

PACIFIC RISK PROFILE TONGA



Basic Country Statistics

Land Area
749 km²

Pacific Community (SPC) Our Members at
<https://www.spc.int/our-members/>

Maximum Height Above Sea-level
1,033 m

Pacific Community (SPC) Our Members at
<https://www.spc.int/our-members/>

Number of Volcanoes & Per cent of Population at Volcanic Risk

18 volcanoes

2%

People live within 30 km of volcanoes

UNDRR (2015) Global Assessment Report Country Risk Profile at
<https://www.preventionweb.net/english/hyogo/gar/2015/en/home/data.php>

Per cent of Urban Population

23%

SPC Pocket Statistical Summary 2020 at https://sdd.spc.int/digital_library/pocket-statistical-summary-resume-statistique-de-poche-2020

Per cent of Coastal Population

84%

People live within 1 km of the coast

100%

People live within 5 km of the coast

100%

People live within 10 km of the coast

SPC Statistics (Map) at <https://sdd.spc.int/mapping-coastal>



Total Population
(2020 Estimate)

99,775
persons



Total Male & Female Population
(2020 Estimate)

Male
49,742
persons or 49.85%

Female
50,033
persons or 50.15%

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

Gross Domestic Product (GDP) per Capita

US\$5,081
(2019)

SPC Pocket Statistical Summary 2020 at
https://sdd.spc.int/digital_library/pocket-statistical-summary-resume-statistique-de-poche-2020



Population Density

133 persons/km²

SPC Pocket Statistical Summary 2020 at
https://sdd.spc.int/digital_library/pocket-statistical-summary-resume-statistique-de-poche-2020



Disability Prevalence

7.6%

UNESCAP (2019) Disability at a Glance at <https://www.unescap.org/publications/disability-glance-2019>

Women's Share of Managerial Positions

30%

Women's Labour Force Participation Rate

42%

Women's Share of Wage Employment in the Non-agriculture Sector

47.9%

Ever-Partnered Women Experienced Violence by Intimate Partner

40%

ADB (2016) Gender Statistics for the Pacific and Timor-Leste at <https://www.adb.org/publications/gender-statistics-pacific-and-timor-lesle>

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

Hazard Likelihood



Earthquake
High Likelihood



Volcano
Medium Likelihood



Landslide
Medium Likelihood



Tsunami
High Likelihood



Coastal Flood
Medium Likelihood



Wildfire
Very low Likelihood

Tropical Cyclones in Tonga

In the capital city of Tonga, a cyclone with a 100-year return period, or with a 50% chance of occurring within the current generation, could likely inflict damage equivalent to 60 per cent of GDP.

World Bank Climate Change Knowledge Portal at <https://climateknowledgeportal.worldbank.org/country/tonga/vulnerability>

Legend

 Very low	 Medium
 Low	 High

ThinkHazard! at <https://thinkhazard.org/en/report/7245-tonga>

Economic Loss Due to Disasters

Total Average Annual Losses (AAL)

US\$76.81 million

UNESCAP (2020) The Disaster Riskscape across the Pacific Small Island Developing States at <https://www.unescap.org/sites/default/files/100-APDR-Subreport-Pacific-SIDS.pdf>

AAL as a Percentage of GDP

18.20%

UNESCAP (2020) The Disaster Riskscape across the Pacific Small Island Developing States

Adaptation Costs for Coastal Protection

US\$9~35 million per year

or 1~4% of projected GDP in 2040

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

Risk Index

World Risk index

Tonga is ranked 2nd among the countries with the highest disaster risk

due to high exposure to extreme natural events and sea-level rise.

Exposure - Very High
Vulnerability - High
Susceptibility - High
Lack of Coping Capacities - High
Lack of Adaptive Capacities - Medium

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

Climate Risk Index for 1999-2018

Between 1999 and 2018, Tonga was the 75th country most affected by extreme weather events.

Global Climate Risk Index 2020 at <https://www.germanwatch.org/en/17307>



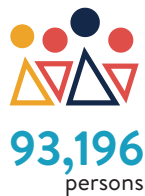
INFORM Covid-19 Risk

Tonga's risk level is medium when assessing the potential humanitarian impacts of Covid-19 in combination with other pre-existing crisis risks.

INFORM Covid-19 Warning (beta version) at <https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Covid-19/INFORM-Covid-19-Warning-beta-version>

Major Disasters 2011-2020

Total Population Affected



Total Damage

US\$145 million

Number of Major Cyclones in 2011-2020



TC Wilma (2011)
TC Ian (2014)
TC Ula (2016)
TC Winston (2016)
TC Zena (2016)
TC Gita (2018)
TC Harold (2020)

Per cent of Disaster Type (Major Disasters 2011-2020)



70% Storm



10% Drought



20% Epidemic

EM-DAT Database (February 2021) at <https://www.emdat.be/>

TC GITA (2018)

Cyclone Gita was the strongest tropical cyclone to impact Tongatapu and 'Eua since TC Isaac (1982), with average wind speeds of 130 kph and gusts of up to 195 kph.



The storm impacted approximately 80,000 people, which is around 80 per cent of Tonga's population.

The total economic value of the effects caused by TC Gita was estimated to be approximately

US\$164.1 million that is equivalent to 37.8 per cent of the nominal gross domestic product (GDP) in Tonga.

Per cent of Economic Damage and Loss by Sectors



8%

Infrastructure Sectors (transport, water and sanitation, electricity, communications)



38%

Social Sectors (education, health, housing)



54%

Productive Sectors (agriculture, tourism, commerce)

Climate Projection



Cyclone

Tropical cyclones are projected to be less frequent but more intense.

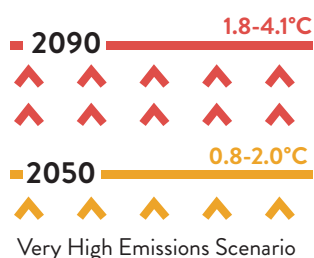


Rainfall

Projections of annual rainfall are unclear with some models suggesting a slight increase by the end of the century. Extreme rainfall events are projected to become more frequent and more intense.

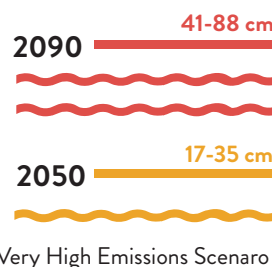
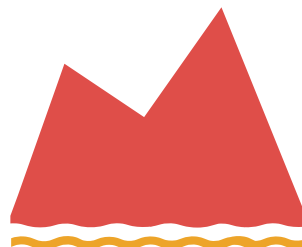
Temperature

Annual mean temperatures and extremely high daily temperatures will continue to rise.



Sea-level Rise

Sea level is expected to continue to rise.



Ocean Acidification



Ocean acidification is expected to continue.

Coral Bleaching Risk



The risk of coral bleaching is expected to increase.

El Niño / La Niña



El Niño and La Niña events will continue to occur in the future.

In Nuku'alofa and Lupepau'u, **El Niño** events tend to bring **cooler dry seasons** and drier wet seasons than normal, while **La Niña** events **usually bring wetter** than normal conditions.