December, the U.S. Embassy declared a disaster. In response, USAID/OFDA provided US$100,000 to PRCS for emergency support to impacted communities. USAID/OFDA also deployed several staff members to Palau and Guam to coordinate assistance efforts and conduct assessments.[119]

In the days before the storm, 27 November through 2 December, NEMO issued several detailed public bulletins that incorporated precautionary measures to be taken and announced the opening of 45 evacuation centers. Residents boarded-up homes, and many sought shelter in designated evacuation centers in anticipation of the typhoon's arrival. The NEC declared "Condition 1" on the afternoon of 2 December, when typhoon force winds were expected to hit within 12 hours; this condition restricted movement. Although most islands felt some effects, by noon on 3 December, the government declared "Condition 4: normal conditions," which allowed evacuees to return to their homes and begin assessing the damage and cleaning up debris. While most main roads were open swiftly, the northeast coast road on Babeldaob sustained damage. No human casualties were reported.

The Government established a Recovery Task Force to oversee the response, including rebuilding or repairing houses and restoring electricity, water, and sewage systems.[120] As of 11 December, the government reported that 149 houses had been completely destroyed or seriously damaged and that disruptions to electricity were on-going while water supplies had been restored. An estimated 841 people in Angaur, Peleliu, Melekeok, Ngiwal, and Ngaraard states were impacted.[121] Moreover, two schools in Ngaraard state were seriously damaged.[122] The Japan International Cooperation Agency (JICA) dispatched emergency relief supplies, including 156 jerry cans, 20 plastic sheets, 100 blankets, and 20 water purifiers. On 17 December, JICA handed over the items to Palau's government and PRCS for distribution.[123] The government of

South Korea provided cash assistance.[124]

The initial estimate of total damages was US$5.9 million (2.7% of GDP), but the final damage estimate was raised to US$15–20 million (7.0–9.3% of GDP).[125]

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[126]

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.[127]

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 various risk calculation models support proactive crisis management frameworks and are helpful for prioritizing allocation of resources and for coordinating actions focused on anticipating, mitigating, and preparing for humanitarian emergencies.

INFORM Country Risk Profile

The Index for Risk Management (INFORM) Risk Index measures the risk of humanitarian crises and disasters in 191 countries. The INFORM model is based 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.[128]

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 humanitarian crisis after an extreme weather, geophysical, or man-made event. In the 2023 INFORM Risk Index, Palau had an overall risk of 3.3/10, which INFORM categorizes as the "low" risk class, and this score earns Palau the rank of 106th most at risk of 191 countries assessed. The Hazards and Exposure dimension score takes into account a combination of both natural and human hazards; Palau rated 2/10 and ranked 130 of 191 countries assessed. The Vulnerability dimension score was 4.4/10 or a rank of 65 of 191 countries, and the Lack of Coping Capacity dimension score was 4/10 for a rank of 108 of 191 countries. Physical exposure to tsunami, 7.7/10, was the highest risk in the Hazards and Exposure dimension. Aid Dependency measured 6.8/10 for the Vulnerability dimension. DRR was rated 6.9/10 in the Lack of Coping Capacity dimension. Figure 3 shows the INFORM Dashboard for Palau.[129]

Figure 3: INFORM Risk Index Dashboard for Palau (2023)

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 events. Social factors, political conditions, and economic structures play an important role in turning these events into crises. Thus, this 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 WorldRiskReport calculates the level of risk a country faces based on a formula of exposure to hazards and vulnerability. It 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.

This 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.
- Adaptation - 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, Palau ranked 173 of 192 countries with a "very low" risk class score of 1.25 (out of 100 where 0 is the lowest risk and 100 the highest).

- Exposure: 0.36 (low)
- Vulnerability: 4.34 (very low)
- Susceptibility: 4.89 (very low)
- Lack of coping capacity: 2.51 (very low)
- Lack of adaptive capacity: 6.67 (very low)

Palau's risk score (1.25) is well below the regional, Oceania, median risk score (4.15) and below the Micronesia sub-region median (2.29). Overall, Oceania as a region ranks "second least at risk" behind only Europe even though the Australia/New Zealand and Melanesia sub-region median scores are significantly higher than other regions' highest regional values. This peculiarity arises from the fact that four countries in Oceania – Papua New Guinea, Australia, the Solomon Islands, and New Zealand – are in the highest risk class while Palau, along with Tuvalu and Nauru belong to the lowest risk class due to their location away from cyclone and earthquake zones. The risk classification in Oceania is, thus, decisively shaped by exposure, and Palau shares low exposure scores with some of its neighbors.[130]

ORGANIZATIONAL STRUCTURE FOR DISASTER MANAGEMENT

The Disaster Executive Council (DEC) provides strategic direction and oversight. Below DEC is the National Emergency Committee (NEC), responsible for operational oversight, coordination, and management of disaster risk management (DRM) activities.[131] The NEC consists of the National Emergency Management Office (NEMO) and the Central Control Group (CCG). During an emergency, overall guidance is provided by the DEC; management and coordination is carried out by NEC, with supported from NEMO. Under these two entities come the specific emergency response functions for ministries, bureaus, divisions, and non-government organizations (NGO).[132]

Lead Government Agencies in Disaster Response

The DEC is chaired by the President and comprises the eight Cabinet Ministers, a Council of Chiefs representative, the Chair of the Governors' Association, the President of the Senate, and the Speaker of the House of Delegates. DEC provides overall strategic direction and oversight for disaster management and response as well as declaring States of Emergency.[133] NEC meets every quarter to discuss actual events and possible policies or changes.[134] It is responsible for DRR policy and takes responsibility for the coordination of emergency response including providing advice to the DEC, particularly on Emergency Declarations. The NEC also requests and coordinates external assistance.

Chaired by the Vice-President,[135] the NEC is composed of representatives from 38 organizations including ministries, agencies, and NGOs. As the communication lines and distances among members are short, the committee can be activated within 60 minutes of the first notification of an incident.[136] Within NEC, there is a branch specifically focused on DRM, the Hazard Mitigation Subcommittee, through which NEC drives DRM and integration of socioeconomic concerns and environmental risk into national disaster plans.[137] During a disaster event, the NEC will operate from the NEOC. The NEMO provides administrative support for the NEC.

The lead agency in response is NEMO, the head of whom takes the role of the Executive Director for Coordination in the event of a disaster. NEMO ensures implementation of the National Disaster Plan and provides support to national and state agencies in developing agency support plans. The CCG is flexible with members chosen by the NEMO Coordinator (as the Executive Director for Coordination) during the response phase of a disaster. The tier that represents on-site management of emergency or disaster events is the Incident Command Post (ICP). The management of incidents follows the National Incident Management System.[138] Figure 4 shows the flow of authority, advice, and coordination in times of emergency.[139]

Key capacities and responsibilities under NEC fall to the following agencies:

- **Law Enforcement/ Fire** - Bureau of Public Safety
- **Search and Rescue** - Bureau of Public Safety, Marine Law Enforcement Division
- **Medical, Health, and Sanitation** - Ministry of Health, Environmental Quality Protection Board
- **Power, Water, and Sewer** - Palau Public Utilities Corporation, Bureau of Public Works
- **Communications** - Palau National Communications Corporation
- **Engineering and Public Works** - Bureau of Public Works, Capital Improvement Project

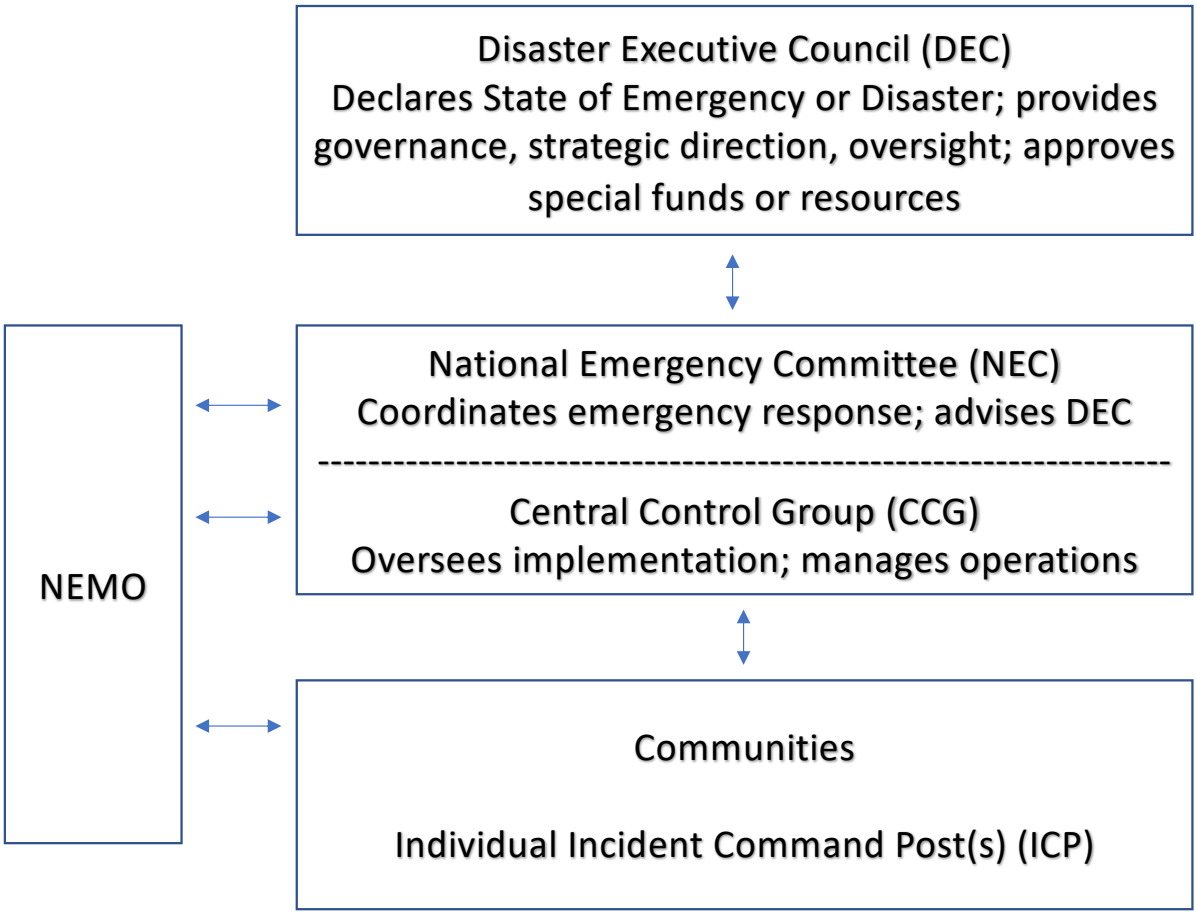


Figure 4: National Disaster Management Structure

- **Mass Care (Food)** - Ministry of Education
- **Shelter Management** - Ministry of Education
- **Relief Management** - Division of Property and Supply, Ministry of Finance
- **Initial Damage Assessment** – Hazardous Materials experts, NEMO (depending on emergency)
- **Comprehensive Damage Assessment** - Bureau of Public Works, NEMO
- **Transport (Land & Sea)** - Bureau of Aviation
- **Terrorism / Civil Unrest / Unexploded Ordnance** - Ministry of Justice
- **Climate Change Adaptation** - Ministry of National Resources, Environment, and Tourism
- **Environmental Protection** (e.g., hazardous materials, oil spill, or chemical releases) - Environmental Quality Protection Board, Bureau of Public Safety[140]

Disaster Relief and Emergency Response

The President may declare a state of emergency in the event of war, external aggression, civil rebellion, or natural catastrophe threatening the lives or property of a significant number of people, in accordance with Article VIII, Section 14 of the Constitution. The National Disaster Risk Management Framework (NDRMF, 2016) clarifies the declaration procedure. The NEC can recommend to the President, through the DEC, that a state of emergency be declared in all or part of the affected or potentially affected areas. The declaration must be confirmed by the Palau National Congress within 10 days if it is to continue beyond the initial 10-day period. State governors can declare a state of emergency covering only their state.

In the event of an emergency, NEMO coordinates disaster response and recovery and

acts under the oversight of the NEC.[141] At the national level, the NEC convenes the NEOC,[142] located at the NEMO office,[143] for declared multisectoral, multi-hazard emergencies. Individual agencies, including the Ministries of Health and Human Services, of Public Infrastructure, Industries, and Commerce (Airport), and others also maintain their own EOCs that can take lead or supporting roles under the NEOC. For example, the MHHS EOC may be assembled within 60 minutes of first notification and is situated at the national hospital. The national point of contact (the NEMO executive director) is available 24-hours-a-day for coverage of emergency operations, and the MHHS Communicable Diseases Unit maintains a hotline that can be accessed 24-hours-a-day for public health events and emergencies.

States and emergency response agencies have their own disaster plans that are aligned with the NDRMF.[144] In the case of a disaster that is limited to a single state, the National Coordinator will consult the governor of that state and, if necessary, designate the governor as a State Coordinator. In such instances, the State Coordinator will liaise with the NEOC and the National Coordinator for national-level support.

The NEMO Coordinator, as the designated National Disaster Coordinator, assumes overall control and coordination responsibilities for the duration of any declared national disaster in support of the NEC. These responsibilities will include:

- Direction and control of all government agencies and their resources
- Acquisition of any government asset or private and other assets and services that may be needed to control the disaster situation; and
- Ability to call on the assistance of any person or persons who may have expertise that will assist in controlling the disaster.

Whenever necessary, the National Disaster Coordinator may co-opt additional support through a CCG for the implementation and management of disaster response operations. Membership of the CCG depends on the nature of the disaster event. The CCG will:

- Activate department and organization plans or procedures in response to the given situation
- Liaise with the lead agency, department, state government, NGO, and community groups in the execution of their disaster response roles and responsibilities
- Activate the disaster assessment system
- Deploy technical teams
- Collate damage assessment reports and prioritize resource allocation to affected areas based on resource availability, access, and transportation requirements
- Coordinate the preparation and dissemination of media releases; and
- Identify and coordinate international relief assistance.[145]

The Palau government has integrated an incident command system into DM.[146] An Incident Commander will manage a disaster or emergency on-site. The first responding agency representative to arrive, regardless of whether that individual is the most qualified, shall create an ICP, and this official serves as the Incident Commander and has operational control of the site until replaced by an official from the relevant agency suited to a given event. The Incident Commander immediately establishes communication with the NEMO Coordinator and NEOC. The ICP shall be formed as near as practical to the site of the disaster.[147]

In June 2022, 18 personnel completed training to form the initial membership of Palau's first Emergency Medical Team (EMT). "Team Klemat" is composed of health professionals including doctors, nurses, and logisticians trained to respond rapidly to sudden-onset emergencies or outbreaks. The development was led by the Palau government in partnership with the World Health Organization (WHO) and USAID. WHO provides training and ongoing technical support, as well as the procurement of equipment and supplies to facilitate future

deployments. With this cache of materials, Team Klemat will be fully self-sufficient and ready to deploy within hours[148] in support of Incident Commanders and ICPs.

Armed Forces Role in Disaster Relief

Palau does not have a military force. Under the COFA, Palau and the U.S. agreed that the United States has full authority and responsibility for security and defense matters in or relating to Palau. In addition, Palau citizens can serve in the U.S. Armed Forces.[149]

Domestically, the Ministry of Justice provides law enforcement throughout the country. The Bureau of Public Safety maintains its main facilities in Koror with operations focused on Koror and Airai, and there are two substations (one each in East Babeldaob and West Babeldaob). The Ngardmau (West Babeldaob) substation only hosts a Fire and Rescue Unit; the Melekeok (East Babeldaob) substation hosts a Patrol Unit.

The Division of Fire relies on limited fire hydrants in Koror and Babeldaob. In western Babeldaob, only two states have working hydrants while the limited hydrants in eastern Babeldaob are outdated and usually require additional adaptors to connect to fire tankers. The Division has recently acquired more fire tankers, but a 2021 survey found that more than half of the fleet of fire emergency vehicles are secondhand and overdue for replacement.[150]

In a case where U.S. military assistance may be required, the following is the general series of decisions and actions that would occur.

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 of 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.[151]

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, 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."[152]

U.S military humanitarian assistance and disaster relief (HADR) operations in Palau 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.[153]

Disaster Management Partners

All relief supplies and actions must be coordinated through the NEC. The PRCS, NGOs, and community organizations that may be in a position to augment government efforts must ensure coordination with NEC is maintained.

Requests for international assistance will only be made when the situation has surpassed the national capability to respond or when there are no national resources available. DEC must approve any such request, which, when made, is made on behalf of the Government, by the appropriate bureau under the Ministry of State, which will convene a meeting of diplomatic missions based in Palau as the first step in the appeal process. However, the President may make an appeal to any foreign government directly. Under no circumstances will the Government or NGOs make direct requests to aid agencies or diplomatic missions on behalf of the Government without the consent of the DEC.[154]

Belau Association of Non-Governmental Organization (BANGO)

The Belau Association of Non-Governmental Organization (BANGO) is an umbrella that collects and maintains information on NGOs operating in the country, and it serves as a facilitator or bridge between local and international organizations. Founded in 2018, it coordinates activities and provides networking opportunities so that NGOs, civil society, and the public and private sectors can work on various development projects and build capacity nationally. It can serve as a hub for information sharing and provide a common voice for Palau's NGO community at regional venues. Given the challenges of many of Palau's small, local NGOs in accessing information and connectivity, BANGO tries to serve as a trusted resource for both local communities and external partners.[155]

Nearly every state has a youth, men's, or women's group that provides a structure to community work – e.g., coastal maintenance or constructions, community clean-up, farm-to-market facilitation, educational advocacy, and observance of rituals. These groups include but are not limited to Ngatpang Youth Association (Ngara-lus), Thafaas Sonsorol Men's Association, Meyuns Ngara Yaml, Ngaraseseb, Ngerusar Ngaraklasekl Men's Association, Ucheliaur, OMEKESANG (people with disabilities), and Ngaramecherocher. Many of them promote nature-based solutions to climate change-influenced challenges and participate in conservation and remediation activities.[156]

UN System Agencies

Palau falls under the leadership of the UN's Pacific Multi-Country Office (MCO) in Fiji, and 17 agencies implement programs in the country. Key UN system agencies with a presence in Palau and that play a role in DM, DRR, or CCA are the UNDP, United Nations' Children's Fund (UNICEF), the UNDRR, OCHA, and WHO.

Among other actions, during the COVID-19 pandemic, UNICEF and WHO were important partners in acquiring and delivering medical equipment and training to medical personnel.[157] UN OCHA has provided coordination and resource mobilization in the wake of typhoons that have struck Palau.[158] Among UN system agencies, IOM is among the most active, having opened a dedicated office in the country in 2012. IOM's Palau Office contributes to efforts to address human trafficking as well as displacement caused by disaster and environmental degradation. IOM participates in both DRR and CCA projects.[159] In partnership with NEMO, IOM works with communities to prepare for and respond to natural hazards. Under its Palau Emergency Preparedness and Enhanced Resilience project, funded by the USAID / BHA, IOM engaged the Government, NEMO, PRCS, the MOE, and communities in tabletop exercises to test emergency response plans and procedures and address operational gaps. They all reviewed early warning processes and, in Melekeok State, conducted a tabletop exercise to simulate hazard events and enable coordination on effective use of emergency communication channels, emergency evacuation routes, and school evacuation procedures. In addition to training more than 80 community members on evacuation management, five water quality teams were established and trained, and IOM also revamped five emergency evacuation shelters.[160]

Japan International Cooperation Agency (JICA)

JICA maintains a Koror office that oversees the organization's work in the Federated States of Micronesia, the Republic of Marshall Islands, and Palau. In Palau, JICA is focused on environmental conservation, improving basic education, and building economic infrastructure.[161] Among recent projects have been efforts to build Palau's capacity to manage solid waste and to strengthen integrated coastal ecosystem management for resilience.[162] In April 2021, in response to Typhoon Surigae's impact on Palau, JICA provided emergency relief goods from the JICA warehouse in Palau; these goods included a polyester tank, water purifiers, and a generator.[163]

Red Cross / Red Crescent Movement

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.[164] 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 Palau.[165]

The International Federation of Red Cross and Red Crescent Societies (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.[166] Among the IFRC's offices, clusters, and delegations, Palau falls generally under the North Pacific Sub-Office of the Pacific Country Cluster Delegation. 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.[167]

The IFRC's Suva Cluster Office and its North Pacific Sub-Office in Majuro comprise 11 National Societies from small Pacific Island and archipelago states, including Palau. Through a sub-delegation in the North Pacific, the Cluster Delegation provides support to the PRCS, and the Delegation facilitates connections among the 14 Pacific National Societies.[168]

A resolution within the Palau Congress founded the Palau Red Cross Society (PRCS) in 1997, and the organization became a recognized member of ICRC and IFRC later that year. An auxiliary of the government, PRCS' mandate is to serve the most vulnerable, alleviate human suffering, and contribute to the promotion of human dignity and peace. The main office is in Koror, and there are PRCS volunteers throughout the islands.[169] In addition to the standard Red Cross activities of operating the blood bank and providing FirstAid and CPR training, PRCS responds to disasters with volunteers who are trained and equipped to undertake rapid assessments and deliver relief items to affected people.[170]

PRCS can activate its EOC in times of emergency, and it uses this hub for communications and coordination. PRCS has stood up RDATs in each of the 16 states, and there are dozens of volunteers throughout the country, and they maintain a storage space with a truck, telephones and hand-held radios, Automated External Defibrillators (AED), and other materials useful to the RDATs. RDAT members have received training in FirstAid, CPR,[171] Disaster Risk Management, and Epidemic Control for Volunteers, and are expected to be able to deliver disaster response or relief at their state level. In addition, PRCS maintains four supply warehouses that contain Standardized Relief Items (SRI) for use by PRCS' Disaster Risk Management Program in case of emergency. The facilities are located at the NEMO office and at Palau Community College and are maintained in partnership with the U.S. armed forces' Civic Action Team. IFRC supports PRCS to replenish SRIs and with training and development of the stockholding plan.[172]

Additional Partners

Taiwan and Palau have built a partnership that helps to bolster Palau's DM capacity. In addition to financial assistance in the wake of a disaster, Taiwan offers Palau training, expertise, and technology access. In August 2021, as part of the U.S.-hosted Pacific Partnership exercise, Taiwan delivered a 3-day Disaster Management Workshop in Koror. The workshop focused on technology sharing and coordination in humanitarian relief, and it opened up the possibility for Taiwan to share with Palau innovative technologies for applying big data analysis in DM.[173] Then, in August 2022, Taiwan's National Science and Technology Center for Disaster Reduction and Palau's NEMO signed an agreement on DM capacity building and technology cooperation. The agreement provides for Taiwan to deliver training to Palau's responders.[174]

Australia and New Zealand are regular contributors to both DRR and disaster response. Over the long-term, Australian government funding has been dedicated to assisting Palau in enhancing maritime security, oceans, infrastructure, private sector development, women's empowerment, and supporting regional recovery from the health and economic impacts of COVID-19. Meanwhile, New Zealand has supported Palau through the North Pacific Development Fund and through bilateral funding for renewable energy, climate change, and oceans programs. Some of New Zealand's funding has gone to a project to support income-generation for the unemployed by rehabilitating taro patches damaged by recent tropical cyclones.[175]

U.S. Government Agencies in Palau

Based on the COFA and its subsidiary agreements and amendments, the U.S.

administers various federal programs in Palau and will continue to do so until 2024. Under the 2018 Compact Review Agreement (CRA), the United States also provided additional contributions to the Compact Trust Fund, which assists Palau in achieving healthy economic growth. As of March 2022, the value of the Compact Trust Fund was approximately US$296.4 million.

Among other partnerships, in 2022, Palau and the U.S. co-hosted the 7th Annual Our Ocean Conference in Koror where they addressed cross-cutting themes of concern to small island states and with a focus on climate change. Palau joined the State Department-funded Local2030 Islands Network, which connects island economies and jurisdictions to advance sustainable development solutions. The U.S. supports Pacific Islands Health Officers' Association (PIHOA) work, including Diminishing Dengue in the Indo-Pacific with Climate Services that uses climate, demographic, and health variables to generate an early warning system for mosquito borne diseases.

Through the U.S. State Department's Bureau of Political-Military Affairs, the Global Defense Reform Program (GDRP) is assisting the Palauan government to strengthen institutional capacity in maritime domain awareness. A GDRP Senior Advisor embedded with Palau's Division of Marine Law Enforcement is helping to operationalize the new Joint Operations Center, which allows the Division to monitor and counter illicit activities in Palau's exclusive economic zone. The GDRP program also supported the Government of Palau in establishing the Office of the National Security Coordinator. Finally, on-going work and funding since 2009 has seen the U.S. provide more than US$5.4 million in Conventional Weapons Destruction assistance to Palau to mitigate the negative impacts of unexploded ordnance (UXO) remaining from World War II, work that is coordinated through Palau's National UXO Safety office.

The USAID mission in Manila, Philippines, covers 12 nations, including Palau. Among other programs, USAID grant and technical assistance supports Palau's development of a submarine cable branch system to increase redundancy and internet access and to link Palau to a larger trans-Pacific cable, backed by the U.S. Department of Interior, USAID, and the governments of Australia and Japan. Moreover, to combat illegal, unreported, and unregulated fishing, USAID is working with The Pacific Community (SPC) to improve sustainable coastal fisheries management and create enabling conditions for an ecosystem approach to fisheries management.[176] Other USAID programs and projects follow.

Inclusive Mitigation and Preparedness in Action (IMPACT)

USAID / BHA delivered funding for the Inclusive Mitigation and Preparedness in Action (IMPACT) project to be implemented by IOM, NEMO, the NEC, and other key stakeholders. It kicked off in September 2022 and aims to build the capacity of the Government and communities to better prepare for, mitigate, and respond to hazard events. The two-year IMPACT project will work at the national level to support preparedness plans and facilitate and inform national level planning and response efforts. The project will directly engage stakeholders to assess current capacities and gaps and will boost capacities of disaster committees to review and update preparedness and response plans. USAID and IOM will also work with the national and state governments and communities to enhance coordination and ensure that information from communities is included in state and national preparedness plans.

During the kick-off event, IOM presented achievements of predecessor projects including the Palau Emergency Preparedness and Enhanced Resilience (PEPER) and the Alii Climate Adaptation and Disaster Risk Education (Alii CADRE) projects.[177] IOM was the implementing partner for PEPER that strengthened evacuation shelters, trained community leaders on shelter management, conducted response exercises, and pre-positioned

emergency relief commodities.[178] Over 1,000 people were trained on disaster preparedness and response topics and information campaigns.[179]

Building Climate Change Mitigation and Disaster Management Capacity

The U.S. government, through USAID, supported capacity building efforts in Palau, which secured US$1 million in climate change-related grants from the Green Climate Fund (GCF). The grant will enable the government to recruit and train staff and establish policies needed to secure financing and implement efforts to combat the effects of climate change. The grant will support Palau's application for GCF accreditation — a crucial step in allowing the country to apply for even more climate-related international funding.[180]

USAID/BHA has provided more than US$3.9 million since Fiscal Year 2013 to support the preparedness and mitigation activities of the Red Cross Societies of Palau, the Federated States of Micronesia, and the Marshall Islands. All of these societies, supported by IFRC, continue to partner with local government agencies, businesses, and communities to build awareness of disaster response activities and cultivate a trained volunteer base for emergency responses. This capacity building program will also empower local Red Cross branches to work with communities to improve their resilience through small-scale projects, such as preparation of family disaster kits for evacuation, installation of flag warning systems, vegetable gardening, clearing evacuation routes, and installing signage.[181]

The U.S. Embassy's contact information is:
U.S. Embassy, Koror
Omsangel/Beklelachieb
Airai, Palau 96940
Tel: 680-587-2920
Fax: 680-587-2911
Facebook: usembassykoror

USAID's contact information includes:

Mission Contact
Ryan Washburn, Mission Director
USAID/Pacific Islands
158 Princess Road
Suva, Fiji
Tel: 679-331-4466
Email: *infopacificislands@usaid.gov*
Facebook: usaid.pacificislands
Twitter: @usaidpacificisl

USAID Contact
Sarah Mentrup, Desk Officer
U.S. Agency for International Development
1300 Pennsylvania Avenue, NW
Washington, DC 20523
Tel: 571-217-0270
Email: *smentrup@usaid.gov*

Laws, Policies, and Plans on Disaster Management

Beyond the Presidential power to declare a State of Emergency, as defined in the constitution, Palau has no formal disaster legislation. The National Disaster Risk Management Framework 2010 (as amended in 2016) outlines institutional arrangements for preparation, response, and recovery.

National Disaster Risk Management Framework (NDRMF)

The NDRMF outlines the national risk profile in detail, explains the roles and responsibilities of each member of the NEC, and lists response agencies with lead or supporting roles during declared emergencies and disasters.[182] NEMO acts as the secretariat for the NEC and is involved in all aspects of NDRMF implementation. The key objectives of the NDRMF are to:

- Establish organizational arrangements that maximize the use of available resources to strengthen mitigation, preparedness, response, and relief and recovery planning for natural hazards

- Promote integrated planning and collaboration for DRM across all levels of government, departments, sectors, and communities; and
- Integrate CCA and DM into national and sectoral planning and strategy.[183]

The Framework also provides guidance for coordination in the development of emergency response plans and procedures as well as DRR strategies for government and non-government agencies.[184] One key plan integrated as Appendix 3 of the NDRMF is the National Tsunami Support Plan.

National Tsunami Support Plan

The Plan integrates tsunami awareness, education, and preparedness as part of NEMO's responsibilities. Alongside the National Weather Service (NWS), Bureau of Public Safety, the Ministries of Education and State, various NGOs, the national media, and other stakeholders, NEMO coordinates public campaigns. The MOE in particular is tasked with ensuring that tsunami science, safety, and preparedness are part of the national school curriculum.

NEMO, in collaboration with State and Hamlet Councils, is tasked with erecting appropriate signage in high-risk areas and in languages understood by a majority of the population. Moreover, NEMO, along with State and Hamlet Councils, must facilitate preparation of Tsunami Evacuation Maps that show safe zones and evacuation routes. Meanwhile, State and Hamlet Councils and individual communities are responsible for preparing appropriate facilities in their demarcated safe zones to accommodate people while they are awaiting the "ALL CLEAR" message.

Under the Intergovernmental Oceanographic Commission Pacific Tsunami Warning and Mitigation System, the Pacific Tsunami Warning Centre (PTWC) in Hawaii and the Japan Meteorological Agency (JMA) provide tsunami warning products to Palau whose national agencies will analyze and decide whether to issue warnings. Palau's NWS is the main agency to receive the PTWC tsunami warning products. Text products from PTWC are delivered to NWS and NEMO although only NWS receives other statistical PTWC products and can decide to issue a warning for Palau.

Warnings to the public are disseminated to the mass media and individuals or communities. Means to achieve this dissemination include fax, email, text/SMS, mobile calls, radio, police officers, Chatty Beetles, social media, and even runners. NEMO is responsible for installation of appropriate forms of mass notification – e.g., sirens in strategic locations. NEMO is also responsible for activation of the mass notification systems.[185]

Palau Community Based Disaster Risk Reduction Toolkit

The Community Based Disaster Risk Reduction (CBDRR) toolkit provides Palau's communities with a common platform for coordinating and addressing risk management. It describes mitigation roles across the whole community with an emphasis on the participation of the most vulnerable – e.g., persons with disabilities, impoverished people, women, the elderly, and youth – and it addresses how to lessen the impact of disasters by employing tools such as identifying hazards, vulnerabilities, and capacities and developing and applying risk reduction measures to reduce loss of life and protect property and social and economic structures. The Toolkit encourages the formation of hamlet-level emergency committees that take advantage of the formal and informal organizations found in these communities and to offer local expertise that can be brought to bear in the absence of or before the arrival of national- or state-level training or assistance.[186] The Toolkit is expected to be a key tool in developing (and up-dating) more State Disaster Risk Management Plans as CBDRR participants will contribute to data sets and observations that feed risk assessments.

Palau Climate Change Policy

Finalized in 2015, the national climate change policy outlines strategic priorities for adapting to the impacts of climate change, preparing for and responding to disasters, and reducing the country's GHG emissions. The policy reflects on the principles laid out in the NDRMF and builds on commitments to increase contributions to renewable energy and decrease energy consumption. There is a detailed list of strategies for various sectors including the DRM (disaster preparedness and DRR) cross-cutting sphere.[187] The Policy was informed by input from communities, civil society, and other stakeholders, and it established the National Appropriate Mitigation Actions (NAMA) and National Adaptation Plan (NAP) as well as the institutional and policy frameworks for climate change mitigation, CCA, and risk reduction and management.[188]

Paris Agreement Nationally Determined Contributions (NDC)

Under the United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement, Pacific Island Countries were obliged to prepare and implement NDCs, through strategies and actions for emissions reductions and through long-term low carbon development strategies.[189] Palau submitted its NDC to the UNFCCC Secretariat in April 2016 with the following key commitments:

- 22% energy sector emissions reductions below 2005 levels by 2025
- 45% renewable energy target by 2025; and
- 35% energy efficiency target by 2025.[190]

Palau's NDCs are based in the 2015 Palau Climate Change Policy.[191]

The Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management (FRDP) 2017–2030

Endorsed by Pacific Island Forum leaders in 2016 after four years of developing a single integrated regional framework, the FRDP provides high level strategic guidance to different stakeholder groups on how to enhance resilience to climate change and disasters in ways that contribute to and are embedded in sustainable development. The strategic guidance is expressed in the form of a non-exhaustive set of priority actions for consideration by various stakeholder groups (national and subnational governments and administrations, civil society and communities, private sector, and regional organizations and other development partners) in support of three goals: 1) strengthened integrated adaptation and risk reduction to enhance resilience to climate change and disasters; 2) low carbon development; and 3) strengthened disaster preparedness, response, and recovery. The FRDP advocates for the adoption of integrated approaches, whenever possible, for coping with and managing climate change and disaster risks, to make more efficient use of resources, to rationalize multiple sources of funding, which address similar needs, and for more effective mainstreaming of risks into development planning and budgets.[192]

Disaster Management Communications

Observers have noted an open approach to sharing information among government agencies, communities, opinion leaders, civil society organizations, the private sector, the public, and the media. At the government level, this openness is reinforced through regular meetings to plan and disseminate information, education and communication materials, proactive health promotion, and risk reduction communications. Information products are disseminated through the media and posted at government facilities and throughout the community. The NDRMF includes a risk communication function that specifies roles and responsibilities. During declared emergencies, the Incident Commander determines crisis communication goals and objectives and tasks all agency public information officers through their sectoral incident commanders.[193]

The NEC's Hazard Mitigation Subcommittee is comprised of all agencies responsible for various aspects of DRR and assists with relevant public awareness programs that are tailored to specific target audiences, including women, youth, and hard-to-reach communities.[194] It is NEMO's responsibility to collaborate with relevant agencies to activate and disseminate national warnings as well as to ensure that timely and appropriate messages are broadcast to the public to advise on the scale of threat and actions that should be taken before, during, and after the impact.[195] During an emergency, the National Public Information Officer, assigned by the Office of the President, takes on the role of lead communicator. For issues that have not been declared national emergencies, the public information officer of the lead agency's EOC will coordinate communication activities.[196]

Early Warning Systems

The NDRMF specifies that warning systems must be people-focused and integrated with one another to ensure effective dissemination and communication networks from the national to community levels and to outlying states.[197] The country has no comprehensive natural disaster early warning system. The Bureau of Archives and Media, under the Ministry of State, is responsible for disseminating public policy and public awareness materials.[198]

The national radio stations, including private media, serve as important communication links with the community at large. Outlying states and remote areas are warned and or alerted through designated high-frequency (HF) radios.[199] Palau also has "Chatty Beetles," which are portable iridium satellite terminals that allow text-based alerts and messages about potential weather hazards in remote locations, especially where communication options are limited. The devices are built to withstand harsh, humid conditions, and they run on a wide variety of batteries for ease of use.[200] Since 2009, USAID has supported NOAA's deployment of Chatty Beetles for emergency managers throughout the region, including in Palau.[201]

The National Disaster Coordinator is tasked with ensuring that all messages are screened, and only urgent or essential service messages are broadcast throughout the stages of the emergency activation process. All broadcast requests related to operations are expected to be channeled through the NEC for authorization. To ensure only accurate and relevant information is broadcast and the public is not confused, the preparation of messages is the responsibility of the Public Information Officer provided by the Office of the President. Tropical Cyclone warning messages issued by the NWS are excluded from these procedures and may be broadcast as and when received through appropriate protocols.

All media releases during emergency operations are regarded as highly important to all sections of society; therefore, they must be regarded as community service and free of charge to NEMO or the Government. It is the responsibility of media staff to liaise with the NEOC Public Information Officer for updated situation reports.[202]

Since 2019, the UNDP, together with the governments of Palau and Japan, has been implementing a project aimed at strengthening disaster communications and climate and tsunami monitoring systems; the project also seeks to enhance the disaster preparedness capacity at the national and community levels.[203] In April 2022, one portion of the Enhancing Disaster and Climate Resilience in the Republic of Palau through the improved Disaster Preparedness and Infrastructure (EDCR) Project kicked off with installation of the first section of the Amplitude Modulation (AM) Broadcasting System antenna. The previous antenna had been damaged by typhoons that struck the country in 2012 and 2013; thus, the national broadcaster lost its nationwide reach as far remote southern islands and Kayangel in the north were out of broadcast range. The first installation of this new project was at Malakal.[204] Another part of the ECDR project saw UNDP deliver 12 HF radios and five Very High Frequency (VHF) radios. With the partnership of NEMO, Palau National Communications Corporation (PNCC), the

MOE, and Palau Energy Authority, the radios were installed at 12 locations around the country, including the remote islands of Hatohobei, Sonsorol, Kayangel, Angaur, and Peleliu.[205]

An additional project is the World Meteorological Organisation (WMO) Climate Risk and Early Warning Systems (CREWS) Pilot Project that installed a low-cost, low-tech early warning system that consists mainly of bells placed around Ngaraard, Ngiwal, and Kayangel. The Palau NWS has the lead for implementation in partnership with NEMO and PRCS, the latter of which is partnering with the Palau Meteorological Service to conduct table-top exercises and drills to familiarize host communities with the system.[206]

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. 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.

There are many resources, stakeholders, and components to consider before, during, and after a natural disaster. This section will discuss country-specific, humanitarian, regional, government, and U.S. DoD information sources.

Palau Information Sources

National Emergency Management Office (NEMO)

On the government's central website, NEMO's page provides updates on current emergencies, operational reports, after-action reports, and various guides, brochures, and framework documents, as well as lists and maps of available shelters.

P.O. Box 100
Koror, Palau
Tel: 680-587-6366/6367
Fax: 680-587-6368
Email: *nemo@palaugov.org*
Web: *https://www.palaugov.pw/the-national-emergency-management-office/*

Palau Red Cross Society

PRCS' main office is in Koror, and there are PRCS volunteers throughout the islands. PRCS can activate its EOC in times of emergency, and it uses the EOC for communications and coordination. PRCS has stood up RDATs in each of the 16 states, and they maintain a storage space with a truck, telephones, hand-held radios, AEDs, and other materials useful to the RDATs.

First Floor of the OEK Building
Across Ernguul Park
P.0. Box 6043
Koror, Republic of Palau 96940
Email: *info@palauredcross.org*
Tel: 680-488-5780 / 5781
Mobile: 680-775-PRCS (7727)
Fax: 680-488-4540
Web: *www.palauredcross.org*
Facebook: palauredcross

Belau Association of Non-Governmental Organizations (BANGO)

BANGO serves as an information hub for Palau's NGOs, civil society, and public and private sector for development and relief projects.

PO Box 3090
Koror, Palau 97940
Tel: 680-775-3214
Email: *bango.palau@gmail.com*
Web: *https://bango-palau.business.site*
Facebook: BANGO.Palau

Humanitarian Information Sources

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.
Web: *https://www.unocha.org/pacific*
For OCHA situation reports, click on "Subscribe" button on top of page.
Twitter: @UNOCHA_Pacific

Pacific Humanitarian Team

The Pacific Humanitarian Team (PHT) is a network of humanitarian organizations that work together to support Pacific Island countries (Cook Islands, the Federated States of Micronesia, Fiji, Kiribati, Nauru, Niue, Palau, the Republic of the Marshall Islands, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu) in preparing for and responding to disasters. The PHT operates under the co-leadership of the UN Resident Coordinators in the Pacific, based in Fiji and Samoa, and includes UN agencies, the Red Cross/Red Crescent Movement, regional and bilateral organizations, national and international NGOs, faith-based and community-based organizations, and donor partners. OCHA is the Secretariat.[207]
Web: *http://pacifichumanitarian.info/*

ReliefWeb

ReliefWeb is a service of UN OCHA that consolidates information and analysis from organizations, countries, and disasters for the humanitarian community.

A subsection of ReliefWeb is ReliefWeb Response (RW Response), which replaced HumanitarianResponse.info in November 2022. RW Response aggregates operational content from other humanitarian action platforms to provide an authoritative source of information. The goal is to ensure that humanitarians can share, find, and re-use critical information quickly and efficiently.
Website: *https://reliefweb.int/*
RW Response: *https://response.reliefweb.int/*

PreventionWeb

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

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

IFRC is the world's largest humanitarian organization, comprised of its 192 National Societies including the PRCS, 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.[208] The IFRC's Suva Cluster comprises 11 National Societies in the North Pacific, including Palau. Through a sub-delegation in the North Pacific, the Cluster Delegation provides support to the PRCS.[209]
Web: *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 Red Cross Red

Crescent Societies, make up the Red Cross Red Crescent Movement.[210]
Web: *https://www.icrc.org/en*
Facebook: @ICRC
Twitter: @ICRC

Global Disaster Alert and Coordination System (GDACS)

GDACS is a cooperation framework between the UN, the European Commission, and disaster managers worldwide to improve alerts, information exchange, and coordination in the first phase 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, as well as regional and international organizations at a global level.
Website: *https://vosocc.unocha.org/*
The latest alerts can be found here: *http://www.gdacs.org/Alerts/default.aspx*
To subscribe: *http://www.gdacs.org/About/contactus.aspx*

ThinkHazard!

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

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/*

Regional Information Sources

Pacific Disaster Net

Pacific Disaster Net is an online platform for DRM and Climate Change documents, reports, alerts, data, projects, and professionals for the Pacific region. The platform is an ongoing live service provided by the SPC, UNDP, UNDRR, and IFRC. While climate change is broader than the traditional scope of HADR, many Pacific Island countries and territories approach DRR in tandem with CCA.
Web: *http://www.pacificdisaster.net/main*

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).
Web: *https://www.usaid.gov/*

USAID Bureau for Humanitarian Assistance (BHA)

USAID/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 fulfils its mandate of saving lives, alleviating human suffering, and the reduction of 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 prepare for, respond to, and recover from humanitarian crises.[211]

USAID/BHA products include situation reports and maps, which are available via email mailing lists as well as via 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 (PDC Global)

Pacific Disaster Center (PDC Global) has trademarked an early warning and decision support system called DisasterAWARE®. DisasterAWARE® is primarily for DM practitioners and senior decision makers. It supports DRR and best practices throughout all phases of DM 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 community, including government agencies and humanitarian assistance organizations serving at local, state, federal, and regional levels.[212]

PDC Global also provides a public version, Disaster Alert, which offers open access to a world map documenting 18 hazard types.[213] Disaster Alert also has a free, early-warning app to receive customizable maps 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.[214]

Web: *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. Importantly, APAN's technology team has been supporting HADR operations for over 15 years.[215] APAN has played an integral role in the success of disaster responses, such as the 2015 California Wildfire Response and the 2013 Typhoon Haiyan Response in which they provided organizations and militaries a centralized location to share information, increase situational awareness and decrease response time and duplicated efforts for best practices in HADR services.[216]

Web: *https://www.apan.org/*

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

NOAA, including the 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 the U.S.'s Pacific partners, including Palau. The U.S. NWS serves Palau via a regional forecast office in Guam and via an office on Babeldaob.

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
Web: *https://www.weather.gov/gum/#*

Joint Typhoon Warning Center

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

Drought Monitor

The U.S. Drought Monitor is a map released every Thursday. It shows parts of the U.S. that are in drought, and, since 2019, it has included the U.S. Affiliated Pacific Islands, including Palau. Produced jointly by the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln, NOAA, and the U.S. Department of Agriculture. The NDMC hosts the website of the drought monitor and the associated data, and it provides the map and data free-of-charge to interested agencies.[217]
Web: *https://droughtmonitor.unl.edu*

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.
Web: *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. Indo-Pacific Command. CFE-DM provides training and education to help U.S. and foreign military personnel navigate complex issues in DM and humanitarian assistance. They produce country focused disaster management reference handbooks, after action reports, best practices, and lessons learned for advancement in response coordination. CFE-DM also works to improve cross-coordination and reduce duplication of efforts and promote U.S. involvement in civil-military consultations and dialogues with relevant HADR parties. CFE-DM provides resources and updates at its website, as well as via their Facebook and Twitter accounts (@cfedmha).
Web: *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*

CFE-DM Disaster Information Reports are available for download at: *https://www.cfe-dmha.org/Publications/Reports*

INFRASTRUCTURE

Palau has historically built infrastructure and institutions that deliver health and education services, but to further improve standards of living, future investment will need to consider differing demographic needs, including those surfaced by gender and disability analyses. Moreover, the country's infrastructure will face stressors if plans to expand high-end tourism succeed as greater air and road access will be required alongside more reliable power and water utilities. The impacts of climate change and natural hazards will also influence investments. In the post-COVID economic world, Palau will at least initially look to donors, development partners, and private sector investors.

Transport

The Ministry of Public Infrastructure, Industries, and Commerce oversees most areas of transport infrastructure and regulation. The Bureau of Aviation operates the main international airport. Except for Malakal port, which is owned by Koror State but operated by a private company, state authorities maintain control over airfields, ports, and roads within their jurisdiction.

Airports

Palau has three airports or airfields. The main airport, Roman Tmetuchl International Airport, is operated under the U.S. Federal Aviation Administration (FAA) and U.S. air traffic control. The small airfields on Peleliu and Angaur are managed and operated by their respective states. United Airlines, Japan Airlines, Korean Air, and China Airlines maintain scheduled flights to/from the international airport.[218] The largest aircraft to service Palau is the Boeing 767-200.[219] Cargo services are provided almost daily by United Airlines Cargo and by Asia Pacific Air, a subsidiary of Tan Holdings, which provides charter services out of Guam. Domestic carriers are limited to small tourist charter lines.[220] Pacific Missionary Airlines, based in the Federated States of Micronesia, maintains twice weekly scheduled inter-island flights from Koror to Angaur and Peleliu on single-propeller, 5-9 passenger aircraft.[221]

The international airport is overseen by the Bureau of Aviation. Belau Transfer and Terminal Company (BTTC) provides ground handling services for all airlines except United. BTTC maintains a small amount of cargo storage space at the old terminal, and United has a dedicated storage area. Blue Bay Petroleum's refueling services deliver all Jet A1 refueling services at the airport. The small airport has a total aircraft parking area of 25,000 m^2 (269,000 square feet) and four hard stands on the North Apron.[222]

A 2021 Pacific Region Infrastructure Facility survey of airport and airfield conditions showed that the main airport's runway condition was satisfactory, having been resealed most recently in 2004. There is no record of the strips on Peleliu or Angaur having been resealed, and their pavements were in extremely poor condition.[223] Table 3 shows the codes, runway lengths, and surfaces of Palau's airports.[224]

Seaports

Palau has dozens of docks and marinas throughout the country with 30 being regularly maintained and served. Ten of these docks and

Airport	IATA/ICAO Code	Runway Length	Surface	Elevation
Roman Tmetuchl International Airport	ROR / PTRO	#9: 2,195 × 60 m (7,201 × 197 feet) #27: 2,195 × 60 m (7,201 × 197 feet)	Asphalt / concrete	54 m (176 feet)
Peleliu Airfield	n/a	1,828 × 12 m (6,000 × 40 feet)	Gravel / grass	9 m (3 feet)
Angaur Airfield	n/a	2,134 × 46 m (7,000 × 150 feet)	Gravel	9 m (3 feet)

Table 3: Codes and Runway Lengths for Palau's Airports

marinas are located in the main commercial district of Koror while the others are found throughout the other states. With the exception of the main port of Malakal (Koror), the facilities are used by small boats. There are upwards of 600 small (up to 20 m or 65 feet long) passenger and cargo boats that ply the islands. Two cargo-passenger vessels are dedicated to service between Koror and Peleliu and Koror and Angaur;[225] one of these, the Odesangel Dil, can handle roll-on/roll-off (RORO) activities,[226] and both of these ferries depart from the dedicated ferry dock near the main Malakal port.[227] The Peleliu and Angaur Transport Authorities oversee their respective docks. The islands of Hatohobei and Sonsorol in the southwest are the furthest inhabited outer islands and are serviced every three months by vessels contracted by their states, which charter a local dive vessel for this purpose.[228] Table 4 displays the locations and types of boat landings available on each island.[229]

Island	State	Dock / Jetty / Marina	Location	Details
Angaur	Angaur	Angaur Dock	N 06.9094317696; E 134.1428102277	Dock: 75 m (246 feet)
Babeldaob	Aimeliik	Bkurrengel Dock	N 07.4400303086; E 134.4723263749	-
		Kamasang Dock	N 07.4164972147; E 134.4951418061	
	Airai	Marina	N 07.3638163123; E 134.5063445585	-
		Marina Airai	N 07.3622190958; E 134.5065146616	-
		Uchulangos Dock	N 07.3583163677; E 134.5621971109	-
	Melekeok	Melekeok Jetty	N 07.4903251725; E 134.6393878387	Dock: 50 m (164 feet)
	Ngaraard	Urung Dock	N 07.6435730125; E 134.6295913434	Dock 1: 64 m (209 feet); Dock 2: 40 m (131 feet)
		Ngkeklau Dock	N 07.6232645593; E 134.6430113583	-
	Ngarchelong	Oketol Dock	N 07.6881249781; E 134.6256399385	Dock: 320 m (1,050 feet)
		Ollei Dock	N 07.7190099497; E 134.6084570522	Dock: 73 m (240 feet)
	Ngardmau	Ngardmau Dock	N 07.6090198730; E 134.5620373419	-
	Ngaremlengul	Bkulangriil Dock	N 07.5244909041; E 134.4992759990	-
	Ngatpang	IboBang Dock	N 07.4935464562; E 134.5239051249	Dock: 87 m (285 feet)
		Kamesang Dock	N 07.4959210009; E 134.4853664324	Dock: 83 m (272 feet)
		Miked Dock	N 07.4879092058; E 134.4804220902	Dock: 34 m (111 feet)
	Ngiwal	Ngiwal Jetty	N 07.5574301295; E 134.6373509723	-
		Imekang Dock and Ramp	N 07.5372600827; E 134.6251354554	Dock: 20.5 m (67 feet)
Hatohobei	Hatohobei	Beach Landing	N 03.0057058928; E 131.1245027263	-
Kayangel	Kayangel	Kayangel Dock	N 08.0821548140; E 134.7158251703	Dock: 115 m (377 feet)

Table 4: Docks and Landings by Island

Island	State	Dock / Jetty / Marina	Location	Details
Koror	Koror	Dock former pontoon bridge point	N 07.3621295487; E 134.5030414666	-
		Neco Marina	N 07.3370206875; E 134.4576048111	-
		Peleliu and Angaur Ferry Dock	N 07.3335150808; E 134.4574183364	-
		Mariculture Dock	N 07.3289295826; E 134.4500183240	-
		Marine Surveillance Dock	N 07.3294121911; E 134.4498537854	Pier 1: 60 m (196 feet); Pier 2: 81 m (265 feet)
		T Dock	N 07.3514236571; E 134.4791737298	East Dock: 69 m (226 feet); West Dock: 136 m (446 feet)
		M Dock	N 07.3384710658; E 134.4670733554	Dock: 220 m (721 feet)
		Ngermid Dock	N 07.3350835793; E 134.5019124329	-
Peleliu	Peleliu	Peleliu Dock and Ramp	N 07.0489585939; E 134.2667523249	Dock: 76 m (249 feet)
		South Peleliu Dock (Kambek)	N 6.985580; E 134.222047	Dock: 110 m (360 feet)
Sonsorol	Sonsorol	Beach Landing	N 05.3245899580; E 132.2236839141	-
		Beach Landing	N 4.653874; E 131.948283	-

Table 4: Docks and Landings by Island (cont.)

Port of Malakal (Koror)
Latitude: 7.331256
Longitude: 134.456967

Located 3 km (1.86 miles) from central Koror town, the Port of Malakal is the country's main international cargo hub. Adjacent to the cargo port are the fishing and diving / tourism docks; both are operated independently from the cargo port, which is managed by BTTC. BTTC owns and operates all ground handling equipment, including top loaders, forklifts, and prime movers/tractors. There are no facilities for storing containers, and there are no reefer points. The single 600 m^3 (21,000 cubic feet) warehouse is used for breakbulk.

The cargo port handles some 4,000 twenty-foot equivalent units (TEU) of containerized cargo annually although actual throughput varies widely depending on season. Historically, approximately 50% of containers imported are for the country's major supermarket chains, and end-of-year or other holiday periods see an uptick in container traffic. Containers must all be unloaded by gantry crane, as no container cranes are available. Breakbulk facilities are also available, and the port handles some 1,200 metric tons of breakbulk every year. There is no dedicated RORO berth; Kyowa Shipping uses a special RORO vessel to serve the main dock.

The cargo port is in a protected lagoon. It has two main docks, each able to handle vessels up to 150 m (500 feet) in length. The docks are 164 m (538 feet) and 154 m (505 feet), respectively, with a safe draft of 9 m (29 feet) and with a self-imposed draft of 7 m (22 feet). Access to the port is via channels through the outer reef.[230]

Roads

Traffic in Palau moves on the righthand side of the road, as in the U.S. The maximum speed limit is 40 km per hour (25 miles per hour), and vehicle traffic slows through villages.

Palau has approximately 85 km (52 miles) of highways and approximately 36 km (22 miles) of unsealed roads. Major resurfacing work on the main loop road on Babeldaob was completed in 2018, and the road is in excellent condition.

Peripheral roads surfaced with gravel are also in good condition. U.S. Army engineers undertake some of the road construction and maintenance on particular roads in Compact States, and one of these roads is the Babeldaob main loop; thus, specifications follow the American Association and State Highways Transportation official design policy.

Peleliu and Angaur each have a small road network. Peleliu has approximately 4 km (2.5 miles) of sealed road from the port to the main town; the rest is unsealed.

The Babeldaob loop is mainly inland and significantly above sea level except in the eastern sector near Karaeru, where the road crosses a low lagoon area by causeway. Causeways between Koror, Meyuns, and Malakal are also the only road connections among the southern Babeldaob islands. Access from the main island of Babeldaob to Koror is by way of a suspension bridge,[231] which was completed in 2002 by Japan's Kajima Corporation.[232] The regulated mass limit for vehicles on the Koror suspension bridge is sufficient for the transport of standard shipping containers.

As of 2021, the Statistics Office reported approximately 7,500 cars and trucks registered in Palau.[233]

The Public Works Bureau performs basic road maintenance – e.g., vegetation management, storm drain and culvert debris clearing, and small-scale landslide removal. Pavement repairs and other major works are outsourced. Maintenance equipment consists of two 5-ton dump trucks and a wheel loader.[234]

Railways

There is no rail network in Palau.

Waterways

In addition to the 600 cargo/passenger boats that travel among the islands, several hundred speed and dive boats ply the waters of Palau[235] and serve as the main inter-island means of transport. River or lake transport is not common as inland water bodies are shallow, narrow, and not more useful than local roads for transport.

Many small, short rivers traverse Babeldaob island. Ngerdorech River, on the island's east side, is Palau's longest river at less than 10 km (6.2 miles) in length. A small tourist boat does operate on lower portions of the river, but it enters the river at the ring road and does not put in anywhere else along the river.

Given the abundant annual rainfall, Palau's streams and rivers are typically permanent. River channels are generally narrow, at most a few tens of meters (less than 0.10 miles) wide, and they are bordered by rainforest or mangroves. Small seasonal streams occur on Koror, Malakal, and the Arabesang islands (part of Koror State).

There are two natural, freshwater lakes, Ngardok Lake and Ngerkall Pond, both in Babeldaob's remote upper catchment; neither is larger than 10 hectares (25 acres) in area. Neither has any boat traffic, and neither has significant habitation along its shores.[236]

Schools

The Ministry of Education (MOE) is responsible for the education of children ages 6-17 years; education for Palauans in this age group is compulsory. Instruction is free in public schools, which accommodate more than 91% of school-age children (approximately 3,000 students). The MOE serves students in 18 public elementary and high schools. Elementary schools include grades 1-8, and there are 17 of them; high school incorporates grades 9-12, and there is only one public high school, Palau High School in Koror. There are an additional seven private kindergartens and elementary and high schools independently operated under charter from the MOE.[237] Many teachers – in both public and private schools – are foreigners, commonly from the Philippines and Japan.[238]

For school year 2020-2021, there were 1,712 students in all public elementary schools and 547 students at Palau High School. In total, there were 2,259 students enrolled in the public schools. MOE reports that 12 of the elementary schools enroll fewer than 100 students.[239] Statistics on school enrollment and completion are lacking. However, school censuses in recent

years suggest 100% enrollment in primary education and greater than 90% enrollment in secondary education. In addition, total years of schooling number 16-17 years,[240] indicating that both some enrollment in early childhood education and some post-secondary (tertiary or vocational) education are common. Both boys and girls attend primary school at high rates with less than 2% of adults having had no exposure to formal schooling,[241] and some 96% of adults (male and female) are literate.[242] Moreover, in 2014, the country reported approximately 95% completion rates across the board for primary school enrollees. There is some indication of longer school lives for Palauan women, of whom more than 80% have some tertiary education versus 75% of men with some tertiary education.[243]

The country's economy requires skilled workers, and Palau High School offers both academic and technical or vocational programs. The Career and Technical Education program focuses on students who seek practical knowledge, skills, and experiences that meet some of the requirements for industry-recognized credentials in Natural Resources (Agriculture), Business Information, Health and Human Services (Tourism and Hospitality, and the Health Career Pathway), Industrial Engineering (Construction Technology and Automotive Technology), and Liberal Arts.[244] Palau Community College (PCC) has its roots in the colonial era and was founded on the basis of technical education. As of 2022, PCC awards Associate-level degrees in Applied Science, Science, Technical Studies, and Arts in 21 programs ranging from Agricultural Science, through Business Accounting, Community and Public Health, Construction Technology, Criminal Justice, and Education, to Environmental-Marine Science, Palauan Studies, and Tourism and Hospitality. Additional certificates are offered in Agriculture, Automotive Mechanics, Construction, Criminal Justice, Electrical Technology, and General Electronics. PCC is also the center for continuing education and adult high school for the country.[245]

Palau complies with the U.S. Individuals with Disability Education Act. Inclusive education is not explicitly defined in laws and policies, but education for all children is addressed in various laws and policies, especially the 1989 Programme and Services for Handicapped Children Act that requires such children be provided education in regular classrooms and regular schools. More recently, the Special Education Policy affirms that education for children with disabilities shall be free, appropriate, and public from birth through 21 years of age. Individualized education plans (IEP) for children with disabilities are developed and approved annually by IEP teams that include parents, special and regular teachers, school principals, and other service providers. Parents of children with disabilities are involved in awareness programs organized by government and non-government agencies, including Palau Parents Empowered (PPE), which, since 2010, has collaborated with special education programs in conducting radio talk shows on the importance of education for children with disabilities. PPE also conducts its own radio talk shows at least once every quarter.

While Palau's Disabled Person's Anti-Discrimination Act regulates access to public buildings for persons with disabilities, accessibility is not fully guaranteed due to the lack of rehabilitation centers and assistive devices, including accessible communication formats, such as braille or sign language interpretation. Ensuring accessibility for schools was included in the 2006-2016 Education Master Plan and the Special Education Policy. On a case-by-case basis, the use of school-purchased assistive technology devices is made available for students both at home and in school if the IEP team determines that the child needs those devices to receive free and public education, as guaranteed in law.[246]

Disaster Risk Reduction in the Education Sector

MOE is a stakeholder in national DRR and CCA activities for various reasons, notably

that schools can serve as community rallying or evacuation points and that school curricula provide opportunities to spread DRR concepts to the youth who may then pass it onto their families.

The MOE has incorporated climate change and disaster risk management into the public school science curriculum for grades 7-8 and provides support to teachers through climate science training based on the new curriculum.[247] In addition to ensuring the subjects are part of formal education, MOE participates in government and community-based planning activities as state-level Disaster Risk Reduction Action and Evacuation Plans lay out the expectation that suitable school buildings are identified and climate- and disaster-proofed to serve as evacuation shelters.[248] This use will impact various MOE facilities.

In a 2020 survey, the MOE's facilities numbered 118 buildings – both educational and administrative. The primary MOE office west of downtown Koror, opposite Palau High School, includes large conference rooms, the server room (first floor), and offices, all of which are air conditioned with some electric power provided by a 51-kilowatt (kW) solar photo-voltaic (PV) system installed in the parking lot in 2010. The ministry owns several cars and speedboats for travel to schools on main and outer islands.[249] Most school buildings are more than 50 years old. A 2021 survey found that Koror Elementary School and Palau High School are still structurally sound but do require extensive refurbishment.[250]

Beyond physical plant assets owned and managed by MOE, schools' communication systems are likely to become tools for both early warning and disaster management communications. In terms of technology available for administrators, teachers, and students, on the main islands, each student in public school is given a personal tablet with connectivity to the MOE's intranet. Three remote island schools are not connected to the MOE's intranet or to the internet, and, therefore, student and teacher access to computers is limited. A 2020 survey found that most MOE employees in the Ministry office use Apple desk or laptop computers while elementary schools have about 2,000 Android tablets, 200 iOS tablets, and a mix of desktops for student use. MOE has tried to put Palau's 2018 connection to international fiber-optic networks to use; most MOE campuses – i.e., schools, office sites, and the central office – have a secured wireless access network that is directly connected to the internet.

MOE employs 400-450 people, including teaching staff and administrators. Most communication is carried out in person or over the telephone, although texting and iMessage direct messaging are increasingly popular; all files and information are shared through email. In the pandemic-induced remote working environment, communication shifted to Slack, Google Drive, Zoom, and iMessage.[251]

Among the key infrastructural issues that MOE is using to address disaster risk and climate change is the construction and improvement of water collection and storage (mostly rainwater catchment) at its schools in remote areas. After the destructive 2016 drought, USAID, IOM, and the MOE partnered to improve water systems at 10 elementary schools. Since completion of the improvements in 2018, the program has involved water quality management teams – four students, one science teacher, and one parent – responsible for and trained to maintain the collection system, conduct monthly water quality testing, and send reports to MOE. In addition to providing clean water to schools for normal operations – including meal preparation – the catchment systems are intended as emergency water supplies for their surrounding communities.[252]

Although tsunami is a less frequent hazard than drought or storms, Palau is among the countries benefitting from the Japan Partnership Fund-backed UNDP Strengthening School Preparedness for Tsunamis in the Asia Pacific Region project. UNDP delivered Tsunami Preparedness Kits to Palau, the first country of five in the region to receive these kits as Phase II of the project. This delivery is intended to build on UNDP's Disaster Resilience for Pacific

Small Island Developing States project, launched in Palau in 2019 when UNDP facilitated a Disaster Emergency Preparedness Workshop and supported disaster drills. During those exercises, nine schools, 904 students, including 13 students with disabilities, and teachers and administrators participated. The UNDP handover to Palau's MOE saw delivery of 15 sets of tsunami preparedness kits consisting of waterproof First Aid kits, waterproof torches, reflector vests, ropes, hard hats, waterproof clip boards, coach whistles, and waterproof storage containers.[253] The UNDP-backed drills have continued, and every September, National Preparedness Month in Palau, students throughout the country participate in various risk reduction activities, including roadside awareness campaigns, talk shows, a preparedness fair, and multi-hazards drills; Photo 5 shows one of the tsunami evacuation drills carried out in 2022.[254]

Photo 5: Melekeok Elementary School Students Participate in Tsunami Evacuation Drill

Communications

In 2017, the Telecommunications Act elevated the Division of Communications to the Bureau of Communications and granted it regulatory jurisdiction and authority over interstate operations. The Bureau is also tasked with developing policies to address online safety and security. All major communications assets are owned by either the Palau National Communications Corporation (PNCC) or Belau Submarine Cable Corporation (BSCC).

BSCC, a state-owned enterprise, owns and operates the submarine cable system that connects Palau to the regional international cable hub in Guam. BSCC then offers internet bandwidth to local retail service providers on a wholesale basis. A second submarine cable connection, funded by Australia's Department of Foreign Affairs and Trade and USAID, was slated for completion in late 2022 and full connection in early 2023. Under the supervision of BSCC, this cable is expected to improve the reliability of international connectivity, required for commerce and business.[255]

The media and telecommunications spheres are small with limited competition among voices and service providers, but the sectors are relatively free. Most Palauans are reached by modern communications and media platforms.

Telephones

Fixed-line subscriptions: 8,000 (2020)
Mobile subscriptions: 24,000 (2020)

While fixed-line teledensity is approximately 41 per 100 people, mobile-cellular subscriptions vastly outstrip the population with an estimated 134 subscriptions per 100 people,[256] reflecting the fact that many people have more than one line and many foreign laborers have local lines.

PNCC, privatized in 1982, is mostly independent and dominates telecommunications services. Palau Mobile Corporation, a subsidiary of Taiwan's Viamedia, has a small share of 3G mobile services.[257] PNCC delivers PalauCel mobile services across voice, text/SMS, and mobile data at a cost of US$0.15-0.20 per minute of voice calls, US$0.06-0.20 per text message, and US$0.15-US$2.00 per gigabyte of mobile data. In areas of Peleliu, Koror, Airai, and portions of Ngaremlengui 4G-LTE 700 (Band 28) and 3G-WCDMA 900 (Band 8) services are available while mobile customers in Kayangel and most areas of Babeldaob Island have access to 3G-WCDMA 900 (Band 8) and 2G-GSM 900 services.[258] More than three-quarters of Palauans use an Android mobile device with most of the

remainder using an Apple handset.[259]

Internet Access

A July 2022 estimate found that 18,900 Palauans use the internet, more than the estimated population in a sign that some people or businesses have multiple subscriptions while foreign workers also are active internet users.[260] Outside the main islands, cost and connectivity continue to hamper access.[261] Although PNCC dominates telecoms services, Palau Telecoms provides some internet and broadband services.[262] PNCC delivers digital subscriber line (DSL) internet to homes and businesses with download speeds of up to 20 megabits per second (Mbps). However, with most Palauans using a mobile telephone, access to the internet via mobile device accounts for more than 50% of web traffic[263] using PalauCel's 2G, 3G, and 4G plans (4G only in Koror and Airai).[264] In terms of use, approximately 70% of Palau internet users browse using Chrome, and more than 94% use Google as their primary search engine. There are as many social media accounts registered in the country as there are estimated internet users with nearly three-quarters of social media users active on Facebook while no other social media platform appears to claim more than 12% of market share. Approximately 99% of social media users access social media platforms via their mobile device.[265]

Mass Media

The constitution provides for freedom of expression, and there are few indications of efforts to restrict this right. There have been no reports of the government attempting to disrupt or censor digital or traditional media,[266] although the small size of the media market is, itself, a limitation as the numbers of would-be advertisers or paid subscribers are insufficient to promote competition among outlets and voices. There are several independent news outlets, including newspapers and broadcasters, but they often struggle financially. Regional and international news services are available both online and via digital television.[267] PNCC's ICTV, a digital television service, incorporates major news and information channels from Japan, the Philippines, South Korea, and the U.S.[268]

The local media scene is dominated by English-language outlets. Publicly funded, commercial, and community outlets exist, and international (particularly Philippines and U.S.) outlets have large shares of the television market. Radio has long been the most-trusted medium. However, broadcasting was hampered from 2013, after a succession of hurricanes struck northern areas of the country, until 2022, when a UNDP project repaired antennas.[269] Most traditional media outlets have websites that replicate their news content from other platforms. For example, Tia Belau (https://www.tiabelaunews.com/) is the oldest newspaper and is widely considered the most independent news source in the country; the second print/digital outlet is the Island Times (https://islandtimes.org/). In 2007, Oceania TV (OTV), owned by local and foreign investors, began broadcasting 24 hours every day with news and educational and cultural content in both English and Palauan. It is not carried by PNCC. There are several government, private (music), and religious radio stations reaching most communities.[270]

NEMO works with the following radio stations to ensure broadcast of storm watches and warnings: T8AA 87.9 FM, WPKR 88.9 FM, and AM Radio 1584.[271]

Post

The Palau Postal Service is an agency of the executive branch of Palau's government and is under the direct supervision of an appointed Postmaster-General. Palau Post handles a reported 2,000 letters and parcels daily. The main post office is in downtown Koror.[272]

Utilities

The Palau Energy Administration (PEA), a government department, in collaboration with the Palau Public Utilities Corporation (PPUC), a public corporation owned by the government, is responsible for management, implementation, and maintenance of new energy projects and

infrastructure. PEA is the regulatory authority for energy production, purchase, and sale. PPUC is responsible for all remaining aspects of the electricity generation, transmission, and distribution business.[273] PPUC is also responsible for water and wastewater systems. Both electricity and water and sanitation services are small-scale and require significant investment to maintain and update to meet the country's emissions and pollution targets.

Power

Palau is highly dependent on imported diesel for its energy needs, and this reliance makes the country vulnerable to global market disruptions and means that customers pay high rates for both vehicle and boat fuel and for electricity.[274] Estimates indicate that 92% of the electricity sector could be powered by solar and wind if those technologies are effectively deployed. Gains related to the transport sector would require deployment of electric vehicles (cars and trucks), boats that use synthetic or alternative fuels or batteries, and hydrogen storage.[275]

There are upwards of 8,000 PPUC electricity meters throughout the country.[276] The country's total installed electric generation capacity stands at 28 megawatts (MW) to meet a peak demand of 14 MW. The country reports that 100% of the population has access to the electric grid with generation dominated by diesel (97.5%).[277] There are five main conventional power plants supplying electricity. The two largest are the Malakal (15.5 MW) and Aimeliik (10 MW) stations on Koror and Babeldaob, respectively. The other three (Angaur, Peleliu, and Kayangel) have a combined capacity of 2.8 MW.[278] Only 2-4 MW is generated by solar farms or PV installations, although the country has a renewable electricity generation target of 45% by 2025.[279] A 2021 infrastructure survey noted three key solar installations in Koror and Airai; the largest is a 300-kW station at the international airport.[280] Peleliu has one 168-kW solar PV plant with plans for an additional 206-kW solar PV project. Angaur also has one 100-kW solar PV system while Kayangel has one 63-kW solar PV plant with a battery storage system of 175 kilowatt-hours (kWh).[281]

PPUC's transmission system includes an 80-km (50-mile) 34.5-kilovolt (kV) tie link between the Malakal and Aimeliik generating stations. It is a single circuit line, supported on concrete poles. Transmission lines also connect to twelve 34.5/13.8-kV step-down stations.[282]

Because of difficulties adapting the extant grid to intermittent renewables, the country has begun participating in other innovative projects. The Armonia project, construction of which launched in 2018, includes 35 MW of dispatchable solar power coupled with 45 MW-hours of energy storage. It is the product of a public-private partnership between the country and France's Engie SA.[283]

There are two main fuel suppliers, both private companies – i.e., Blue Bay Petroleum and Isla Petroleum and Energy (IP&E, which operates the Shell brand license). Both operate retail service stations on the main islands of Koror and Babeldaob, and both deliver fuel for power generation. Fuel is transported by tanker trucks over the roads on Babeldaob and Koror and by sea to the other islands. Peleliu, Angaur, and Kayangel are supplied by the Peleliu state vessel Orngatanf II, a double-bottomed RORO barge with a 12,000-liter (3,170-gallon) capacity. There are no retail fuel stations on outer islands.[284]

Water and Sanitation

In July 2013, PPUC water and wastewater operations became responsible for the delivery of water supply and sewage systems. As of 2021, the water system serviced about 98.9% of the urban population and 86.2% of the rural population, or 96% of the total population.[285] There are 15 public water supply systems that rely on surface water intakes and four that rely on groundwater;[286] all of these systems are monitored regularly by the Palau Environmental Quality Protection Board for water quality, including chlorine residual, bacteria, and turbidity.[287] The Koror/Airai Water Treatment Plant, the country's largest water treatment plant, is in Ngeruobel, Airai State; it delivers

clean (drinking) water to the states of Koror and Airai.[288] Ngarchelong State at the very north of Babeldaob island has two treatment plants and a pumping facility, the latter at Ollei. Ngaraard, also in northern Babeldaob, has a treatment plant and pumping station at Olema and another plant at Ngeklau. In Babeldaob's northwest, Ngardmau's treatment plants are fed by dam intakes with treatment plants at Ngardmau and Imeong. Additional treatment plants are located at Ngerengel, Ibobang, Ngatpang, Ngchesar, Melekeok, Aimeliik, and Mongami.[289]

Palau produces 1.1 billion m^3 (300 billion gallons) of water per year from surface run-off. The island of Babeldaob has five major and 11 minor watersheds. The Koror/Airai Water Treatment Plant uses 11,000 m^3 (3 million gallons) a day from the Ngerikiil River in Airai[290] and 3,700 m^3 (1 million gallons) a day from the Ngerimel Dam,[291] all for use by the three-quarters of the population that live in greater Koror-Airai.[292] The Ngerimel Dam has a storage capacity of 11.4 million liters (20 million gallons) of water.[293] The rest of the population relies on groundwater sources and rainfall;[294] Peleliu, Angaur, and Kayangel rely on freshwater lens aquifers. A mid-20th century estimate found that Peleliu has a lens that is capable of producing 3,700 m^3 (1 million gallons) per day of freshwater. Regardless of access to piped or treated water, almost every household has some type of rainwater catchment system, ranging from plastic-lined steel barrels to aluminum tanks to constructed cement tanks.[295]

In 2015, more than 42% of homes in Koror and Melekeok were connected to the public sewer system while 43% used on-site septic systems. Koror has a centralized sewerage system servicing more than 80% of the Koror population. The network comprises 40 km (25 miles) of gravity mains, 13 km (8 miles) of force (pumped) mains, 46 pump stations, and a sewage tertiary treatment plant on Malakal, which, along with Ngerekebesang (Meyuns town), is fully served by the Koror network, built in the mid-1970's and in poor condition as of 2021.[296] Some 7,500 m^3 (2 million gallons) of raw wastewater is treated per day at the Malakal wastewater treatment plant.[297]

The Melekeok sewage treatment plant services the Capital Building and the surrounding village. The plant is capable of processing 1,500 m^3 (396,000 million gallons) per day.[298] For the majority of states, septic tanks are an appropriate technology for the very low population density.[299]

Various threats hang over the water and sanitation system. Palau's surface, ground, and coastal water quality is threatened by pollution. Sedimentation is common, caused by poor erosion control, loss of riparian buffers, and poor land-use practice. Moreover, groundwater sources are polluted by poorly maintained septic tanks, leaching from nearby landfills, and saltwater intrusion.[300] In addition, climate change-induced rising temperatures will affect both the amount of and the demand for water. The Ngerikiil River and Ngerimel Dam system and other surface water sources are particularly vulnerable when hot, dry conditions persist for weeks or months, as they did during the 2016 drought. Due to the near absence of aquifers on Babeldaob, and the resulting reliance on riverine reservoirs, periodic episodes of water shortage during even moderate drought conditions will be a continuing vulnerability. Finally, saltwater intrusion during storms and tidal flooding and the continued risk of overextraction from wells endanger local aquifers. Angaur, Peleliu, and Kayangel already have filtration systems due to the levels of salinity in their freshwater aquifers.[301] Indeed, while there are three historic wells on Angaur, the state's roughly 200 residents rely wholly on one well as the other two suffered reductions in water quality due to both lack of maintenance and saltwater intrusion.[302] A Pacific Community-backed project in 2015 rehabilitated a disused well to be used as an emergency backup.[303]

HEALTH

Palau has achieved progress in numerous health areas, including lowering maternal mortality rates, eradicating communicable diseases, providing universal healthcare coverage, improving reproductive health, and immunizing its population against several diseases, including the measles[304] and COVID-19.[305] Regarding the health-related UN Sustainable Development Goals, for Goal 3 – Ensure healthy lives and promote well-being for all at all ages – Palau is faring relatively well compared to other countries in the region, particularly in reproductive, maternal, newborn, and child health. Reportedly, 100% of births are attended by skilled health personnel. Palau has also reached its target on other indicators under the health-related goal, including reducing its under-5 mortality rate (15.9 per 1,000 live births) and lowering the neonatal mortality rate (8.4 per 1,000 live births).[306]

The most significant health challenge facing Palau is the rise of non-communicable diseases (NCD) and conditions, particularly diabetes, heart disease, kidney failure, and obesity. As with many Pacific countries, NCDs account for the majority of death and disability in Palau.[307] Climate change is anticipated to have a worsening effect on health vulnerabilities in Palau and other Pacific Island areas.[308] Climate and weather variables pose threats to food and water security and cause outbreaks of waterborne and vector-borne diseases.[309] While Palau has a relatively good communicable disease surveillance system, climate change will also exacerbate the challenge of infectious diseases.

Health Care System Structure

The Ministry of Health and Human Services (MHHS) is mandated to take positive actions to attain a healthful environment, promote health and social welfare, protect family and health safety, and provide health care services throughout the Republic of Palau. Application of this mandate includes providing quality, comprehensive, evidence-based, and accessible healthcare services for patients and the community and achieving the ministry's vision of healthy communities with access to high quality healthcare services.[310]

MHHS is organized into at least four bureaus, each responsible for different divisions, offices, and services:[311]

- Bureau of Hospital and Clinical Services
  - Division of Ancillary Services
  - Division of Medical Services
- Bureau of Public Health Services
  - Division of Primary and Preventive Services
  - Division of Oral Health Services
  - Division of Environmental Health
  - Division of Behavioral Health Services
  - Office of Public Health Epidemiology
  - Office of Public Health Information Systems
  - Office of Health Promotion and Community Advocacy
  - Office of Public Health Finance and Administration
- Bureau of Nursing Services
  - Clinical Nursing
  - Public Health Nursing
- Bureau of Hospital Administration and Support Services
  - Office of Human Resource Services
  - Office of Budget and Finance Services
  - Office of Health Information Systems Services
  - Office of Facilities and Maintenance Services

Additionally, the Bureau of Aging, Disability, and Gender (BADG) was reported in March 2021 to be moving to the health ministry as part of the President reorganizing a range of government ministries to change their compositions and responsibilities, a shift expected to take months

pending all necessary legislation.[312]

Palau has a universal health care system, implemented in 2010. The National Health Financing Act established the Palau Healthcare Fund (HCF) to provide health care through an individual mandate. The HCF Governing Committee consists of the Minister of Finance, the Minister of Health, the Administrator for the Social Security Administration, a Governor's Association representative, and a Chamber of Commerce representative.[313] The HCF has two components: 1) National Health Insurance (NHI), which pays for in-patient and off-island referrals, and 2) Medical Savings Account, which covers medical checkups and out-patient services. All Palauan employees must join the program, with 2.5% of an employee's earnings withheld for it and employers also required to contribute a 2.5% matching share.[314] Unemployed individuals are encouraged to join the NHI program by paying voluntary premiums of US$40.95 quarterly. The national government pays NHI subscription costs for unemployed citizens who are over 60 years of age or have a disability.[315] NHI covers off-island referrals, including airfare and 80% of treatment cost, with the main off-island referral locations being in Taiwan and the Philippines,[316] though there are also off-island medical providers listed in Guam and India.[317]

Belau National Hospital is the main health facility with an 80-bed capacity. Public health services are also available at four primary care community health centers, also known as super dispensaries, in Melekeok, Ngarchelong, Ngaremlengui, and Peleliu. There are five additional satellite community health centers or dispensaries in Airai, Kayangel, Angaur, Sonsorol, and Hatohobei. All residents live within one-half hour travel time to a primary care facility. There are also four private primary care clinics with pharmacies and facilities for ambulatory care and associated ancillary services.[318] While it is not generally economically feasible to decentralize inpatient care, steps to build inpatient management capacity on outer islands may further be explored. The Government aims to have enough trained and qualified staff to provide quality services in all outlying dispensaries.[319]

Foreign funding also contributes to efforts to strengthen Palau's health system. In April 2022, the UNDP COVID-19 Response Support in the Pacific project delivered a cargo van to Palau's MHHS to support the transfer of essential medical and non-medical goods and equipment. The cargo van handover was part of US$1.8 million in support delivered to Pacific Island countries through the Fiji-based UNDP Pacific Office and funded by the Government of Japan.[320] In 2019, the government of Palau signed a Memorandum of Understanding to improve primary healthcare infrastructure by implementing a US$1.5 million grant from the India-UN Development Partnership Fund to support the rehabilitation of six community health centers.[321] The partnership fund supported rehabilitation of two community health centers, Northern Community Health Center in Ngarchelong State, handed over to the MHHS on 15 November 2021,[322] and Southern Community Health Center in Peleliu, handed over to MHHS on 9 December 2021.[323]

Health Strategies and Surveillance

The MHHS national strategic priorities and accompanying strategic activities are outlined in the Palau-WHO Cooperation Strategy for 2018-2022.

Palau National Strategic Priority 1. To provide accessible and quality people-centered preventive, primary, and hospital services for NCDs as a priority

Activity 1.1 – 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 cessation.

Activity 1.2 – Establish partnerships between

community and primary health care services for community-based rehabilitation.
Activity 1.3 – Work on alcohol harm reduction through restrictions or bans on advertising, marketing, and promotions.
Activity 1.4 – Endorse further "sin taxes" on unhealthy food based on experiences in the tobacco and alcohol areas.
Activity 1.5 – Conduct NCD surveillance activities.
Activity 1.6 – Draft traffic accident prevention regulation by 2018.

Palau National Strategic Priority 2. To effectively manage and support the health workforce through existing fellowship and internship programs for new graduates overseas

Activity 2.1 – Increase the number of sponsored course students through Pacific Open Learning Health Network (POLHN) each year and strengthen continuing professional development.
Activity 2.2 – Develop an internship program and conduct a midterm evaluation by 2022.

Palau National Strategic Priority 3. To strengthen the role of communities as partners in health

Activity 3.1 – Profile the health situation of individuals and communities, linking people's health needs to the health system.
Activity 3.2 – Develop capacities of communities on health planning to ensure health needs and challenges are reflected in national policies strategies and plans.[324]

Each of Palau's strategic activities is linked to at least one of the subregional focus areas (SFA) outlined in the unique sub-regional cooperation strategy between Oceania and the WHO. The Pacific Island Countries and Areas–WHO Cooperation Strategy 2018–2022, signed by Palau and 20 other Pacific Island countries and territories, lists the following sub-regional strategic priorities and SFAs:
Subregional strategic priority 1: Strengthening leadership, governance, and accountability:

SFA 1.1 Pacific regional leadership, governance, and partnership
SFA 1.2 National leadership and governance
SFA 1.3 Integrated, people-centered health services
SFA 1.4 Essential medicines, technologies, and antimicrobial resistance
SFA 1.5 Health information systems
SFA 1.6 Gender equality

Subregional strategic priority 2: Nurturing children in body and mind:

SFA 2.1 Services for mothers and children
SFA 2.2 Vaccine-preventable diseases

Subregional strategic priority 3: Reducing avoidable disease burden and premature deaths:

SFA 3.1 NCDs and health promotion
SFA 3.2 Infectious disease control and elimination

Subregional strategic priority 4: Promoting ecological balance:

SFA 4.1 Emergency preparedness and response
SFA 4.2 Health system resilience
SFA 4.3 Towards universal access to safe water and sanitation[325]

While the Palau national and Pacific sub-regional WHO cooperation strategies were published in 2017, a Palau national infrastructure investment plan published in September 2021 in the midst of the COVID-19 pandemic details recently identified health infrastructure issues and priorities. According to the Palau National Infrastructure Investment Plan 2021-2030, key issues include:

- The incidence of NCDs is now the most common health concern, similar to many other Pacific Island Countries.
- Palau lacks an extended care facility for people who cannot be cared for at home but do not require or qualify for the services of an acute care hospital. Extended care patients are occupying hospital beds needed for

acutely ill patients, resulting in an inadequate number of beds per capita.
- The Belau National Hospital, Angaur Community Health Center, Kayangel Community Health Center, Peleliu Community Health Center, and Southwest Islands Community Health Center are all located in low-lying areas, which may be subject to flooding and temporary loss of use.
- The Ministry plans to further develop the main community health centers in Melekeok and Peleliu into mini hospitals.
- There is need for a new public health building, which the Ministry has a 10-year plan to build.
- Old medical equipment needs to be replaced.

Health-related infrastructure demands prioritized by MHHS, according to the national infrastructure investment plan, are:
1. Relocation of the main hospital to a new facility with a dedicated biosafety laboratory, adequate and appropriate space for hyperbaric oxygen chamber, larger laboratory department to accommodate all new laboratory technologies and major medical equipment, dedicated hospice care, adequate operation rooms to accommodate new technologies and medical equipment, expanded supply warehousing with an adequate cooling system, dedicated storage space with a proper and adequate cooling system, adequate space for hazardous waste management, adequate parking spaces that include disability access, expansion of wards, expansion of negative pressure isolation rooms, environmental health facilities with a dedicated laboratory, and incorporation of workers lounges into the overall structure.
2. Construction of a dedicated public health building.
3. An extended care facility.
4. Further development of the main community health centers in Melekeok and Peleliu.
5. Replacement of other medical equipment, including adequate incinerator equipment; a lighting system that is energy efficient; new plumbing systems; a radio center; major medical equipment, and general major equipment.
6. Access to transportation services.[326]

Palau is a member of the Pacific Island Health Officers Association (PIHOA) and Palau's Minister of Health and Human Services, Mr. Gaafar Uherbelau, was serving as the PIHOA Executive Board President as of latter 2022.[327] PIHOA's key regional and institutional priorities, reiterated in the PIHOA Strategic Framework for Action 2018-22, include:
1. Health Information Management Systems and Surveillance
2. Human Resources for Health
3. Performance Management and Quality Improvement
4. Laboratory Strengthening
5. Pacific Basin Primary Care Office
6. Regional Policy and Engagement
7. Health Leadership
8. Health Advocacy
9. Health Security – Preparedness and Response[328]

Palau's MHHS operates two complementary infectious disease surveillance systems, notifiable disease surveillance and syndromic surveillance. Thirty-eight priority infectious diseases are monitored as national notifiable diseases at the Belau National Hospital, in community health centers, and in private health clinics. The Belau National Hospital uses a web-based electronic reporting system for notifiable diseases and carries out syndromic surveillance on six syndromes. The MHHS EpiNet team is a multi-disciplinary group of clinical and public health professionals that coordinates surveillance and outbreak response activities. The team also functions as a monitoring body for surveillance data, a facilitator of communication, and a body to inform policy and planning. Palau's health ministry participates in monthly U.S.-Affiliated Pacific Islands Epi Rounds calls that facilitate peer-to-peer exchange of surveillance information and outbreak updates.[329]

Public health laboratories are an essential part of disease surveillance, providing services including disease and outbreak detection, emergency response, and environmental monitoring. The Palau laboratory system is comprised of a single national laboratory, located at the Belau National Hospital. A small, tiered sub-national system exists, with limited laboratory capacity located in three private clinics and eight community health centers. The community health centers are linked to the hospital and refer samples accordingly. A 2019 WHO evaluation report identified key strengths and areas for improvement in Palau's laboratory service and surveillance system. Key strengths included a good level of laboratory service capacity despite a small population base; the existence of testing algorithms for core diagnostic capacities; established referral networks (out of country); the ability to perform key tests rapidly; and participation in external quality assurance programs for targeted tests. Key areas for improvement included the implementation of a drafted national laboratory quality system; formalizing a national laboratory accreditation/licensing regulator or system; and implementing cross-sectoral engagement of human health and animal health linkages. Additional priority testing services could be considered, in conjunction with health ministry support to complement existing services.[330]

Communicable Diseases

Dengue and tuberculosis are the communicable diseases that most impact the Republic of Palau. The situation of these and other diseases in Palau are detailed in this section.

Dengue

Dengue fever has been a longstanding problem in Palau. Public health programs were implemented in 2001 to conduct surveillance for cases of the disease.[331] Palau experienced a 15-month dengue outbreak from December 2018 to March 2020, during which time a total of 828 cumulative cases were reported, with the majority (73%) reported in Koror state. There were 302 hospital admissions (36% of all cases) and two dengue-related deaths. The highest number of cases recorded in a single month was 141 cases in July 2019.[332] The outbreak was declared over the week of 9 April 2020, when the number of cases fell below the outbreak threshold of 10 cases per month (within 28 days). Palau experienced a new dengue serotype in the 2018-2020 outbreak. Dengue infection is caused by any one of four closely related mosquito-transmitted dengue viruses, called serotypes. The MHHS alerted the public of a dengue outbreak in December 2018, following the country's first ever laboratory confirmation of two cases with dengue serotype-3 (DENV-3), encountered at the Belau National Hospital on 28 October and 11 November 2018.[333] Palau had previously only recorded cases with dengue serotype-2 (DENV-2).[334] During the 2018-2020 timeframe, the Pacific region also saw dengue outbreaks across various island countries and territories, with the majority of identified serotypes being serotypes 1 and 3.[335]

Throughout 2022, Palau's surveillance data for dengue-like illness showed relatively low numbers. Numbers rose in the summer but did not exceed single digits for dengue-like illness (not laboratory confirmed cases) in any epidemiological week. Figure 5 shows Palau's surveillance data for dengue-like illness as of the 44th epidemiological week of 2022 (30 October to 5 November).[336]

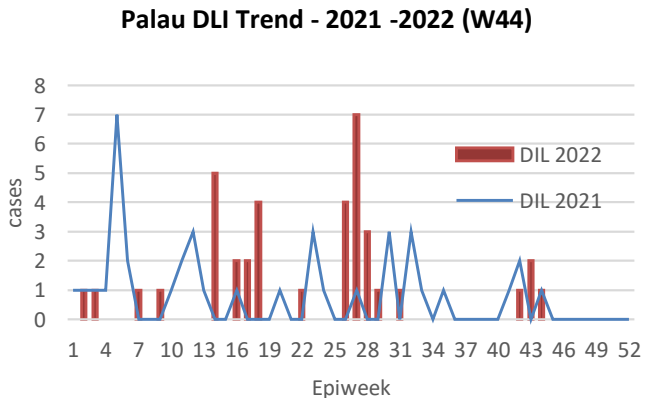


Figure 5: Surveillance Data for Dengue-Like Illness (DLI) in Palau as of Week 44 of 2022

Dengue virus is transmitted by female mosquitoes mainly of the species *Aedes aegypti* and, to a lesser extent, *Aedes Albopictus.* Dengue is common in warm, tropical climates. Symptoms vary widely, from so extremely mild that people may not know they are infected to flu-like symptoms. Suspected dengue often manifests with a high fever accompanied by two of the following symptoms: severe headache, pain behind the eyes, muscle and joint pains, nausea, vomiting, swollen glands, or rash. In rare cases, the infection progresses to severe dengue, which can be fatal. There is no treatment for the infection, only symptom management.[337] Dengue epidemics tend to have seasonal patterns, with transmission often peaking during and after rainy seasons, which increase mosquito population levels. Climate change is exacerbating the global risk of dengue as warming temperatures allow Aedes mosquitoes to move further north and south of the equator and into higher altitudes. Research models project that by 2085 an estimated 5-6 billion people or 50-60% of the future world population will be at risk of dengue transmission, compared with 3.5 billion people or 35% of the future population without climate change.[338]

Tuberculosis

Tuberculosis (TB) is endemic in Palau.[339] As of 2021, there were nine reported cases of TB among Palau's population of approximately 18,000 people, giving an incidence rate of 51 per 100,000 people. This is lower than the global incidence rate of 134 per 100,000 people in 2021.[340] TB incidence in Palau has swung up and down several times over the past two decades. Since 2000, when Palau's TB incidence was 64 per 100,000 people, it has hit a low of 26 per 100,000 in 2012 and a high of 149 per 100,000 in 2016.[341] These swings are reflected in Figure 6, which shows the incidence of TB for Palau from 2000 to 2021, with the green line indicating all reported new and relapsed TB cases and the red line indicating the incidence of TB comorbidity with the human immunodeficiency virus (HIV).[342]

Globally, many TB targets have been off track since 2019 after the COVID-19 pandemic reversed years of progress in providing essential TB services and reducing TB disease burden. In 2021, the Western Pacific region accounted for 18% of people who developed TB worldwide.[343]

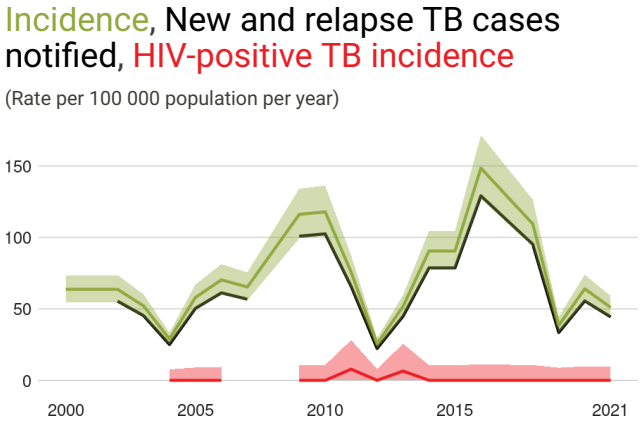


Figure 6: Incidence of TB in Palau (2000-2021)

The Communicable Disease Unit in Palau's MHHS has on staff a designated TB nurse and a TB physician.[344]

TB is a bacterial disease caused by Mycobacterium tuberculosis, which most often affect the lungs. It is transmitted from person to person through the air, as coughing, sneezing, and spitting propel TB germs into the air. About one-quarter of the world's population have the TB bacteria but have not fallen ill with the disease and cannot transmit it. People infected with TB bacteria have a 5–10% lifetime risk of falling ill with TB disease. Those with compromised immune systems are at higher risk of falling ill; this group includes people with malnutrition, diabetes, who use tobacco, or who are living with HIV. Once active TB disease develops, symptoms may include coughing, fever, night sweats, or weight loss. Symptoms may remain mild for many months, and, thus, many people delay seeking treatment, thereby increasing the potential for transmission to others. Treatment can take many months, and incomplete treatment contributes to the proliferation of drug-resistant TB strains. TB is preventable and curable, but if it is not properly treated, the disease leads to death in 45% of TB-infected people and in almost 100% of people co-infected with TB and HIV.[345]

HIV

While recent data is scarce,[346] as of 2017 Palau had only reported 13 cases of diagnosed HIV, which can lead to acquired immunodeficiency syndrome (AIDS) if untreated.[347] Only five people were reported to be living with HIV in Palau, per 2016 data.[348] There have been no known HIV criminalization cases in Palau, and there are no HIV-specific laws or laws relating to disease in Palau's criminal code.[349] HIV prevalence in Palau and 10 other Western Pacific countries is low, with overall regional prevalence estimated at 0.1%, as of 2018.[350]

Leprosy

Palau has made remarkable progress against leprosy (Hansen's disease) in the past four decades. As of 2019, the last year leprosy data for Palau was available, there were four cases registered for treatment in the country.[351]

Palau reached an elimination target in 1995 when it reported fewer than 10 prevalent cases.[352] From 2000 to 2018, Palau was among several Pacific Island areas, along with American Samoa, Nauru, and Tuvalu, that sporadically returned to a pre-elimination status, mainly due to relatively small population sizes and detection of cases of foreign origin.[353] Palau reached its target prevalence rate in 2017, when it first fell below 1 case registered per 10,000 people. The new case detection rate also fell from over 50 new cases per 100,000 people in 1983 to less than 10 new cases per 100,000 people in 2018.[354]

Almost a century ago, Palau designated Ngerur Island as a leprosy colony. In 1931, a facility was established on less than 0.02 km^2 (0.007 square miles) of land, and the 18 residents arrived. Records are unclear as to how long the facility stayed in operation.[355] In 1999, the Koror State Legislature re-zoned Ngerur Island from conservation land to a resort center zone.[356]

Leprosy is a curable chronic infectious disease caused by Mycobacterium leprae. It mainly affects the skin, peripheral nerves, mucosa of the upper respiratory tract, and the eyes. Leprosy is likely transmitted via droplets from the nose and mouth during close and frequent contact. The disease is curable and early treatment can prevent disability. However, left untreated, it can cause permanent damage to the skin, nerves, limbs, and eyes. Since 1981, the WHO has recommended multidrug therapy (MDT), which kills the pathogen and cures the patient of leprosy.[357] MDT treatment lasts six months for pauci-bacillary cases, characterized by a small number of lesions with a low bacillary load. MDT treatment lasts 12 months for multi-bacillary cases, characterized by numerous infiltrated skin lesions displaying high bacillary loads.[358]

Leptospirosis

Leptospirosis has been a longstanding problem in Palau, and Public Health programs were implemented in 2000 to conduct surveillance for cases of the disease. Between May 2000 and June 2006, 81 cases of leptospirosis occurred in Palau.[359] In 2014, two Japanese travelers developed leptospirosis after returning from Palau; the suspected source of exposure was swimming in Ngardmau falls following flooding from Typhoon Phanfone.[360] Obstacles for maintaining current accurate incidence rates include limited data and misdiagnosis. "Leptospirosis is likely to be present in many Pacific Island countries and territories, but limited data is available, partly due to a lack of understanding of the disease and the complexity of the diagnostic," said Dr. Salanieta Saketa, then deputy director of SPC's Public Health Division. Palau epidemiologist Cheryl-Ann R. Udui said in 2017 that a few cases of leptospirosis were detected in Palau following an increased testing of samples from sick people during a dengue outbreak.[361] Studies indicate Oceania has a particularly high leptospirosis burden.[362] The Pacific Islands have environmental conditions highly favorable for transmission of leptospirosis, a neglected zoonosis with highest incidence in the tropics and that is being exacerbated by climate change.[363] Leptospirosis, caused by bacteria of the genus Leptospira, is a disease that affects humans and animals. In humans, it can cause a wide range of symptoms, some

of which may be mistaken for other diseases. Some infected persons may not present with any symptoms. Without treatment, Leptospirosis can lead to kidney damage, meningitis, liver failure, respiratory distress, and even death.[364]

Other

Palau does not have a significant mosquito-borne disease burden beyond dengue. There is currently no evidence of an ongoing Zika Virus outbreak.[365] While the MHHS announced in November 2016 one laboratory-confirmed case of Zika virus infection[366] in a patient with no recent travel history,[367] no additional cases were confirmed,[368] and the U.S. Centers for Disease Control and Prevention (CDC) removed its Zika virus alert for Palau.[369] Palau does not have any areas with malaria.[370] No cases of locally transmitted chikungunya have been reported.[371]

Measles is not a current risk in Palau, which has not reported measles cases in years. The MHHS provides free measles vaccinations to adults and children.[372] Palau has kept a more vigilant watch for measles risk[373] following the major outbreak in Samoa in 2019-2020, a smaller outbreak in Tonga, and various cases in Fiji, American Samoa, and Kiribati.[374]

Coronavirus Disease 2019 (COVID-19)

As of 12 December 2022, Palau had reported a cumulative total of 5,933 COVID-19 cases and seven deaths.[375]

Palau's first recorded case of COVID-19 was detected on 31 May 2021 in a fully vaccinated traveler who arrived from Guam and tested negative several times before testing positive on the 21st day of quarantine. The patient was isolated and considered low risk for infecting others.[376] During the latter half of 2021, other COVID-19 cases were occasionally recorded but were usually isolated. After months of almost no cases, significant local transmission began occurring in January 2022. The number of daily new confirmed COVID-19 cases based on a 7-day rolling average went from 0 on 27 December 2021 until numbers peaked at 169.29 average daily cases on 28 January. The number of average daily new cases started to steadily decline after 5 February 2022 and stayed in the low single digits from mid-March to mid-April. A slight surge peaked on 26 April at 42.29 daily new cases based on a 7-day rolling average. See Figure 7 for a chart depicting the number of daily new confirmed COVID-19 cases in Palau from 27 August 2021 to 14 November 2022.[377]

With a total of seven deaths out of 5,933 cumulative COVID-19 cases,[378] Palau has experienced less than half of the world average COVID-19 death rate, as of 12 December 2022. Taken as a proportion of the population, the cumulative confirmed COVID-19 death rate was 387.08 per million people in Palau, compared to 834.41 per million people for the world.[379]

Palau had already vaccinated 97% of its adult population against COVID-19 by the time the country recorded its first case on 31 May 2021.[380] Palau led the world on COVID-19 vaccinations with more than 99% of its eligible population fully vaccinated by October 2021,

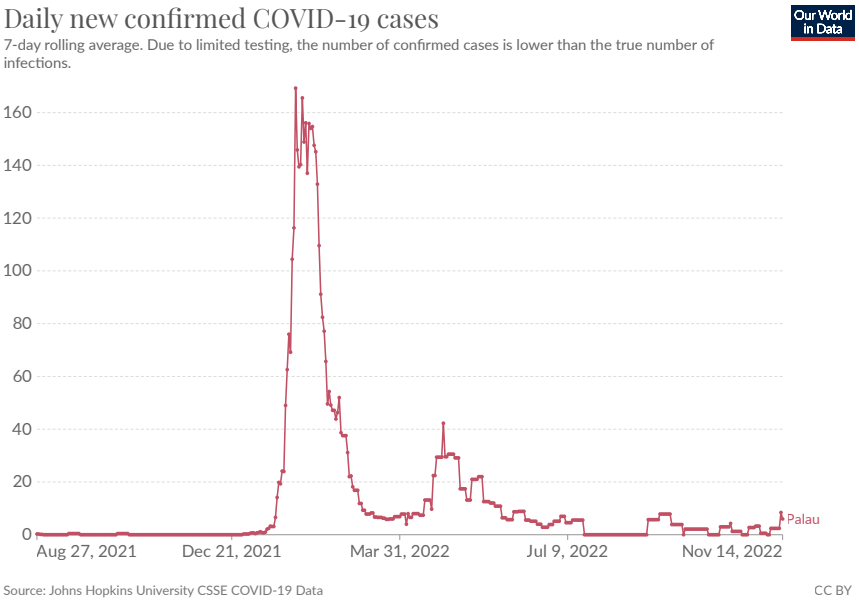


Figure 7: Daily New Confirmed COVID-19 Cases in Palau from 27 August 2021 to 14 November 2022

before significant local transmission occurred in January 2022.[381] Almost 15,000 people had been fully vaccinated out of a population of approximately 18,000, according to the MHHS.[382] As part of its program to encourage vaccine uptake, the government provided fuel vouchers to people receiving COVID-19 vaccines.[383]

Effective 25 October 2022, unvaccinated travelers aged 18 years and above may request a medical waiver for the vaccination requirement to enter the country, but upon approval, they would still be subject to requirements including self-monitoring and mask-wearing for five days, testing at a designated site, and isolating immediately if symptoms occur. Travelers under 18 years of age may enter Palau unvaccinated. As requirements change with the COVID-19 situation, questions may be submitted by email to travelers@palauhealth.org.[384]

Palau's MHHS activated its EOC in January 2020.[385] The Government of Palau issued a Certification of an Unavoidable Public Health Emergency for COVID-19 on 13 February 2020, a declaration that allowed it to access resources from a Hospital Trust Fund and expedite procurement processes, while also restricting flights to and from the country, closing schools, and limiting public gatherings.[386] The Government of Palau focused on preventing an outbreak as long as possible, implementing strict point of entry arrangements from the beginning of the pandemic, and initiating programs to support people's welfare and businesses. The border closures resulted in visitor numbers plummeting to zero by April 2020, resulting in a significant economic downturn, especially as tourism had been the lead sector driving economic growth prior to the pandemic.[387] The MHHS and the NEC developed the Ministry of Health Pandemic Coronavirus (COVID-19) Response Plan, 25 March 2020. The plan aligned with requests made for international support to enhance preparedness by improving testing capabilities, enhancing critical care capacity with alternate care sites, securing protective equipment for use by health providers, readying isolation facilities for suspected COVID-19 cases, and accelerating community outreach on infection prevention and control.[388] The Palau government also passed the Coronavirus Relief One Stop Shop (CROSS) Act to quickly provide temporary measures to address the hardship experienced by individuals, communities, and businesses. Approximately US$20 million was mobilized from national reserves and the disaster loan facility to fund private sector relief measures, and approximately US$21 million went to cover local revenue shortfalls and maintain government services. A total of US$60 million was authorized for borrowing to mitigate the socio-economic impacts of COVID-19 for fiscal year 2020-2021.[389]

Palau reopened its borders in January 2022 to revive the tourism industry.[390] Per MHHS updates including Directive 100-22 effective 9 July 2022, travelers do not need a negative COVID-19 test but must be fully vaccinated 14 days before departure to enter the country; individuals infected with COVID-19 shall be isolated for a period as deemed necessary by MHHS, and their close contacts shall self-monitor for 10 days and follow MHHS guidelines.[391]

The Pacific Humanitarian Team, with OCHA as technical lead, released their COVID-19 Response Plan on 12 May 2020; it covered Palau as well as the Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu. The inter-agency response plan consolidated efforts from UN agencies, funds, and programs, and the International Red Cross and Red Crescent Movement, while integrating inputs from the humanitarian NGO community to capture the perspectives of local organizations. A Joint Incident Management Team was established in January 2020 under the technical leadership of the WHO to support Pacific COVID-19 preparedness and response efforts in the health sector.[392] While UN support to Palau had usually been channeled through the Fiji-based sub-regional office, in October 2021, the UN system created a third Multi-Country Office based in Micronesia to cover

the Federated States of Micronesia, Marshall Islands, Nauru, Kiribati, and Palau.[393] The UNDP also planned to assist Palau, together with Fiji, Samoa, and Vanuatu, with border management in support of COVID-19 recovery and preparedness.[394]

In March 2020, USAID announced US$2.3 million in funding for the Pacific islands to support COVID-19 preparation, mitigation, and response efforts, including laboratory preparation, infection control, case and contact tracing, and public-health communications. In April 2020, the U.S. Government announced the release of additional humanitarian assistance from USAID's International Disaster Assistance (IDA), with Pacific islands receiving US$1 million in IDA funding to support risk communication, infection prevention and control, logistics, coordination efforts, and other efforts to counter COVID-19.[395]

The pandemic affected Palau much longer on the socioeconomic front than on the health front, and recovery efforts are focusing on small segments of the population that need special assistance. These sectors include homebound older people and persons with disabilities, including those with preexisting health conditions and who are largely dependent on caregivers and the financial support from their families; small farmers and women producers in rural areas who have been cut off from markets and have difficulty getting temporary unemployment benefits; and women and children survivors of domestic and gender-based violence, as domestic violence incidents reported to the police rose by more than 200% from March 2020 to July 2020.[396] These vulnerable groups were slated to be targeted for recovery assistance by US$2.4 million in ADB funding in August 2021.[397]

Non-Communicable Diseases

NCDs are among the key challenges facing Palau's health care sector. In 2019, NCDs comprised eight of the top 10 causes of death. This situation is reflected in Figure 8, which shows the top 10 causes of total number of deaths in Palau in 2019 and percent change 2009–2019 for all ages combined, per data from the Institute of Health Metrics and Evaluation.[398]

NCD-related health care costs account for as much as 55% of the health care budget.[399] In May 2022, First Lady Valerie Whipps stated, "We can see the result of the NCD crisis on the number of funerals every weekend." According to an MHHS official, more than 90% of cases referred off-island for medical care are NCD-related cases. The top three categories of referral cases are cancer, heart disease, and diabetes-related illnesses.[400]

NCDs were recognized as a national health crisis in May 2011 when Dr. Stevenson Kuartei, then Minister of Health, issued Executive Order No. 295 declaring a state of emergency for NCDs in Palau and calling for immediate action to reduce and eliminate the incidence of NCDs.[401] Almost half of adults in Palau (46.7%) self-reported their general health to be fair or poor in a 2017 NCD-oriented survey.[402] Palau's struggles with NCDs are similar to the challenges other Pacific Islands face. Palau's NCD Prevention and Control Strategic Plan of Action 2015-2020 reflected a multi-sectoral effort to halt and reverse the health and economic burden from NCDs. The plan's goals and targets were largely aligned with regional Pacific and WHO global NCD targets.[403]

Many initiatives to prevent NCDs have targeted behaviors, including diet and tobacco use, with cigarettes being made less affordable in the last decade.[404] Significant progress has been made in reducing rates of tobacco use. In 2000, more than 40% of males and more than 15% of females smoked tobacco, but by 2016 these numbers had declined to 23% of males and 8% of females over 15 years of age who smoked tobacco.[405] Obesity remains a considerable challenge, with over half of Palauan adults considered obese, and the trend is predicted to worsen.[406] Palau is listed among the top countries predicted to have a high risk of developing a significant childhood obesity problem in 2030,[407] with 2017 data indicating obesity rates of 40% among children ages 5-9 years and 30% among

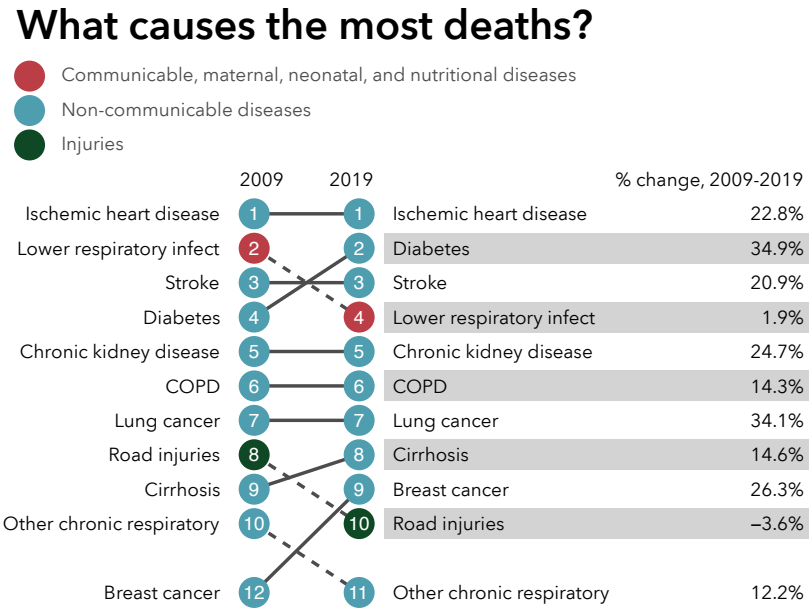


Figure 8: Palau's Top 10 Causes of Total Number of Deaths in 2019 and Percent Change 2009–2019

adolescents ages 10-19 years. These challenges are not unique to Palau, as the Global Atlas on Childhood Obesity shows that no country has a better than 50% chance of meeting their target for tackling childhood obesity.[408] However, the Pacific region faces even greater challenges with obesity, which has been partially attributed to the post-World War II influx of imported food, which likely had a disproportionate impact on island states with small populations.[409]

Training for Health Professionals

The professional training available in person in Palau is predominantly through the Palau Community College (PCC), which offers a public health associate degree, smaller healthcare-related specialized programs, and general practice and public health courses through a network of institutional partnerships. There are also online health education platforms widely used in Palau and across the Pacific for continuing professional development in health-related fields.

Palau had 32 medical doctors, or 17.68 medical doctors per 10,000 population, per 2020 data.[410] More widely across the healthcare field, per 2010 data, Palau had 72.8 skilled health workers per 10,000 population, including physicians, nurses, and midwives.[411] Among nursing personnel, as of 2020, Palau had 90 nursing professionals and 40 nursing associates. With a nursing personnel density of 72.6 per 10,000 population, Palau is well-positioned to avoid a shortage of these healthcare workers. Approximately 30.77% of Palau's nurses are foreign-trained.[412]

Based at PCC, the Palau Area Health Education Center (AHEC) was established in 2001 as a program of the University of Hawaii's John A. Burns School of Medicine. It was established in response to the 1998 report, Pacific Partnerships for Health, which advocated the promotion of training for the primary health care workforce among the U.S.-Associated Pacific Islands.[413] Palau AHEC coordinates postgraduate and undergraduate courses in General Practice and Public Health taught by the University of Auckland (New Zealand) Faculty of Medicine and Health Sciences and the Fiji School of Medicine's School of Public Health and Primary Care; these courses are given in Palau as well as in the Republic of the Marshall Islands and the Federated States of Micronesia.[414] There is no longer a medical residency program, but the public health training courses have been opened more widely to providers across the region.[415] Palau AHEC has also worked with PIHOA to fund public health training of healthcare workers in Palau and other Pacific Island areas through a grant via the University of California at Berkeley School of Public Health. The AHEC has also worked to gain the PCC's Associate of Science Degree in Public Health Program accreditation by the Accreditation Committee for Junior and Community Colleges/ Western Association of Schools and Colleges.[416]

PCC offers a Community and Public Health Associate of Science Degree. The degree program offers a specialized track in Emergency Health

Management, focusing on providing knowledge, attitude, and skills in the management of health matters during disasters. Another specialized track in development is for Nutrition and Environmental Health.[417] PCC also offers health-related special programs in occupational therapy aid, dental assistant, medical office technician, medical transcriptionist, and pharmacy technician.[418]

Palau healthcare workers also gain training through the Pacific Open Learning Health Network (POLHN). The network is a platform for distance education that provides free online courses for continuing professional development for health professionals in the Pacific. Headquartered in Fiji, POLHN was established in 2003 as a joint initiative among the WHO, the Government of Japan, and Pacific Ministers of Health. POLHN was developed to boost the knowledge, skills, and performance of health workers by bridging the gaps between geographically dispersed health workers in Pacific Island areas with an approach blending digital networks and physical infrastructure.[419] The network's four goals are: 1) improve health workers' access to continuing professional development (CPD); 2) provide CPD for health workers in the Pacific; 3) build capacity among local and regional institutions; and 4) support health workers to be motivated, confident, competent, technologically literate, and equipped to respond to the changing health needs of their communities. POLHN has more than 30,000 users and more than 30 learning centers across the South Pacific. The POLHN learning center in Palau is located in the Belau National Hospital. The network offers courses from partners including Fiji National University, the Pacific Paramedical Training Centre, and Medscape.[420] It also sponsors staff from Pacific ministries of health with five years of experience or more to take instructor-led postgraduate courses, which can lead to postgraduate certificates and diplomas.[421]

The Republic of Palau is the smallest country in the world by population to have established an Emergency Medical Team (EMT). The new, national EMT completed its inaugural 5-day training on 24 June 2022 to enhance preparedness for disasters, disease outbreaks, and other crises. Named "Team Klemat," after the rope that holds the sails of the country's traditional canoes, the 18-member EMT is comprised of health professionals including doctors, nurses, and logisticians trained to respond rapidly to sudden-onset emergencies or outbreaks. Team Klemat is focused on serving Palau's 18,000 people across more than 300 islands and is looking beyond the country to potentially respond to emergencies or disasters in neighboring countries and territories. Minister of Health and Human Services Gaafar J. Uherbelau stated, "In the Pacific, we are coping with COVID-19, worsening disasters due to climate change and outbreaks of infectious diseases such as measles or dengue. Palau may be small in terms of population size, but we are not only a small island state, we are also a large-ocean nation, and we need the capacity to cover communities dotted across hundreds of miles of Pacific Ocean. It is reassuring to know that when the next crisis strikes, Team Klemat can deploy immediately to provide high-quality medical care to protect people and save lives." The EMT's training was supported by the Government of Palau, WHO, and USAID. WHO's support for Team Klemat includes training, ongoing technical support, and procurement of equipment and supplies to facilitate future deployments. With their cache of materials, Team Klemat will be fully self-sufficient and ready to deploy within hours. Other EMTs in the Pacific with WHO support include the Cook Islands Medical Assistance Team (KukiMAT), Fiji Emergency Medical Assistance Team (FEMAT), CNMI EMT in the Northern Mariana Islands, Solomon Islands Medical Assistance Team (SOLMAT), Tonga Emergency Medical Assistance Team (TEMAT), and Vanuatu Medical Assistance Team (VanMAT). Teams are also being established in other Pacific Island countries and areas including Kiribati, the Republic of the Marshall Islands, Federated States of Micronesia, Papua New Guinea, and Tuvalu.[422]

WOMEN, PEACE, AND SECURITY

The Women, Peace, and Security (WPS) agenda encompasses efforts to increase women's meaningful participation in the promotion of peace and security through conflict prevention and resolution, peace negotiation, peacebuilding, peacekeeping, humanitarian response, relief aid, and economic recovery and development. The WPS agenda gained global visibility with United Nations Security Council Resolution (UNSCR) 1325, which was adopted in October 2000 and affirmed the important role women play in many aspects of promoting and maintaining peace and security. The WPS agenda has since expanded with the adoption of additional related UNSCRs: 1820 (2009); 1888 (2009); 1889 (2010); 1960 (2011); 2106 (2013); 2122 (2013); 2242 (2015), 2467 (2019), and 2493 (2019). These resolutions together address various issues of gender and security, including the need to stop gender-based violence and to promote women's roles in conflict resolution, recovery, and peacebuilding. The WPS agenda has also broadened to include applying a gendered perspective to humanitarian assistance, DM, DRR, and climate security for more equitable participation to address humanitarian needs and benefit the entirety of a society over the longer term.

While Palau is not among the 104 countries that have adopted a National Action Plan on WPS as of October 2022,[423] Palau was covered by the Pacific Regional Action Plan on WPS (2012-2015). The Regional Action Plan provided a framework for all Pacific Islands Forum (PIF) members to enhance women's leadership in conflict prevention and peacebuilding, mainstream gender in security policymaking, and ensure the human rights of women and girls are protected in humanitarian crises, transitional contexts, and post-conflict situations.[424]

Palau, along with several other Pacific Island countries and territories, is not included among the 170 countries in the Women, Peace, and Security Index[425] nor the 146 countries in the Global Gender Gap Report,[426] likely due to issues with data availability across enough indicators. However, the status of women in Palau can be gleaned through other measures.

Palau is culturally a matrilineal society where women traditionally hold positions of respect in their clans and communities, but women are still underrepresented in some contemporary decision-making roles. In terms of political representation, women comprise 7% of the bi-cameral Palau National Congress, Olbiil Era Kelulau, were they hold one seat in the lower house, the House of Delegates, and one seat in upper house, the Senate. In the House of Delegates, Delegate Victoria Ngiratkakl-Kanai was re-elected in 2020 and holds one of the 16 seats. In the Senate, Senator Rukebai Inabo was re-elected in 2020 and holds one of the 13 seats.[427] Among government ministers, women hold two of the nine ministerial positions (22%).[428] Women also serve in other senior political positions, including as Vice-President and as the President's Chief of Staff. Vice-President J. Uduch Sengebau Senior, shown in Photo 6 as she shakes hands with U.S. Navy Captain Hank Kim at the beginning of Pacific Partnership 2022,[429] was elected in November 2020. Vice-President Senior previously served two terms as a senator,[430] during which time she and Inabo represented Palau as senators in the 5th Pacific Women's Parliamentary Partnerships Forum in 2017.[431] Landisang Kotaro was announced as the President's Chief of Staff in January 2021 and is the first woman to hold that position.[432] Women comprise four of nine judges (44%) in the Judicial Branch.[433]

In legal and policy areas, Palau signed the Convention on the Elimination of All Forms of Discrimination Against Women in 2011 but was still working on ratifying it; as of 2021, the country reported that, as

Photo 6: Vice-President Senior and U.S. Navy Captain Kim Open Pacific Partnership 2022

with other human rights treaties, challenges remain regarding funding, capacity building, and resources.[434] Palau introduced a National Gender Mainstreaming Policy in 2018 and established the Bureau of Aging, Disability, and Gender. The strategic objectives of the Policy are for all women and men to participate in decision making in all areas of life; have the same opportunities to earn incomes and fulfil their needs; be safe and protected in their home, at school, in workplaces, and all other private and public spaces; and have the resources they need to be healthy and resilient and to support their well-being.[435]

In education, there is approximate gender parity. Enrollment in elementary school was nearly equal, with the ratio of girls to boys at 0.98 from 2014 through 2018. During the same period, gross enrollment in high school had a ratio of girls to boys at 1.11, indicating that slightly more girls than boys enrolled. Per 2015 census data, 51% of women and 48% of men attend tertiary level education like Palau Community College; a national review on the implementation of gender equality attributed this imbalance to more young men possibly studying internationally or entering the workforce. Women are underrepresented in science, technology, engineering, and mathematics (STEM) educational majors and professions and overrepresented in the education sector. Men comprise 77% of STEM majors, and women comprise 31% of people working in STEM occupations. However, women comprise 68% of people working in the education industry.[436] Both women and men have very high literacy rates. The rate of adult literacy, defined as people ages 15 years and above who can both read and write and understand a short simple statement about their everyday life, is 96.3% among women and 96.8% among men, per 2015 data.[437] In the business sector, women represent 35.5% of those employed in senior and middle management positions, per 2014 data.[438]

In the economic sphere, the World Bank's Women, Business, and the Law 2022 report analyzes laws and regulations that affect women's economic opportunity. Palau scored the highest in mobility and marriage, 100 out of 100 in each area, with women having the same rights to travel and in marriage as men. Palau scored 75/100 in areas of pay, entrepreneurship, and pensions. Women have the same access as men to various kinds of work although laws do not mandate equal pay for equal work; women have the same ability as men to sign contracts, register businesses, and open bank accounts, though no laws prohibit gender discrimination in access to credit; and the same retirement and pension ages apply to women and men, although periods of absence due to childcare are not accounted for in pension benefits. The lowest scores were 25/100 in workplace, 0/100 in parenthood, and 0/100 in assets. While a woman may get a job in the same way as a man, laws are lacking to prohibit gender

discrimination or sexual harassment. There is no prohibition against dismissing pregnant workers, and paid leave is not available to mothers or fathers. Laws do not grant equal authority over assets during marriage nor equal inheritance rights to sons and daughters.[439]

An area needing improvement is violence against women. The most comprehensive data comes from a 2014 Ministry of Health national survey, which found that 27% of women in Palau had experienced violence by their partner in their lifetime with 8.4% experiencing intimate partner violence in the last 12 months. Approximately 10% of women had been sexually abused by their partner in their lifetime with 3.5% sexually abused in the last 12 months. More than 15% of women had experienced sexual violence by a non-partner since the age of 15, and nearly 12% of girls younger than 15 had experienced sexual violence from a non-partner.[440] The Palau Judiciary responded to the issue seriously, granting 94% of domestic abuse restraining orders for cases filed from 2014 to 2016.[441]

Women's groups play an important role in Palauan civil society. Mechesil Belau, or Women of Palau, is an influential women's organization that has ensured women's input on key issues in Palau. Headed by Bilung Gloria Salii, the top-ranking matriarch of Koror State, the organization is composed of traditional women leaders from each of Palau's 16 states.[442] Between 1995 and 2020, Mechesil Belau successfully advocated for 25 national laws, three constitutional amendments, and one traditional law relating to culture, health, education, and the environment. The organization holds an annual Women's Conference, which has been funded by the governments of Palau, the U.S., and Taiwan.[443] Another women's organization, Otil e Beluad (Anchor of the Land), was instrumental in establishing Palau's nuclear-free constitution in 1979 and was nominated for a Nobel Peace Prize in 1988, largely due to the persistent efforts of former leader Gabriela Ngirmang, Mirair (leading woman or matriarch) of Koror.[444]

Palau has recently taken action to be more inclusive in DM efforts. In February 2021, staff members (21 women and 21 men) from public sector and civil society organizations involved in national and community disaster risk management received training to integrate a gender, age, disability, and cultural perspectives in disaster risk management policies and practices. The workshop was convened by the NEMO, the Bureau of Aging, Disability, and Gender, and the UNDP in partnership with Palau Red Cross, IFRC, the Pacific Community (SPC), and OMEKESANG Association of Palau, a civil society organization working for the rights of persons with disabilities.[445]

Women, Peace, and Security efforts are also funded by Australian Aid through Pacific Women programs in 14 Pacific Island countries,[446] including Palau.[447] Photo 7 shows a Pacific Women economic empowerment scoping study workshop in Palau.[448] The SPC, of which Palau is a member, supports efforts to fight gender-based violence,[449] including research through their Human Rights and Social Development Division.[450]

Photo 7: Participants in Pacific Women Palau Economic Empowerment Workshop (2018)

CONCLUSION

Climate change is one of Palau's chief concerns within the context of long-term DM issues. Pacific Island nations including Palau are among the most vulnerable in the world due to a combination of climate change-influenced factors, exposure to climate hazards and natural disasters, and an isolated, geographically remote location that poses logistical challenges to quick international assistance if needed. Palau is already being impacted by climate change, with rising sea levels and an increased incidence of extreme weather. Future impacts are anticipated to include changes in seasonal rainfall, temperature changes, and increasing ocean acidification.[451] These factors will stress available water resources and increase threats to homes and critical infrastructure.[452]

While Palau is located outside the main Pacific tropical cyclone tracks, occasional strong storms occur between July and November. After many quiet years, typhoons struck in 2012 and 2013, and a drought hit in 2016. These events prompted authorities to reevaluate Palau's disaster planning. In 2016, Palau amended the National Disaster Risk Management Framework, which provides for the strengthening of national disaster risk management mechanisms for improved disaster preparedness, response, recovery, and longer-term disaster planning and budgeting.[453]

The disaster response structure sits directly under the President, who chairs the Disaster Executive Council and may declare a state of emergency in the event of a natural catastrophe. Under the Vice-president, the National Emergency Committee can recommend that a state of emergency be declared. Finally, in the event of an emergency, NEC's NEMO coordinates disaster response and recovery. Meanwhile, cabinet ministries maintain emergency plans and operations centers that can lead or act in support of NEMO. State Governors have extensive power to manage emergencies within their own States but also can seek assistance from the national level when capacities are overwhelmed. This centralized structure benefits from the small size of the country and the population, as most agency leads and decision makers can be contacted and brought together within hours.

Epidemic and pandemic diseases comprised approximately one-third of disaster events that Palau experienced in the decade 2011-2020.[454] A large dengue outbreak from 2018-2020 affected more than 800 people with reported infections.[455] Dengue is one of several mosquito-borne illnesses that is predicted to worsen as climate change-induced warming expands the range of virus-carrying mosquitos to more areas.[456] Palau held off COVID-19 for 18 months until it recorded the first imported case on 31 May 2021, although significant local transmission did not begin occurring until January 2022. The country had reported 5,933 cumulative COVID-19 cases and seven deaths as of 13 December 2022.[457] Palau may have mitigated against the worst pandemic affects with its high COVID-19 vaccination rates and universal health care coverage, for which the WHO has been advocating in the wake of COVID-19.[458]

The Compact of Free Association between Palau and the U.S. is set to expire in 2024. The COFA sets out that the U.S. has full authority and responsibility for security and defense in Palau, which does not have its own military force. Renegotiating the COFA is a key part of the U.S. vision of a free and open Indo-Pacific. The Compact agreements with Palau, the Federated States of Micronesia, and Republic of the Marshall Islands are considered important to fending off an expansion of China's influence in the region, and Palau is among the few countries in the world that maintain diplomatic ties with Taiwan instead of China. A renewed COFA is also critical to continuing economic assistance to Palau, as this economic assistance is a key support to the island nation's disaster and environmental management and climate adaptation efforts.

APPENDICES

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

The list below describes the DMHA engagements that the U.S. (DoD or Coast Guard) has had with Palau in the last five years.

Pacific Partnership – July 2022

Pacific Partnership is the largest annual multinational HADR preparedness mission conducted throughout the Indo-Pacific region. Pacific Partnership 2022 (PP22) marked the 17th iteration of the mission. The mission team worked collectively with participating host and partner nations to enhance regional interoperability and disaster response capabilities, increase security and stability in the region, and foster new and enduring friendships in the Indo-Pacific. The Palau phase of PP22 concluded in Koror on 23 July. The PP22 team included representatives from Palau, Australia, Japan, the United Kingdom, and the U.S. During the mission stop, the PP22 team conducted more than 100 medical engagements including dental and surgical interventions, 71 veterinary interventions, two HADR workshops with 120 personnel trained, and a search and rescue exercise.[459] One HADR workshop ran 12-15 July and was organized by the U.S. Coast Guard, U.S. CDC, and CFE-DM with participation from Palau's NEMO, MHHS, and Office of Climate Change. The workshop included four subject areas tailored to specific Palauan humanitarian and disaster response stakeholders: Public Health Risk Communication, Climate Change Impacts, Maritime Search and Rescue, and disaster risk reduction and early warning.[460] The search and rescue portion was led by the U.S. Coast Guard and involved partners from Japan, Palau, and the United Kingdom. Historically, the U.S. Coast Guard and Palau hold regular search and rescue engagements to improve cooperation and processes between the Service and counterparts in Palau.[461] Among the key medical partners performing medical checks and interventions during PP22 was Military Sealift Command hospital ship USNS Mercy (T-AH 19). Capt. Jeffrey Feinberg, Mercy's commanding officer, praised participants, saying, "Every participant brought something new to the table, whether it was a safer way to construct the foundation for a building, a new approach to a patient procedure, or a more efficient means for disaster response." In addition to Palau, host nations for PP22 included the Philippines, Solomon Islands, and Vietnam.[462]

Koa Moana – June-July 2022

U.S. Marines and Sailors with Task Force Koa Moana (TFKM) 22 continued the work from previous TFKM iterations, conducting projects and subject matter expert exchanges throughout Palau from 19 June through 29 July 2022. TFKM is designed to strengthen and reinforce relationships between the U.S. and partner nations in the Indo-Pacific while enhancing interoperability with local security establishments. Since 2015, TFKM has demonstrated U.S. commitment to the region and a shared vision of a free and open Indo-Pacific. The service members that participate in TFKM are committed to the projects completed and the relationships built with the members of partner nations, and in recent years, service members from previous iterations have returned to continue their work and build on the relationships formed. Staff Sgt. Jackie Tran, an Explosive Ordnance Disposal (EOD) Response Element Leader with TFKM22, was also a member of TFKM20. Tran and his team completed various projects with the Norwegian People's Aid (NPA) during TFKM20, including surface area clearing in Peleliu, expansion of the airfield in Angaur, and sharing of knowledge and best practices in dealing with UXO with the NPA. The annual TFKM exercises have allowed service members to strengthen relationships

with local agencies, complete various projects, and improve joint operations to help make Palau a safer place. "The NPA and Koa Moana efforts throughout the years help increase capabilities in Palau, working towards ensuring the country is less impacted by the presence of Explosive Remnants of War," said Anthony Wyles, Programme Manager, Norwegian People's Aid. Koa Moana, meaning "ocean warrior," is designed to strengthen and enhance relationships between the U.S. and partner nations/states in the Indo-Pacific region, improve interoperability with local security establishments, and serve as a Humanitarian Assistance Survey Team afloat in support of U.S. Indo-Pacific Command's strategic and operational objectives.[463]

Cope North – February 2022

Air forces from Australia, Japan, and the U.S. participated in Cope North 2022 (CN22) 2-18 February 2022. The drill included an HADR component, large force employment, and aerial combat training exercise. The exercise kicked off with the HADR training event to reinforce the three countries' combined ability, and interoperability, to support the Indo-Pacific region during a natural disaster. Operations were set for Andersen Air Force Base and Northwest Field on Guam, the Commonwealth of the Northern Mariana Islands, Palau, and the Federated States of Micronesia. More than 2,500 U.S. Airmen, Marines, and Sailors were set to train alongside about 1,000 combined Japanese and Australian air force counterparts. Eight additional countries sent 16 officers to participate in the International Observers Program, which gives international field grade officers the opportunity to observe key parts of the exercise in the hope that they will participate in the future.[464]

Civic Action Team - 2021

The Civic Action Team (CAT) Palau, based at Andersen Air Force Base, Guam, spent six months in Palau in latter 2021. During that time, the CAT helped the local community rebuild structures and roads, trained locals, and strengthened regional partnerships. The CAT is a tri-service deployment that has been running for over 50 years. The team is from the 36th Civil Engineering Squadron, and they have six objectives: Community Construction Projects, Community Relations Projects, Monument Maintenance, Apprenticeship Program, Medical Care, and Camp Maintenance. The CAT-Palau completed over 7,000 hours of training for locals, over 1,000 hours of community construction, maintained a fleet of 28 vehicles, and more. Being able to train locals to sustain and manage facilities on their own is a key part of the mission.[465]

Koa Moana – July-December 2021

From July through December 2021, Military Sealift command's Spearhead-class expeditionary fast transport USNS City of Bismarck (T-EPF 9) supported Marines taking part in Koa Moana 21 in Palau. Koa Moana is designed to strengthen and enhance relationships between the United States and partner nations in the Indo-Pacific region, improve interoperability with local security establishments, and serve as a humanitarian assistance survey team afloat in support of U.S. Indo-Pacific Command strategic and operational objectives. In addition to civil service mariners aboard USNS City of Bismarck, approximately 200 U.S. Marines and Sailors from 1st Marine Division, 1st Marine Logistics Group, 3rd Marine Aircraft Wing, and I Marine Expeditionary Force Information Group, and Coast Guardsmen from Coast Guard District 14 took part in Koa Moana 21. Participants take part in exercise activities that enhance the interoperability necessary during HADR operations. These include engineering projects on the islands of Peleliu and Babeldaob. Other capabilities exercised as part of Koa Moana include medical, maritime law enforcement, and EOD. During one interagency law enforcement training event, the crew of USNS City of Bismarck, U.S. Marines, and agents with the Palau Narcotics Enforcement Agency conducted training with a team of canine working dogs.[466]

Pacific Partnership – August 2021

U.S. Pacific Fleet's annual humanitarian assistance mission, Pacific Partnership 21, concluded in Palau as U.S. Pacific Fleet and the CFE-DM co-hosted an HADR workshop 10-12 August. Disaster management experts from Taiwan also participated. During the workshop, participants from the U.S., Palau, and Taiwan shared experiences and lessons learned to identify best practices followed by various organizations and countries. "This event focused on facilitating knowledge exchange between Palau, Taiwan and the U.S. on issues of concern, thus empowering our partners to improve their infrastructure and ability to respond to disaster emergencies," said director of the CFE-DM, Joseph Martin. "Pacific Partnership acknowledges the complexity of disaster response operations and the role of civilian organizations as leaders in such operations." Throughout the week, lectures and expert exchanges focused on early warning response, search and rescue, interagency coordination, and enhancing telecommunication systems in times of crisis. Additionally, a case study was analyzed on information-based emergency operations in Taiwan, which highlighted best practices of Taiwan emergency operations systems for typhoons, earthquakes, and droughts.[467]

Typhoon Surigae Relief – April 2021

The crew of the Coast Guard Cutter Myrtle Hazard (WPC 1139) delivered emergency supplies, including water and food, to the island of Kayangel after a national emergency was declared by President Surangel Whipps Jr. after Typhoon Surigae devastated the region in mid-April 2021. The slow-moving typhoon brought significant rainfall and heavy winds, and it caused flooding and resulted in damage to homes and properties throughout the islands. On 18 April, the president declared a national emergency and made an official request to the U.S. embassy for assistance. Capt. Christopher Chase, commander, Coast Guard Sector Guam, and Ambassador John Hennessey-Niland, U.S. Embassy Koror, spoke by phone and determined what supplies were needed and the best method to deliver them. At the time the Myrtle Hazard's crew was conducting a patrol north of Guam and was recalled for the humanitarian mission. On Guam, supplies were collected by a number of different organizations. The cutter then departed Guam for the 800 nautical mile transit to Palau. Upon arriving, the crew worked closely with the government and the U.S. embassy to coordinate a safe, contactless transfer of the supplies to Kayangel and to ensure the safety of both the people of Palau and the cutter's crew while conserving the nation's vital medical supplies.[468]

Christmas Drop – December 2020

The 9th Mission Support Command's Task Force Oceania Team Palau helped the U.S. Air Force and the U.S. Embassy at Koror carry out Operation Christmas Drop (OCD) 2020. The success of OCD 20 was the result of months of planning and coordination. Task Force Oceania's Team Palau worked closely with local government officials on Koror, Kayangel, Angaur, Peleliu, Tobi, Sonsorol, and Pulo Anna islands to ensure the local communities would be ready to receive the Christmas bundles of food, tools, clothing, and toys. This training mission is humanitarian in nature and involves low-cost low-altitude air drops from C-130 Hercules aircraft to deliver supplies to more than 20,000 people on islands spread out across 1.8 million square nautical miles. Socially distanced teams wearing recommended protective gear on shift prepared the donations into bundles that were disinfected prior to delivery across the islands, thereby ensuring the safety of everyone who received items from the drops.[469]

Defender Pacific – September 2020

U.S. Army Pacific (USARPAC) deployed soldiers and equipment to Palau on 5 and 7 September 2020. Using both air and sea delivery means in a training exercise, the troops demonstrated defensive capabilities in support of the COFA and commitment to a free and open Indo-Pacific.[470] A U.S. Air Force C-130 Hercules delivered the USARPAC soldiers onto the newly

renovated Angaur Airfield for training exercises in Palau. The successful arrival of the military cargo plane validated the airstrip's use by military and commercial aircraft, a little more than a week after the project's completion. In the weeks prior, a U.S. civil-military engineer joint task force reconstructed and expanded the runway as part of the Angaur Airfield Joint Improvement Project. The U.S. Ambassador to Palau, John Hennessy-Niland, remarked that making the airstrip capable of hosting cargo aircraft was a significant milestone as adding a second airfield allows the U.S., along with other allies and partners in the region, increased opportunity to support the delivery of humanitarian assistance or address other regional security concerns. The USARPAC soldiers were part of Defender Pacific 20, a theater-wide exercise that demonstrates strategic readiness by deploying combat-credible forces in support of the COFA agreement and the U.S. National Defense Strategy.[471] In addition to the component that tested the airfield's capacity, Defender Pacific 20 participants received an Army logistic support vessel carrying a High Mobility Artillery Rocket System, as part of simulated archipelagic defense.[472]

Koa Moana – July-August 2020

The Engineer Platoon of Task Force Koa Moana (TFKM) 20, I Marine Expeditionary Force, integrated with a joint U.S. team for an expansion project at the Angaur Airfield in the state of Angaur, Palau, 19-26 August 2020. The airfield, publicly owned by the state of Angaur, was originally built to support the Battle of Peleliu in 1944. The U.S. Coast Guard continued using the airfield through the '80s. When the Coast Guard station in Angaur stood down, the jungle surrounding the airfield encroached on the space, creating obstacles for military and local commercial flights. In early August of 2020, while TFKM20 was already conducting airfield repairs in the nearby state of Peleliu, Governor Kennosuke Suzuky of Angaur requested assistance in improving the Angaur Airfield. The U.S. Ambassador to Palau, John Hennessey-Niland, approached TFKM20's commander, U.S. Marine Corps Lt. Col. Thomas Stona, and asked if the Marines could assist in the effort. This would require extending their deployment by a week, but according to Stona, the Marines were eager to help in partnership with USARPAC, the U.S. Navy CAT Palau, and the Air Force personnel who assisted in the execution of the project. Stona added that by having a runway that can handle a large aircraft like a C-130, Palau is assured the U.S. will be able to assist in case of a natural disaster or other humanitarian crisis. Marines and Sailors with TFKM20 conducted engagements in Palau during July and August 2020.[473]

Civic Action Team – August 2019-February 2020

Soldiers of Civic Action Team (CAT) Palau 84-06 transferred authority to CAT 36-04, made up of Airmen from the 36th Civil Engineer Squadron. The Soldiers of CAT 84-06 arrived in Palau in August 2019 during the celebration of 50 years of the Civic Action Team. During the six-month stay in Palau, CAT 84-06 completed four major construction projects, primarily focused on improving the playgrounds of Palau's elementary schools. They made significant progress on the renovation of the Assembly of God Church, setting up CAT 36-04 to complete the project during their tenure. They also completed 85 tech assists, helping Palauan citizens with everything from car repairs to minor fixes around their homes. Medical engagement is at the heart of the CAT mission, and the team's three rotational medical professionals provided support to more than 800 patients throughout Palau and brought medical care to many remote locations. CAT 84-06 also provided educational and hands on training to 13 apprentices during their deployment. Civic Action Team Palau provides construction support to the host nation, assists and trains apprentices with general engineering skills, facilitates a medical outreach program, and conducts community service projects.[474]

Pacific Pathways Exercise Palau – April 2019

The Pacific Pathways concept aims at strengthening partner relationships and helps ensure Palau builds sustainable, resilient, and inclusive economic growth. As part of this concept, Exercise Palau 2019 ran 13-19 April and included community and animal health outreach services at several sites including Koror, Peleliu, and Angaur. There were security cooperation operations with the 5th Battalion, 20th Infantry Regiment, 1-2 Stryker Brigade Combat Team, 7th Infantry Division. Additionally, repairs and widening were conducted on a local road, which leads to a training site for the Palauan Security Force's future use.[475] To assist in reaching out to remote locations in Angaur and Peleliu, a U.S. Army medical outreach team educated the populations at their local elementary schools and city centers during Global Health Engagements on 15 and 16 April. The outreach team, consisting of a pediatrician, a dentist, and a nutritionist, provided education tailored to the needs of the Angaur and Peleliu populations. The team's mission required them to coordinate closely with Palau's MHHS and required the participation of MHHS workers during the engagements, which encouraged a sense of partnership in establishing a more robust healthcare infrastructure. Exercise Palau was the first U.S. Army exercise of its kind in decades on the islands, and it was intended to reinforce U.S. commitments to Indo-Pacific allies and other regional partners. Exercise Palau reflects a concentrated focus on the commitments outlined in the COFA.[476] The exercise focused on building readiness, developing partner land force capabilities, and humanitarian assistance.[477]

Civic Action Team – May 2018

The CAT in Palau constructed two water catchment systems that will provide clean and filtered water to the local population. The system collects rainwater that falls on a building's roof and filters it. The filtered rainwater is then used as a source of fresh water. In isolated areas in Palau, this is the only reliable way to get fresh water. Kayangel was the site of a water catchment improvement project that the CAT completed on 4 May 2018. Prior to the CAT's enhancements, the Kayangel Elementary School provided school children and the 70-strong community with unfiltered captured rainwater through three water catchment containers feeding one large system. The roof and tanks were dirty and untreated, which led to health concerns for those drinking the water. One tank did not have a cover and it had become a breeding ground for insects and bacteria. The project's main mission was to repair the system and to construct ways to filter captured rainwater. Civic Action Team 84-05 worked in conjunction with Dr. Dale Jenkins from USAID and Minister Sinton Soalablai from the Palau Ministry of Education to make the necessary fixes, and after planning out the logistics, CAT members and two Palauan plumbing apprentices took a three-hour boat ride from Koror to the remote island to set up their operations at Kayangel Elementary School. The finishing touch of the project was to teach the school administrators how to clean their water by using safe amounts of chlorine.[478]

International/Foreign Relations

Palau's international relations are largely shaped by the Compact of Free Association (COFA) with the U.S., as well as China's regional influence, relations with other Pacific Island areas, and development aid from Japan, Australia, and other states.

Palau is one of three Pacific Island countries, along with the Republic of the Marshall Islands and the Federated States of Micronesia, to have entered into COFAs with the United States as Freely Associated States (FAS). Following the end of World War II, the islands that now comprise the three FAS came under U.S. jurisdiction as UN Trust Territories until the three FAS obtained independence in the 1980s. The Compacts are unique agreements that structure the bilateral relationships between the U.S. and each of the three sovereign FAS. The Compact with Palau provides the U.S. military exclusive access and

provides Palau continued economic assistance from the U.S.[479] Palau citizens are entitled to travel and apply for admission to the U.S. as nonimmigrants without visas, and admitted Palauans are able to reside, work, and study in the U.S.[480] The COFA between Palau and the U.S. entered into force in 1994,[481] the same year that Palau joined the UN.[482] It is set to expire in 2024, whereas agreements with Micronesia and the Marshall Islands would expire in 2023. The U.S. began negotiations with all three FAS in 2019 for amendment and continuation of the COFA.[483] Negotiations are led by Ambassador Joseph Yun, who was appointed by President Biden in March 2022 as U.S. Special Presidential Envoy for Compact Negotiations.[484] As of December 2022 negotiations were ongoing, with a U.S. State Department official saying the U.S. hoped to reach consensus on the top-line assistance by the end of 2022, though the signing of final agreement texts was not expected until 2023 at the earliest.[485] In September 2020, Palau offered to host U.S. bases, inviting the U.S. to build ports, bases, and airfields on Palau's territory.[486] Palau sees an economic stimulus benefit in its offer and argues that building bases would help the U.S. deter China.[487] The Compacts have provided the U.S. a substantive way to deny influence by other actors in the region. Termination or reduction of grant-based economic assistance to the FAS could have a large impact on Chinese influence in Oceania.[488]

Palau is active in several regional organizations, including the Pacific Islands Forum (PIF) and the Pacific Community (SPC). In the PIF, Palau was one of the five member states from the Micronesian sub-region of Oceania, along with Micronesia, Nauru, Kiribati, and Marshall Islands, that threatened to withdraw from the organization in 2021.[489] The Micronesian contingent cited the breach of an unwritten but established gentlemen's agreement on sub-regional rotation of leadership among the Pacific's Micronesian, Melanesian, and Polynesian areas.[490] On 3 February 2021, PIF leaders voted for the Secretary-General position to be filled by Henry Puna, former prime minister of the Cook Islands, from the Melanesian sub-region. However, the Micronesian sub-region had only once held the Secretary-General position since PIF was formed in 1971.[491] In June 2022, Palau participated in the Micronesian Presidents Summit in Suva, Fiji, where an agreement was reached with PIF to formalize the permanent sub-regional rotation of PIF's Secretary-General position and the creation of two deputy secretary-general positions for the other sub-regions;[492] at the same time, they conceded to Puna remaining as the leader and for Micronesia to hold the post from 2024.[493] Palau, Micronesia, Marshall Islands, and Nauru agreed to stay in PIF; however, Kiribati had not participated in the deal and in July 2022 withdrew from PIF in a surprise move.[494] With Kiribati's withdrawal from PIF, the Pacific no longer has a single forum through which all Pacific nations can coordinate on important regional issues. This crack in the edifice of regional unity and a possible shift toward coordinating through smaller organizations put a spotlight on dynamics that small Pacific Island nations face navigating regional geopolitics as China vies for influence with the U.S.[495]

As China's influence grows, several countries, including a few in the Pacific, have switched diplomatic recognition from Taiwan to China in recent years. Palau is one of only 13 countries that maintains diplomatic ties with Taiwan.[496] Most states that recognize Taiwan are small countries; in the Pacific, this includes the Marshall Islands, Nauru, and Tuvalu. The Solomon Islands and Kiribati had recognized Taiwan but in 2019 switched recognition to China.[497] China's growing influence in the Pacific was seen in April 2022 when the Solomon Islands entered a security pact with China.[498] Meanwhile, Taiwan prioritizes maintaining ties with the countries that still recognize it and remains actively engaged with Palau economically and diplomatically. China views the Pacific region as a logical next step for its Belt and Road Initiative,[499] wherein China provides loans to more than 70 economies to develop infrastructure that also benefit Chinese

trade and increase political influence.[500] Even though Palau maintains diplomatic relations with Taiwan, Palau still has important trade relations with China. Palau's top five trade partners in 2017 were Japan, Taiwan, the U.S., China, and South Korea. China was also an important driver of tourism for Palau's economy prior to China's 2015 tourism ban restricting Chinese visitors from Palau.[501]

Palau, along with many other Pacific Island countries and territories, faces a significant transboundary threat in illegal, unreported, and unregulated (IUU) fishing. IUU undermines fisheries, destabilizes marine resources, and threatens livelihoods; however, the resources needed to patrol large expanses of ocean make it challenging for small island states to enforce fishing rules in territorial waters. Australia, the U.S., and Japan have assisted Palau in fighting IUU fishing,[502] with Australia and Japan providing patrol boats,[503] and the U.S. assisting with operating costs and building law enforcement capacity.[504] In 2015, Palau was the first Pacific nation to ratify the Agreement on Port State Measures to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing.[505] In 2019, Palau joined a challenge issued by Marshall Islands for an IUU-free Pacific by 2023. In January 2020, Palau implemented a national marine sanctuary aimed at fighting IUU, prohibit commercial fishing in an area covering 500,000 km^2 (193,051 square miles) of its exclusive economic zone (EEZ).[506] In July 2022, after decades of stagnant U.S. funding, the U.S. pledged to triple aid to the Pacific region to combat IUU, enhance maritime security, and tackle climate change. The U.S. pledge was welcomed by Pacific Island leaders, including Palau. President Surangel Whipps Jr. stated, "It really shows the US are back and want to play an active role." Whipps added, "The sky is the limit with the opportunity with China. That competition creates, sometimes, concerns about security. We lived through World War Two and we don't want to see that again."[507]

Participation in International Organizations

Palau 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), Institute of Catastrophe Risk Management (ICRM), International Atomic Energy Agency (IAEA), International Bank for Reconstruction and Development (IBRD), International Civil Aviation Organization (ICAO), International Development Association, International Federation of Red Cross and Red Crescent Societies (IFRC), International Finance Corporation, International Labour Organization (ILO), International Maritime Organization, International Mobile Satellite Organization, International Monetary Fund (IMF), International Olympic Committee (IOC), Inter-Parliamentary Union (IPU), Multilateral Investment Guarantee Agency (MIGA), Organisation for the Prohibition of Chemical Weapons (OPCW), Organisation of African, Caribbean, and Pacific States (ACP/OACPS), Pacific Community (SPC), 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), United Nations Educational, Scientific, and Cultural Organization (UNESCO), World Health Organization (WHO)

Force Protection/Pre-Deployment Information

The following information is provided for pre-deployment planning and preparations.[508] Visit *https://www.travel.state.gov* prior to deployments for further up-to-date information. DoD personnel must review the Foreign

Clearance Guide (FCG) for travel to Palau (*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 FCG if you have additional questions.

Passport/Visa

U.S. citizens visiting Palau for one year or less do not need a visa. Visitors to Palau must have a passport valid for at least six months at the time of entry. This requirement does not apply to United States military personnel traveling or visiting Palau on official business.

As of 1 January 2018, every visitor arriving in Palau is assessed a US$100 environmental fee. Every international airline is required to include the fee in the price of the ticket into Palau. Diplomats, U.S. government employees, and transit passengers are exempt from the US$100 Palau Paradise Environmental Fee (PPEF) and are eligible for a cash refund upon arrival or departure by presenting a travel itinerary indicating that the fee was paid and a passport.

Proof of cholera and yellow fever immunizations is required for those arriving from affected areas.

U.S. Military Personnel: U.S. military personnel must present official orders or documents certifying their status. U.S. military dependents ten years of age or older must have a U.S. Government-issued photo-identification card showing name, date of birth, and status. Dependents under ten years of age will be granted entry if they are listed in the official orders.

HIV/AIDS Restrictions: Some HIV/AIDS entry restrictions may exist for visitors to and foreign residents of Palau. Travelers should verify these restrictions before travel.

Safety and Security

Crime: Although the crime rate in Palau is relatively low, petty and sometimes violent crime as well as other random acts do target individuals and property. Stay alert for personal safety and protect valuables.

Unexploded ordnance: UXO from World War II remains a problem in Palau. Although the majority of the land-based UXO is found on the island of Peleliu, UXO can be found on almost any island in Palau. Underwater UXO may also present a threat. Tourists are advised to heed all warnings on areas that might be affected. Travelers are advised to use extreme caution when hiking or scuba diving.

Cyclone Season: The official cyclone season is November through April. The Fiji Meteorological Service maintains a Tropical Cyclone Warning Center in Nadi, and it serves the Southwest Pacific Region. General information about natural disaster preparedness is available at the State Department's website, as well as from the U.S. Federal Emergency Management Agency's (FEMA) website. Travelers are advised to use these sites for reference.

Victims of Crime: Report crimes to the local police by dialing 911 and contact the U.S. Embassy at +680-775-6150. Remember that local authorities are responsible for investigating and prosecuting crime. The U.S. 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 our 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 generally regulated, and rules for best practices and safety inspections are regularly enforced. Hazardous areas/activities are identified with appropriate signage, and professional staff is typically on

hand in support of organized activities. In the event of an injury, appropriate medical treatment is widely available throughout the country. Outside of the central tourism areas, it may take more time for first responders and medical professionals to stabilize a patient and provide life-saving assistance. 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 in Koror, Palau
In Airai State, in an area known as Omsangel (no street address)
P.O. Box 6028, Koror, Palau 96940
Tel: +680-587-2920/2990
Emergency after-hours telephone: +680-775-6150
Fax: +680-587-2911
Email: *usembassykoror@palaunet.com*

Currency Information

Palau uses the U.S. Dollar (USD or US$) as its official currency

Travel Health Information

The U.S. Centers for Disease Control and Prevention (CDC) provides guidance that all travelers to Palau should be up to date on routine vaccinations. The following are additional recommendations for travel to Palau. The information in Tables 5 and 6 are taken directly from the CDC website under the Travelers Health Section (*https://wwwnc.cdc.gov/travel/destinations/list/*).[509]

Health Alerts for Palau: At the time of writing this handbook (November 2022), there are no health risk alerts.

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

Eat and Drink Safely

Food and water standards in Palau are similar to those in the United States. Most travelers do not need to take special food or water precautions beyond what they normally do at home. However, travelers visiting rural or remote areas that are served by unregulated water sources such as private wells should take special precautions to ensure the safety of their drinking water.

Prevent Bug Bites

Bugs (like mosquitoes, ticks, and fleas) can spread a number of diseases in Palau. 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 percent 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 any country at any time. To receive updated Travel Advisories and Alerts for the countries you choose, sign up at step.state.gov.

Routine vaccines	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 COVID-19 vaccines.
Hepatitis A	Recommended for unvaccinated travelers one year old or older going to Palau. Infants 6-11 months old should also be vaccinated against Hepatitis A. The dose does not count toward the routine 2-dose series. Travelers allergic to a vaccine component or who are younger than 6 months old 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 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 to Palau.
Measles	Infants 6 to 11 months old traveling internationally should get 1 dose of measles-mumps-rubella (MMR) vaccine before travel. This dose does not count as part of the routine childhood vaccination series.
Typhoid	Recommended for most travelers, especially those staying with friends or relatives or visiting smaller cities or rural areas.

Table 5: CDC Information for Vaccine-Preventable Diseases in Palau

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

Table 6: CDC Information for Non-Vaccine-Preventable Diseases in Palau

Sendai Framework

The Sendai Framework for Disaster Risk Reduction 2015-2030 is the global blueprint and fifteen-year plan to build the world's resilience to natural disasters. The 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 leading up to 2030. 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 9 shows the Sendai Framework.

The information in this section is sourced directly from the Sendai Framework, which 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 global 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; and
- 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.

Palau has engaged in Sendai Framework programs in the following ways:

- Priority 1 - Understanding Disaster Risk: Understanding the impacts of natural hazards and climate change in Palau requires monitoring, data collection, and analysis of risk, all of which can support development of policies and legislation that improve resilience. Palau's government has worked with the private sector and NGOs to collect this data, but there have been few assessments to determine the impacts of different risks. One environmental impact assessment was conducted to determine the feasibility of relocating the existing businesses and operations of Palau Equipment Company Inc. from Malakal to Medalaii Hamlet, Koror State, and the assessment concluded that the proposed project would minimally impact the marine mangrove forest and nearby marine environment area. More such assessments will help increase understanding of potential environmental, social, and health effects of a proposed project. The government's Building Safety and Resilience in the Pacific project, in collaboration with the Pacific Community (SPC), developed a Community-Based Disaster Risk Reduction (CBDRR) Toolkit to provide guidance to

stakeholders who are willing to support local communities in their efforts to minimize the risks of disasters and create an effective disaster response and recovery system. The toolkit assists in identifying the hazards, vulnerabilities, and capacity of an individual community, followed by DRR planning, implementation, and monitoring and evaluation guidance. The hazard assessment looks at identifying and analyzing hazards that may affect a community based on local knowledge and experience and analyzes the impacts of past hazards. The toolkit helps create community disaster risk profiles with hazard maps, timelines of disaster events, and capacity.

- Priority 2 - Strengthening Disaster Risk Governance to Manage Disaster Risk: Palau's 2010 National Disaster Risk Management Framework (NDRMF) (amended in 2016) aims to improve and strengthen disaster risk governance by enabling effective coordination in preparing for, responding to, and recovering from hazards. It also defines the responsibilities and strategies by government and non-government agencies to develop emergency response plans, procedures, and DRR strategies. The NDRMF established the relationships among DEC, NEC, NEMO, CCG, and any ICPs to undertake disaster preparedness (including implementing, monitoring, and evaluating), response, and recovery from national to community levels. Palau's Climate Change Policy was published in 2015 to provide strategic priorities for adapting to impacts of climate change, preparing for and responding to disasters, and reducing GHG emissions. The policy built on past commitments of increasing the contributions to renewable energy by 20% as well as decreasing energy consumption by 30% by 2020. There is an emphasis on strengthening national DRM structures that include mechanisms and budgetary allocation processes.
- Priority 3 - Investing in Disaster Risk Reduction for Resilience: Public and private investment in disaster risk prevention and reduction through structural and non-structural measures is fundamental to enhance resilience of individuals, communities, and the assets of Palau. These measures have been found to be cost-effective at saving lives, preventing and reducing losses, and ensuring effective recovery and rehabilitation. The Government of Palau realizes the importance of investment and has continuously financed the Ministry of Natural Resources, Environment and Tourism (MNRET). In the 2018 Budget, a total of US$1.7 million was allocated to MNRET, with most of the funding allocated to the Bureau of Marine Resources and Bureau of Agriculture. Overall, Palau plans to invest in sanitation, water, and power, and to prioritize maintenance and improve foreign investment and foreign worker policies to gain sustainable benefits. The proposed budget for 2022 was 14% below fiscal 2021's (US$103 million). The budget is sourced from local revenue and external sources such as the Asian Development Bank and Compact Trust Fund. Additional official development assistance (ODA) received by Palau comes from various multilateral institutions and bilateral commitments from Australia, Japan, and New Zealand. For decades, Japan supported Palau with grant aid and technical cooperation in projects such as "Construction of National Landfill" to solve the issue of waste management, "Palau International Coral Reef Research Center Project" to conduct research for the conservation and protection of Palau's marine environment, and "Renovation, Expansion and Operation of Palau International Airport" to accommodate the growing tourism industry. Australia allocated AUS$4 million (US$2.6 million) per year for 2022-2023 in non-ODA funding to assist Palau in enhancing maritime security, oceans, infrastructure, private sector development, women's empowerment, and supporting regional recovery from the health and

economic impacts of COVID-19. New Zealand has also been supporting Palau through the North Pacific Development Fund, and contributions have been made through a bilateral development program, which focuses on renewable energy, climate change, and oceans. Palau and New Zealand are working on installation of solar photovoltaic hybrid systems on Kayangel as well as installation of rooftop systems on Koror. More recently, New Zealand and Palau are supporting fisheries management and governance as well as improving the safety of an eco-tourism site that is impacted by soil erosion. Development organizations such as the ADB have committed to 27 projects and disbursed around US$172.88 million in terms of loans, grants, and technical assistance in Palau. Green Climate Fund (GCF) has financed US$9.5 million for improving the climate information and knowledge services.

- Priority 4 - Enhancing Disaster Preparedness for Effective Response to "Build Back Better" in Recovery, Rehabilitation, and Reconstruction: While Palau does not have many initiatives on enhancing disaster preparedness for effective response to "Build Back Better," it has worked with some international organizations to try to meet this priority. UNDP in partnership with Japan funded the "Enhancing Disaster and Climate Resilience in Palau through Improved Disaster Preparedness and Infrastructure" project (US$7.5 million) to improve preparedness and mitigation capacity to tackle the impacts of natural hazards and climate change events. As a result, various communications systems – i.e., AM broadcasting, High Frequency radios, tsunami and multi-hazard early warning sirens, and Automatic Weather Stations – were deployed and installed in Palau. NEMO, the Bureau of Aging, Disability, and Gender, and UNDP in partnership with SPC, IFRC, PRCS, and OMEKESANG Association of Palau conducted a two-day workshop for forty-two staff from public sector and civil society organization who are working and engaged in community disaster risk management on integrating the gender, age, disability, and cultural perspective in policies and practices of disaster risk management.

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 during 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 during 2020-2030 compared to 2005-2015	Reduce direct disaster economic loss in relation to global 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

Priorities for Action

There is a need for focused action within and across sectors by States at local, national, regional, and global levels in the following four priority areas.

Priority 1	Priority 2	Priority 3	Priority 4
Understanding disaster risk	Strengthening disaster risk governance to manage disaster risk	Investing in disaster risk reduction for resilience	Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation, and reconstruction
Disaster risk management needs to be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics, and the environment	Disaster risk governance at the national, regional, and global levels is vital to the management of disaster risk reduction in all sectors and ensuring the coherence of national and local frameworks of laws, regulations, and public policies that, by defining roles and responsibilities, guide, encourage, and incentivize the public and private sectors to take action and address disaster risk	Public and private investment in disaster risk prevention and reduction through structural and non-structural measures is essential to enhance the economic, social, health, and cultural resilience of persons, communities, countries, and their assets, as well as the environment. These can be drivers of innovation, growth, and job creation. Such measures are cost-effective and instrumental to save lives, prevent and reduce losses, and ensure effective recovery and rehabilitation	Experience indicates that disaster preparedness needs to be strengthened for more effective response and to ensure capacities are in place for effective recovery. Disasters have also demonstrated that the recovery, rehabilitation, and reconstruction phase, which needs to be prepared ahead of the disaster, is an opportunity to "Build Back Better" through integrating disaster risk reduction measures. Women and persons with disabilities should publicly lead and promote gender-equitable and universally accessible approaches during the response and reconstruction phases

Figure 9: UN Sendai Framework for Disaster Risk Reduction 2015-2030

Country Profile

The information in the Country Profile section is sourced directly from the CIA World Fact book for Palau. Additional numbers on country comparison to the world can be found by going directly to the CIA website (*https:/www.cia.gov*). This profile discusses topics including geography, people and society, government, economy, energy, communications, military and security, transportation, terrorism, and transnational issues.[510]

Background

Humans arrived in the Palauan archipelago around 1000 BCE from Southeast Asia and developed a complex, highly organized matrilineal society where high-ranking women picked the chiefs. The islands were the westernmost part of the widely scattered Pacific islands north of New Guinea that Spanish explorers named the Caroline Islands in the 17th century. There were several failed attempts by Spanish Jesuit missionaries to visit the islands in the early 1700s. Spain gained some influence in the islands and administered it from the Philippines but sold Palau to Germany in 1899 after it lost the Philippines in the Spanish-American War.

Japan seized Palau in 1914, was granted a League of Nations mandate to administer the islands in 1920, and made Koror the capital of its South Seas Mandate in 1922. By the outbreak of World War II, there were four times as many Japanese living in Koror as Palauans. In 1944, the Battle of Peleliu between US and Japanese forces resulted in more than 15,000 deaths. Following the war, Palau became part of the US-administered Trust Territory of the Pacific Islands.

Palau voted against joining the Federated States of Micronesia in 1978 and adopted its own constitution in 1981, which stated that Palau was a nuclear-free country. In 1982, Palau signed a Compact of Free Association (COFA) with the US, which granted Palau financial assistance and access to many US domestic programs in exchange for exclusive US military access and defense responsibilities. However, many Palauans saw the COFA as incompatible with the Palauan Constitution because of the US military's nuclear arsenal, and seven referenda failed to achieve ratification. Following a constitutional amendment and eighth referendum in 1993, the COFA was ratified and entered into force in 1994 when the islands gained their independence. Its funding was renewed in 2010.

Palau has been on the frontlines of combatting climate change and protecting marine resources. In 2011, Palau banned commercial shark fishing and created the world's first shark sanctuary. In 2017, Palau began stamping the Palau Pledge into passports, reminding visitors to act in ecologically and culturally responsible ways. In 2020, Palau banned coral reef-toxic sunscreens and expanded its fishing prohibition to include 80% of its exclusive economic zone.

Geography

Location
Oceania, group of islands in the North Pacific Ocean, southeast of the Philippines

Geographic coordinates
7 30 N, 134 30 E

Area
total: 459 sq km
land: 459 sq km
water: 0 sq km
country comparison to the world: 197

Area - comparative
slightly more than 2.5 times the size of Washington, DC

Land boundaries
total: 0 km

Coastline
1,519 km

Maritime claims
territorial sea: 12 nm
contiguous zone: 24 nm
exclusive economic zone: 200 nm
continental shelf: 200 nm

Climate
tropical; hot and humid; wet season May to November

Terrain
varying topography from the high, mountainous main island of Babelthuap to low, coral islands usually fringed by large barrier reefs

Elevation
highest point: Mount Ngerchelchuus 242 m
lowest point: Pacific Ocean 0 m

Natural resources
forests, minerals (especially gold), marine products, deep-seabed minerals

Land use
agricultural land: 10.8% (2018 est.)
arable land: 2.2% (2018 est.)
permanent crops: 4.3% (2018 est.)
permanent pasture: 4.3% (2018 est.)
forest: 87.6% (2018 est.)
other: 1.6% (2018 est.)

Irrigated land
0 sq km (2012)

Population distribution
most of the population is located on the southern end of the main island of Babelthuap

Natural hazards
typhoons (June to December)

Geography - note
westernmost archipelago in the Caroline chain, consists of six island groups totaling more than 300 islands; includes World War II battleground of Beliliou (Peleliu) and world-famous Rock Islands

People and Society

Population
21,695 (2022 est.)
country comparison to the world: 218

Nationality
noun: Palauan(s)
adjective: Palauan

Ethnic groups
Palauan (Micronesian with Malayan and Melanesian admixtures) 73%, Carolinian 2%, Asian 21.7%, Caucasian 1.2%, other 2.1% (2015 est.)

Languages
Palauan (official on most islands) 65.2%, other Micronesian 1.9%, English (official) 19.1%, Filipino 9.9%, Chinese 1.2%, other 2.8% (2015 est.)
note: Sonsoralese is official in Sonsoral; Tobian is official in Tobi; Angaur and Japanese are official in Angaur

Religions
Roman Catholic 45.3%, Protestant 34.9% (includes Evangelical 26.4%, Seventh Day Adventist 6.9%, Assembly of God .9%, Baptist .7%), Modekngei 5.7% (indigenous to Palau), Muslim 3%, Church of Jesus Christ 1.5%, other 9.7% (2015 est.)

Age structure
0-14 years: 18.68% (male 2,090/female 1,961)
15-24 years: 15.86% (male 1,723/female 1,716)
25-54 years: 45.33% (male 6,026/female 3,804)
55-64 years: 10.68% (male 853/female 1,463)
65 years and over: 9.45% (2020 est.) (male 501/female 1,548)

Figure 10 shows the population pyramid for Palau.[511]

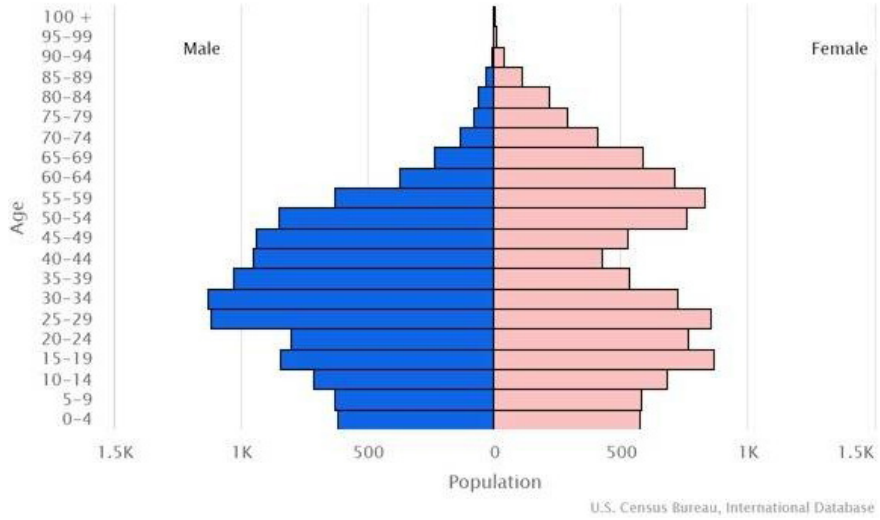


Figure 10: Palau Population Pyramid (2022)

Dependency ratios
total dependency ratio: NA
youth dependency ratio: NA
elderly dependency ratio: NA
potential support ratio: NA
Median age
total: 33.9 years
male: 32.9 years
female: 35.9 years (2020 est.)
country comparison to the world: 94

Population growth rate
0.39% (2022 est.)
country comparison to the world: 161

Birth rate
11.52 births/1,000 population (2022 est.)
country comparison to the world: 163

Death rate
8.25 deaths/1,000 population (2022 est.)
country comparison to the world: 80

Net migration rate
0.6 migrant(s)/1,000 population (2022 est.)
country comparison to the world: 72

Population distribution
most of the population is located on the southern end of the main island of Babelthuap

Urbanization
urban population: 82% of total population (2022)
rate of urbanization: 1.59% annual rate of change (2020-25 est.)
total population growth rate v. urban population growth rate, 2000-2030

Major urban areas - population
277 NGERULMUD (capital) (2018)

Sex ratio
at birth: 1.07 male(s)/female
0-14 years: 1.07 male(s)/female
15-24 years: 1.01 male(s)/female
25-54 years: 1.66 male(s)/female
55-64 years: 0.64 male(s)/female
65 years and over: 0.27 male(s)/female
total population: 1.07 male(s)/female (2022 est.)

Infant mortality rate
total: 11.28 deaths/1,000 live births
male: 13.26 deaths/1,000 live births
female: 9.18 deaths/1,000 live births (2022 est.)
country comparison to the world: 126

Life expectancy at birth
total population: 74.64 years
male: 71.48 years
female: 78 years (2022 est.)
country comparison to the world: 135

Total fertility rate
1.7 children born/woman (2022 est.)
country comparison to the world: 168

Contraceptive prevalence rate
NA

Drinking water source
improved: urban: 99.6% of population
rural: 99.8% of population
total: 99.7% of population
unimproved: urban: 0.4% of population
rural: 0.2% of population
total: 0.3% of population (2020 est.)

Current health expenditure
15.2% of GDP (2019)

Physicians density
1.77 physicians/1,000 population (2020)

Sanitation facility access
improved: urban: 99.8% of population
rural: 99% of population
total: 99.6% of population
unimproved: urban: 0.2% of population
rural: 1% of population
total: 0.4% of population (2020 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

Obesity - adult prevalence rate
55.3% (2016)
country comparison to the world: 3

Tobacco use
total: 17.6% (2020 est.)
male: 27.3% (2020 est.)
female: 7.9% (2020 est.)
country comparison to the world: 95

Children under the age of 5 years underweight
NA

Education expenditures
NA

Literacy
definition: age 15 and over can read and write
total population: 96.6%
male: 96.8%
female: 96.3% (2015)

School life expectancy (primary to tertiary education)
total: 17 years
male: 16 years
female: 17 years (2013)

Unemployment, youth ages 15-24
total: 5.6%
male: NA
female: (2014) NA

Environment

Environment - current issues
inadequate facilities for disposal of solid waste; threats to the marine ecosystem from sand and coral dredging, illegal and destructive fishing practices, and overfishing; climate change contributes to rising sea level and coral bleaching; drought

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

Air pollutants
particulate matter emissions: 12.18 micrograms per cubic meter (2016 est.)
carbon dioxide emissions: 0.22 megatons (2016 est.)
methane emissions: 0.06 megatons (2020 est.)

Climate
tropical; hot and humid; wet season May to November

Land use
agricultural land: 10.8% (2018 est.)
arable land: 2.2% (2018 est.)
permanent crops: 4.3% (2018 est.)
permanent pasture: 4.3% (2018 est.)
forest: 87.6% (2018 est.)
other: 1.6% (2018 est.)

Urbanization
urban population: 82% of total population (2022)
rate of urbanization: 1.59% 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% of GDP (2018 est.)
country comparison to the world: 191

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

Waste and recycling
municipal solid waste generated annually: 9,427 tons (2016 est.)

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

Government

Country name
conventional long form: Republic of Palau
conventional short form: Palau
local long form: Beluu er a Belau
local short form: Belau
former: Trust Territory of the Pacific Islands, Palau District
etymology: from the Palauan name for the islands, Belau, which likely derives from the Palauan word "beluu" meaning "village"

Government type
presidential republic in free association with the US

Capital
name: Ngerulmud
geographic coordinates: 7 30 N, 134 37 E
time difference: UTC+9 (14 hours ahead of Washington, DC, during Standard Time)
etymology: the Palauan meaning is "place of fermented 'mud'" ('mud' being the native name for the keyhole angelfish); the site of the new capitol (established in 2006) had been a large hill overlooking the ocean, Ngerulmud, on which women would communally gather to offer fermented angelfish to the gods
note: Ngerulmud, on Babeldaob Island, is the smallest national capital on earth by population, with only a few hundred people; the name is pronounced en-jer-al-mud; Koror, on Koror Island, with over 11,000 residents is by far the largest settlement in Palau; it served as the country's capital from independence in 1994 to 2006

Administrative divisions
16 states; Aimeliik, Airai, Angaur, Hatohobei, Kayangel, Koror, Melekeok, Ngaraard, Ngarchelong, Ngardmau, Ngatpang, Ngchesar, Ngeremlengui, Ngiwal, Peleliu, Sonsorol

Independence
1 October 1994 (from the US-administered UN trusteeship)

National holiday
Constitution Day, 9 July (1981), day of a national referendum to pass the new constitution; Independence Day, 1 October (1994)

Constitution
history: ratified 9 July 1980, effective 1 January 1981
amendments: proposed by a constitutional convention (held at least once every 15 years with voter approval), by public petition of at least 25% of eligible voters, or by a resolution adopted by at least three fourths of National Congress members; passage requires approval by a majority of votes in at least three fourths of the states in the next regular general election; amended several times, last in 2020

Legal system
mixed legal system of civil, 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 Palau
dual citizenship recognized: no
residency requirement for naturalization: note - no procedure for naturalization
Suffrage
18 years of age; universal

Executive branch
chief of state: President Surangel WHIPPS Jr. (since 21 January 2021); Vice President Jerrlyn Uduch Sengebau SENIOR (since 21 January 2021); note - the president is both chief of state and head of government
head of government: President Surangel WHIPPS Jr. (since 21 January 2021); Vice President Jerrlyn Uduch Sengebau SENIOR (since 21 January 2021)
cabinet: Cabinet appointed by the president with the advice and consent of the Senate; also includes the vice president; the Council of Chiefs consists of chiefs from each of the states who advise the president on issues concerning traditional laws, customs, and their relationship to the constitution and laws of Palau
elections/appointments: president and vice president directly elected on separate ballots by absolute majority popular vote in 2 rounds if needed for a 4-year term (eligible for a second term); election last held on 3 November 2020 (next to be held in November 2024)
election results: Surangel WHIPPS, Jr. elected president (in second round); percent of vote - Surangel WHIPPS, Jr. (independent) 56.7%, Raynold OILUCH (independent) 43.3%

Legislative branch
description: bicameral National Congress or Olbiil Era Kelulau consists of:
Senate (13 seats; members directly elected in single-seat constituencies by majority vote to serve 4-year terms)
House of Delegates (16 seats; members directly elected in single-seat constituencies by simple majority vote to serve 4-year terms)
elections:
Senate - last held on 3 November 2020 (next to be held in November 2024)
House of Delegates - last held on 3 November 2020 (next to be held in November 2024)
election results:
Senate - percent of vote - NA; seats - independent 13; composition - men 12, women 1; percent of women 7.7%
House of Delegates - percent of vote - NA; seats - independent 16; composition - men 15, women 1; percent of women 6.3%; note - overall percent of women in National Congress 6.9%

Judicial branch
highest courts: Supreme Court (consists of the chief justice and 3 associate justices organized into appellate trial divisions; the Supreme Court organization also includes the Common Pleas and Land Courts)
judge selection and term of office: justices nominated by a 7-member independent body consisting of judges, presidential appointees, and lawyers and appointed by the president; judges can serve until mandatory retirement at age 65
subordinate courts: National Court and other 'inferior' courts

Political parties and leaders
none

International organization participation
ACP, ADB, AOSIS, FAO, IAEA, IBRD, ICAO, ICRM, IDA, IFC, IFRCS, ILO, IMF, IMO, IMSO, IOC, IPU, MIGA, OPCW, PIF, Sparteca, SPC, UN, UNAMID, UNCTAD, UNESCO, WHO

Diplomatic representation in the US
chief of mission: Ambassador Hersey KYOTA (since 12 November 1997)
chancery: 1701 Pennsylvania Avenue NW, Suite 200, Washington, DC 20006
telephone: [1] (202) 349-8598
FAX: [1] (202) 452-6281
email address: *info@palauembassy.org*
website: *https://www.palauembassy.org/*
consulate(s): Tamuning (Guam)

Diplomatic representation from the US
chief of mission: Ambassador John HENNESSEY-NILAND (since 6 March 2020)
embassy: Omsangel/Beklelachieb, Airai 96940
mailing address: 4260 Koror Place, Washington, DC 20521-4260
telephone: [680] 587-2920
FAX: [680] 587-2911
email address: *ConsularKoror@state.gov*
website: *https://pw.usembassy.gov/*

Flag description
light blue with a large yellow disk shifted slightly to the hoist side; the blue color represents the ocean, the disk represents the moon; Palauans consider the full moon to be the optimum time for human activity; it is also considered a symbol of peace, love, and tranquility

National symbol(s)
bai (native meeting house); national colors: blue, yellow

National anthem
name: "Belau rekid" (Our Palau)
lyrics/music: multiple/Ymesei O. EZEKIEL
note: adopted 1980

National heritage
total World Heritage Sites: 1 (mixed)
selected World Heritage Site locales: Rock Islands Southern Lagoon

Economy
The economy is dominated by tourism, fishing, and subsistence agriculture. Government is a major employer of the work force relying on financial assistance from the US under the Compact of Free Association (Compact) with the US that took effect after the end of the UN trusteeship on 1 October 1994. The US provided Palau with roughly $700 million in aid for the first 15 years following commencement of the Compact in 1994 in return for unrestricted access to its land and waterways for strategic purposes. The population enjoys a per capita income roughly double that of the Philippines and much of Micronesia.
Business and leisure tourist arrivals reached a record 167,966 in 2015, a 14.4% increase over the previous year, but fell to 138,408 in 2016. Long-run prospects for tourism have been bolstered by the expansion of air travel in the Pacific, the rising prosperity of industrial East Asia, and the willingness of foreigners to finance infrastructure development. Proximity to Guam, the region's major destination for tourists from East Asia, and a regionally competitive tourist infrastructure enhance Palau's advantage as a destination.

Real GDP (purchasing power parity)
$320 million (2019 est.)
$330 million (2018 est.)
$317 million (2017 est.)
note: data are in 2017 dollars
country comparison to the world: 215

Real GDP growth rate
-3.7% (2017 est.)
0% (2016 est.)
10.1% (2015 est.)
country comparison to the world: 215

Real GDP per capita
$17,600 (2019 est.) note: data are in 2017 dollars
$18,400 (2018 est.) note: data are in 2017 dollars
$17,841 (2017 est.)
country comparison to the world: 96

GDP (official exchange rate)
$292 million (2017 est.)

Inflation rate (consumer prices)
0.9% (2017 est.)
-1% (2016 est.)
country comparison to the world: 60

GDP - composition, by sector of origin
agriculture: 3% (2016 est.)
industry: 19% (2016 est.)
services: 78% (2016 est.)

GDP - composition, by end use
household consumption: 60.5% (2016 est.)
government consumption: 27.2% (2016 est.)
investment in fixed capital: 22.7% (2016 est.)
investment in inventories: 1.9% (2016 est.)
exports of goods and services: 55.2% (2016 est.)
imports of goods and services: -67.6% (2016 est.)

Agricultural products
coconuts, cassava (manioc, tapioca), sweet potatoes; fish, pigs, chickens, eggs, bananas, papaya, breadfruit, calamansi, soursop, Polynesian chestnuts, Polynesian almonds, mangoes, taro, guava, beans, cucumbers, squash/pumpkins (various), eggplant, green onions, kangkong (watercress), cabbages (various), radishes, betel nuts, melons, peppers, noni, okra

Industries
tourism, fishing, subsistence agriculture

Industrial production growth rate
NA

Labor force
11,610 (2016)
country comparison to the world: 215

Labor force - by occupation
agriculture: 1.2%
industry: 12.4%
services: 86.4% (2016)

Unemployment rate
1.7% (2015 est.)
4.1% (2012)
country comparison to the world: 16

Unemployment, youth ages 15-24
total: 5.6%
male: NA
female: (2014) NA
country comparison to the world: 165

Population below poverty line
24.9% (2006) NA

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

Budget
revenues: 193 million (2012 est.)
expenditures: 167.3 million (2012 est.)
Budget surplus (+) or deficit (-)
8.8% (of GDP) (2016 est.)
country comparison to the world: 3

Public debt
24.1% of GDP (2016 est.)
21.6% of GDP (2015)
country comparison to the world: 179

Taxes and other revenues
66.1% (of GDP) (2016 est.)
country comparison to the world: 6

Fiscal year
1 October - 30 September

Current account balance
-$53 million (2017 est.)
-$36 million (2016 est.)
country comparison to the world: 80

Exports
$23.17 billion (2017 est.)
$14.8 million (2015 est.)
country comparison to the world: 76

Exports - partners
Japan 70%, South Korea 15%, United States 7% (2019)

Exports - commodities
fish, computers, broadcasting equipment, office machinery/parts, scrap vessels (2019)

Imports
$4.715 billion (2018 est.)
$4.079 billion (2017 est.)
country comparison to the world: 141

Imports - partners
South Korea 19%, China 18%, Taiwan 17%, United States 17%, Japan 16% (2019)

Imports - commodities
refined petroleum, fish, cars, broadcasting equipment, modeling instruments (2019)
Reserves of foreign exchange and gold
$0 (31 December 2017 est.)
$580.9 million (31 December 2015 est.)
country comparison to the world: 193

Debt - external
$18.38 billion (31 December 2014 est.)
$16.47 billion (31 December 2013 est.)
country comparison to the world: 95

Exchange rates
the US dollar is used

Energy

Electricity access
electrification - total population: 100% (2018)

Communications

Telephones - fixed lines
total subscriptions: 8,000 (2020 est.)
subscriptions per 100 inhabitants: 44 (2020 est.)
country comparison to the world: 192

Telephones - mobile cellular
total subscriptions: 24,000 (2020 est.)
subscriptions per 100 inhabitants: 133 (2020 est.)
country comparison to the world: 213

Telecommunication systems
general assessment: well-developed mobile sector, recently boosted by satellite network capacity upgrades; 3G services available with satellite; lack of telecom regulations; newest and most powerful commercial satellite, Kacific-1 satellite, launched in 2019 to improve telecommunications in the Asia Pacific region (2020)
domestic: fixed-line nearly 41 per 100 and mobile-cellular services roughly 134 per 100 persons (2019)
international: country code - 680; landing point for the SEA-US submarine cable linking Palau, Philippines, Micronesia, Indonesia, Hawaii (US), Guam (US) and California (US); satellite earth station - 1 Intelsat (Pacific Ocean) (2019)

Broadcast media
no broadcast TV stations; a cable TV network covers the major islands and provides access to 4 local cable stations, rebroadcasts (on a delayed basis) of a number of US stations, as well as access to a number of real-time satellite TV channels; about a half dozen radio stations (1 government-owned) (2019)

Internet country code
.pw

Internet users
total: 7,650 (2016 est.)
percent of population: 36% (2016 est.)
country comparison to the world: 217

Broadband - fixed subscriptions
total: 1,224 (2015 est.)
subscriptions per 100 inhabitants: 7 (2015 est.)
country comparison to the world: 200

Transportation

National air transport system
number of registered air carriers: 1 (2020)
inventory of registered aircraft operated by air carriers: 1

Civil aircraft registration country code prefix
T8

Airports
total: 3 (2021)
country comparison to the world: 195

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

Airports - with unpaved runways
total: 2
1,524 to 2,437 m: 2 (2021)

Roadways
total: 125 km (2018)
paved: 89 km (2018)
unpaved: 36 km (2018)
country comparison to the world: 211

Merchant marine
total: 264
by type: bulk carrier 16, container ship 7, general cargo 107, oil tanker 40, other 94 (2021)
country comparison to the world: 59

Ports and terminals
major seaport(s): Koror

Military and Security

Military and security forces
no regular military forces; the Ministry of Justice includes divisions/bureaus for public security, police functions, and maritime law enforcement

Military equipment inventories and acquisitions
since 2018, Australia and Japan have provided patrol boats to Palau's Division of Marine Law Enforcement (2021)

Military - note
under the Compact of Free Association (COFA) between Palau and the US, the US is responsible for the defense of Palau and the US military is granted access to the islands, but it has not stationed any military forces there; the COFA also allows citizens of Palau to serve in the US armed forces (2022)

Transnational Issues

Disputes - international
Palau-Indonesia: maritime delineation negotiations continue with Philippines, Indonesia
Palau-Philippines: maritime delineation negotiations continue with Philippines, Indonesia

Acronyms and Abbreviations

°	degrees of temperature (Celsius (C) or Fahrenheit (F)); or of latitude/longitude (N/S/E/W – North/South/East/West)
$	Dollar (U.S.)
ACP (now OACPS)	Organisation of African, Caribbean, and Pacific States
ADB	Asian Development Bank
AED	Automated External Defibrillators
AHEC	Area Health Education Center
AIDS	Acquired immunodeficiency syndrome
AM	Amplitude Modulation
APAN	All Partners Access Network
AOSIS	Alliance of Small Island States
BADG	Bureau of Aging, Disability, and Gender
BANGO	Belau Association of Non-Governmental Organization
BCE	Before Common Era (previously B.C.)
BHA	Bureau for Humanitarian Assistance (of USAID)
BSCC	Belau Submarine Cable Corporation
BTTC	Belau Transfer and Terminal Company
CADRE	Climate Adaptation and Disaster Risk Education
CAT	Civic Action Team
CBDRR	Community Based Disaster Risk Reduction
CCA	climate change adaptation
CCG	Central Control Group
CDC	Centers for Disease Control and Prevention (of the U.S.)
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
CFE-DM	Center for Excellence in Disaster Management & Humanitarian Assistance
cm	centimeter(s)
COFA	Compact of Free Association
COM	Chief of Mission (U.S. State Department)
COVID-19	Coronavirus Disease 2019
CPD	continuing professional development
CRA	Compact Review Agreement
CREWS	Climate Risk and Early Warning Systems
DEC	Disaster Executive Council
DKI-APCSS	Daniel K. Inouye Asia-Pacific Center for Security Studies
DM	Disaster Management
DMHA	Disaster Management and Humanitarian Assistance
DoD	Department of Defense (of the U.S.)
DRM	disaster risk management

DRR	disaster risk reduction
DSL	digital subscriber line
EDCR	Enhancing Disaster and Climate Resilience in the Republic of Palau through the improved Disaster Preparedness and Infrastructure
EEZ	Exclusive Economic Zone
EMT	Emergency Medical Team
EOC	Emergency Operations Centre
EOD	Explosive Ordnance Disposal
EQPB	Environmental Quality Protection Board
FAA	Federal Aviation Administration (of the U.S.)
FAO	Food and Agriculture Organization of the United Nations
FAS	Freely Associated States
FEMA	Federal Emergency Management Agency
FRDP	Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management
FSM	Federated States of Micronesia
GCF	Green Climate Fund
GDP	Gross Domestic Product
GDRP	Global Defense Reform Program
GHG	greenhouse gas
GNI	Gross National Income
HADR	humanitarian assistance and disaster relief
HCF	Healthcare Fund
HDX	Humanitarian Data Exchange
HF	high frequency (radio)
HFA	Hyogo Framework for Action
HIV	Human immunodeficiency virus
ICAO	International Civil Aviation Organization
ICP	Incident Command Post
ICRC	International Committee of the Red Cross
IEP	Individualized education plans
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
INFORM	Index for Risk Management
IOM	International Organization for Migration
IT&E	Isla Petroleum and Energy
IUU	illegal, unreported, and unregulated (fishing)
JICA	Japan International Cooperation Agency
JMA	Japan Meteorological Agency

km/km^2	kilometer(s)/ square kilometer(s)
kV	kilovolt(s)
kW / kWh	kilowatt(s) / kilowatt-hour(s)
m/m^2/m^3	meter(s) / square meter(s) / cubic meter(s)
Mbps	Megabit(s) per second
MCO	Multi-Country Office (of the UN)
MHHS	Ministry of Health and Human Services
mm	millimeter(s)
MNRET	Ministry of Natural Resources, Environment and Tourism
MOE	Ministry of Education
MW	megawatt
NCD	non-communicable disease(s)
NDC	National Determined Contributions
NDMC	National Drought Mitigation Center
NDRMF	National Disaster Risk Management Framework
NEC	National Emergency Committee
NEMO	National Emergency Management Office
NEOC	National Emergency Operations Center
NGO	non-government organization
NHI	National Health Insurance
NPA	Norwegian People's Aid
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
OACPS	Organisation of African, Caribbean, and Pacific States
OCD	Operation Christmas Drop
OCHA	Office for the Coordination of Humanitarian Affairs (of the UN)
ODA	Official Development Assistance
OFDA	Office of U.S. Foreign Disaster Assistance (now BHA, of USAID)
PCC	Palau Community College
PEA	Palau Energy Administration
PEPER	Palau Emergency Preparedness and Enhanced Resilience
PHAS	Pacific Humanitarian Air Service
PHT	Pacific Humanitarian Team
PICT	Pacific Island Countries and Territories
PIF	Pacific Islands Forum
PIHOA	Pacific Island Health Officers' Association
PNCC	Palau National Communications Corporation
POLHN	Pacific Open Learning Health Network
PPE	Palau Parents Empowered
PPEF	Palau Paradise Environmental Fee

PPUC	Palau Public Utilities Corporation
PRCS	Palau Red Cross Society
PTWC	Pacific Tsunami Warnings Center
PV	photo-voltaic (solar power)
RCP	Representative Concentration Pathways
RDAT	Red Cross Disaster Action Teams
RMI	Republic of the Marshall Islands
RORO	roll-on/roll-off
SDG	Sustainable Development Goal(s)
SDRMP	State Disaster Risk Management Plan
SFA	subregional focus areas
SMS	short message service (text)
SPC	Pacific Community
SRO	Standardized Relief Items
STEM	science, technology, engineering, and maths
TB	Tuberculosis
TEU	Twenty-foot Equivalent Unit
TFKM	Task Force Koa Moana
TTPI	Trust Territory of the Pacific Islands
U.S.	United States
UN	United Nations
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction
UNFCCC	United Nations Framework Convention on Climate Change
UNHRD	United Nations Humanitarian Response Depot
UNICEF	United Nation Children's Fund
UNSCR	United Nations Security Council Resolution
USAID	United States Agency for International Development
USARPAC	U.S. Army Pacific
UXO	unexploded ordnance
VHF	very high frequency (radio)
WASH	water, sanitation, and hygiene
WFP	World Food Programme
WHO	World Health Organization
WMO	World Meteorological Organization
WPS	Women, Peace, and Security

Endnotes

1 IOM. IOM and Partners Kick Off Program to Strengthen Disaster Preparedness and Response in the Republic of Palau. 6 October 2022. https://reliefweb.int/report/palau/iom-and-partners-kick-program-strengthen-disaster-preparedness-and-response-republic-palau

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Center for Excellence in Disaster Management & Humanitarian Assistance
456 Hornet Avenue, Building 76, Joint Base Pearl Harbor - Hickam, Hawaii 96860-3503
Telephone: 808.472.0518 | DSN: 315.472.0518
https://www.cfe-dmha.org
@cfedmha