PACIFIC RISK PROFILE
PACIFIC REGION[1]

Basic Regional Statistics

Total Population
(2020 Estimate)
11,453,672
persons

Total Population excluding PNG
(2020 Estimate)
2,519,198
persons

SPC Statistics (Population) at https://sdd.spc.int/topic/population

Total Male & Female Population
(2020 Estimate)

Male
5,879,070
persons or 51%

Female
5,574,602
persons or 49%

SPC Statistics (Population) at https://sdd.spc.int/topic/population

Gross Domestic Product (GDP)
US$35.46
Billion
(2019)

Gross Domestic Product (GDP) excluding PNG
US$10.635
Billion
(2019)

World Bank Open Data at https://data.worldbank.org/

Average Social Protection Expenditure in the Pacific
6%
(2015) of GDP

ADB (2019) The Social Protection Indicator for the Pacific at https://www.adb.org/sites/default/files/publication/513481/spi-pacific-2019.pdf

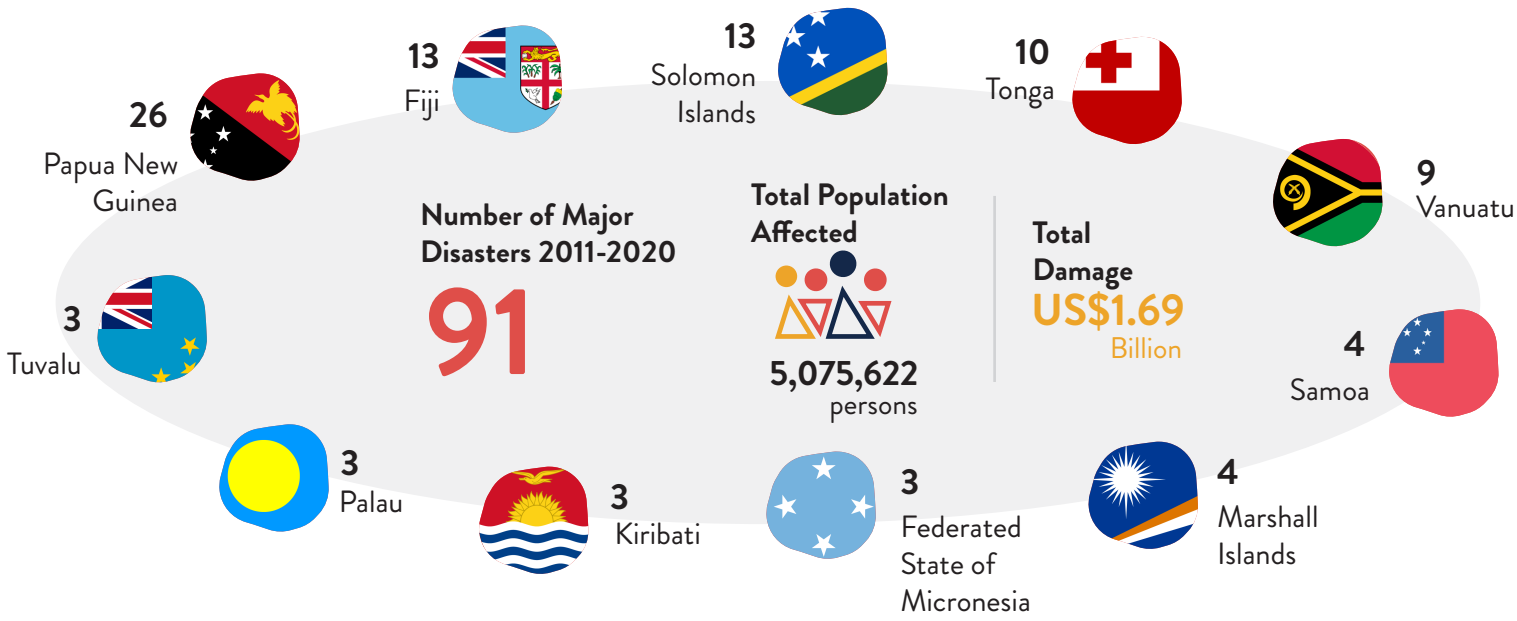
Pacific Risk Profile is a snapshot of climate and disaster risk information that is collected from credible open data sources. It is intended to provide DFAT program managers and implementing partners with easy access to essential risk information. When employing risk information in specific program contexts, however, it is strongly encouraged to study the original risk information sources or even undertake proper risk assessments.

For more information or other technical support, you may contact the Australia Pacific Climate Partnership Support Unit at **helpdesk@apclimatepartnership.com.au.**

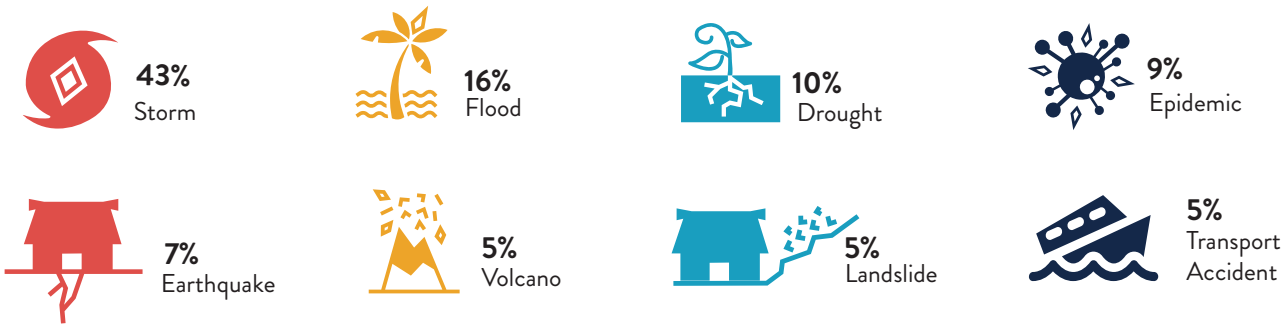
Published in July 2021

[1]Fiji, Federated State of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

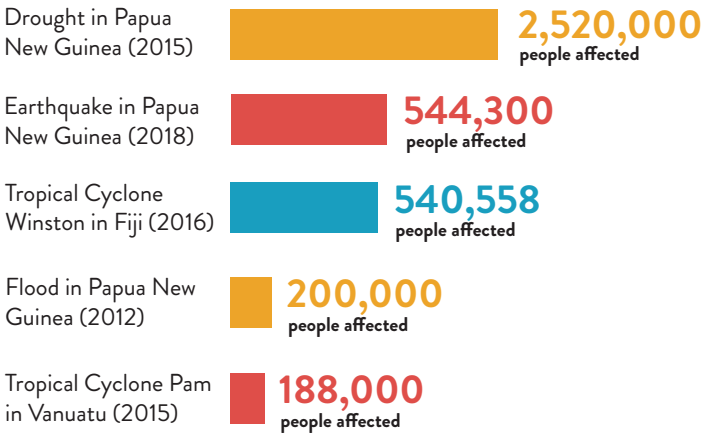
Major Disasters 2011-2020



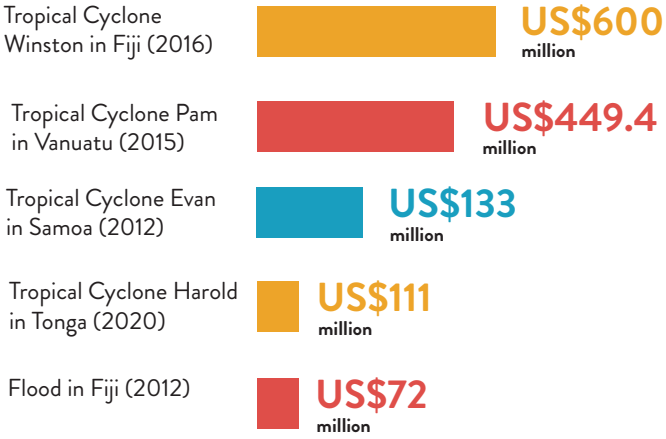
Percentage of Major Disasters by Disaster Type



Top 5 Disasters by Total Population Affected



Top 5 Disasters by Total Damage Value



Economic Loss Due to Disasters

Total Average Annual Losses (AAL)

US$1.07 billion

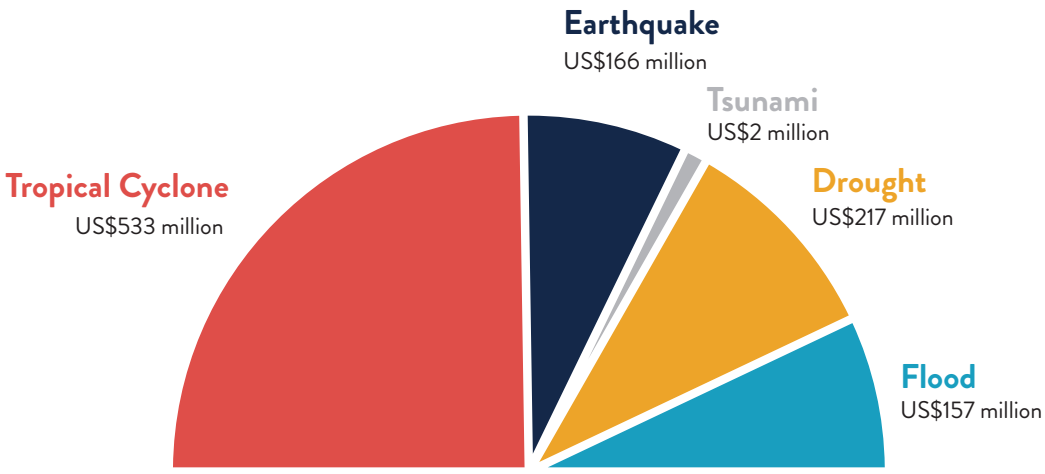
UNESCAP (2020) The Disaster Riskscape across the Pacific Small Island Developing States at https://www.unescap.org/sites/default/d8files/IDD-APDR-Subreport-Pacific-SIDS.pdf

AAL as a Percentage of GDP

4.11%

Vanuatu, Tonga and Palau are at risk of losing more than 10% of their GDP, annually, due to disasters.

Composition of Total Average Annual Losses (AAL) by Hazard Type



UNESCAP (2020) The Disaster Riskscape across the Pacific Small Island Developing States at https://www.unescap.org/sites/default/d8files/IDD-APDR-Subreport-Pacific-SIDS.pdf

Climate and Disaster Risks in the Pacific

The southwest Pacific area is surrounded by the "Ring of Fire", a region of intense tectonic activity. Numerous volcanoes ring the Pacific Ocean and it is known to produce large earthquakes. There are major subduction zones that either have generated damaging tsunamis in the past or could plausibly generate them in the future.

Geoscience Australia (2009) A Probabilistic Tsunami Hazard Assessment of the Southwest Pacific Nations at http://www.ga.gov.au/webtemp/image_cache/GA20154.pdf

Current and future climate-related drivers of risk for small islands during the 21st century include sea level rise, tropical cyclones, increasing air and sea surface temperatures, and changing rainfall patterns.

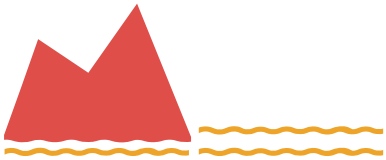
IPCC Fifth Assessment Report (2014) Small islands. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. At https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap29_FINAL.pdf

Climate and Disaster Risks in the Pacific

Storm surges in the Pacific are projected to increase in frequency by as much as

1000-fold by 2100

UNESCAP & USP (2018) Ocean Cities of the Pacific Islands, Policy Brief #1: The Ocean and the City at https://www.unescap.org/sites/default/d8files/knowledge-products/Ocean%20Cities%20of%20the%20Pacific%20Islands_PB1_UNESCAP_USP.pdf



In the Pacific, sea-level rises 4 times faster than the global average.

By 2100, sea-level rise may reach more than 1 meter

ADB (2017) Climate Change in Asia and the Pacific (Infographic) at https://www.adb.org/news/infographics/climate-change-asia-and-pacific

The World Risk Report identifies the Pacific as a hotspot for climate change and disaster risk, with **Vanuatu, Tonga, Solomon Islands, Papua New Guinea, Fiji and Kiribati listed in the 20 countries most at risk** and vulnerable to disasters.

World Risk Report 2020 at https://reliefweb.int/sites/reliefweb.int/files/resources/WorldRiskReport-2020.pdf

Across the Pacific SIDS, there is a high exposure of people and the economy to both climate-related and seismic hazards.

73% population **65%** economic assets

are exposed to seismic hazards.

26% population **39%** economic assets

exposed to tropical cyclones.

UNESCAP (2020) The Disaster Riskscape across the Pacific Small Island Developing States at https://www.unescap.org/sites/default/d8files/IDD-APDR-Subreport-Pacific-SIDS.pdf

A person in Pacific SIDS is found to be

three to five times more at risk

than those in the rest of the Asia-Pacific region.

UNESCAP (2019) Asia Pacific Disaster Report at https://www.unescap.org/publications/asia-pacific-disaster-report-2019

Risk Drivers and Multipliers

Coastal Population

90 per cent of the regional population outside of Papua New Guinea live within 5 km of the ocean. And an average of 43.2 per cent of the population lives at elevations no higher than 5 meters, exposed to climate and disaster risks including storm surge and sea-level rise.

UNESCAP & USP (2018) Ocean Cities of the Pacific Islands, Policy Brief #1: The Ocean and the City at https://www.unescap.org/sites/default/d8files/knowledge-products/Ocean%20Cities%20of%20the%20Pacific%20Islands_PB1_UNESCAP_USP.pdf

Poverty

Natural disasters hit poor people harder because they live in vulnerable overexposed areas, have lower-quality assets. In addition to hitting the poorest, disasters can also cause the near poor – those living on between US$1.90 and US$3.10 per day – to fall into poverty.

During **TC Winston (2016) in Fiji** around **14 per cent of the population** could have slipped below the poverty line as a result.

In Vanuatu, TC Pam (2015) disproportionately impacted vulnerable populations, including the poor. It was estimated that around **4,000 people** had slipped below the poverty threshold.

UNESCAP (2017) Asia Pacific Disaster Report 2017: Leave no one behind at https://www.unescap.org/publications/asia-pacific-disaster-report-2017-leave-no-one-behind

Gender Inequality

In areas where gender inequality is high, and women and gender minorities have limited access to physical, financial, human, social and natural capital, the impact of disasters on women and gender minorities is disproportionately high, resulting in a glaring gender gap in mortality rates of men and women.

UN Women and UNICEF (2019) Gender and Age Inequality of Disaster Risk at https://reliefweb.int/sites/reliefweb.int/files/resources/Gender%20and%20age%20inequality%20of%20disaster%20risk.pdf

Food Insecurity

Small Island Developing States share a number of challenges that make them uniquely vulnerable to food insecurity, including: limited land mass and population; fragile natural environments and lack of arable land; high vulnerability to climate change, external economic shocks, and natural disasters; typically high dependence on food imports; dependence on a limited number of economic sectors; and distance from global markets.

FAO (2017) Global Action Programme on Food Security and Nutrition in Small Island Developing States at http://www.fao.org/3/i7297e/i7297e.pdf

Risk Drivers and Multipliers

Water Scarcity

Water resources are often limited to rainwater harvesting, which is vulnerable to natural variability in precipitation patterns or changes in storm tracks. Although surface water is found on islands with higher altitudes, on low islands and atolls, it is often brackish and not usable as a freshwater resource.

ADB (2020) Pacific Urban Update 2020 at https://www.adb.org/sites/default/files/institutional-document/619621/pacific-urban-update-2020.pdf

Vulnerability to Human Health

Direct effects such as the health impacts of extreme weather events such as Cyclones, Flooding, Droughts and Heatwave.

Indirect effects such as waterborne diseases, malnutrition and foodborne diseases, vector-borne diseases, zoonoses, respiratory illness, and disorders of the eyes, ears, skin and other body systems

Diffuse effects such as mental/psychosocial illnesses, noncommunicable diseases (NCDs), pressures on fragile health systems and population displacement.

WHO (2015) Human Health and Climate Change in Pacific Island Countries at https://www.who.int/publications/i/item/human-health-and-climate-change-in-pacific-island-countries

Economics of Climate Change

Estimated Infrastructure Investment Needs

The Pacific will need to invest

US$46 billion

from 2016 to 2030, or US$3.1 billion per year, if the region is to maintain its growth momentum, eradicate poverty, and respond to climate change.

ADB (2017) Meeting Asia's Infrastructure Needs at https://www.adb.org/publications/asia-infrastructure-needs

Adaptation Costs for Coastal Protection in 2040

The highest adaptation costs for PICs by 2040 will be coastal protection in the worst-case scenario, with a sea level rise of 126 cm by 2100 and increased cyclones intensity, **the coastal protection costs go up to US$329 million per year in Fiji (3% of GDP) and US$58 million in the Marshall Islands (13% of GDP).**

World Bank (2017) Climate Change and Disaster Management (Pacific Possible Background Paper No.6) at https://openknowledge.worldbank.org/handle/10986/28137

Protecting Buildings against Cyclone Winds

As the intensity of tropical cyclones is likely to increase, it is critical to protect buildings against stronger cyclone. For new buildings, ensure that they can withstand at least 1-in-50 year cyclone wind speeds.

For existing buildings, cyclone wind retrofitting options can decrease expected losses by 35-50% especially in countries which face higher cyclone risks, notably Vanuatu, Fiji, RMI, Tonga and Samoa.

World Bank (2017) Climate Change and Disaster Management (Pacific Possible Background Paper No.6) at https://openknowledge.worldbank.org/handle/10986/28137

The cost of managing the risk of sea level rise on atoll nations is likely to be significant.

In Kiribati for example, the cost of coastal adaptation could be between US$17 - 54 million in the 2040s, which is about 4 - 11% of Kiribati's GDP.

World Bank (2017) Climate Change and Disaster Management (Pacific Possible Background Paper No.6) at https://openknowledge.worldbank.org/handle/10986/28137