PACIFIC RISK PROFILE
TONGA

Australian Aid

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-leste

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.**

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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/245-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/d8files/IDD-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

93,196 persons
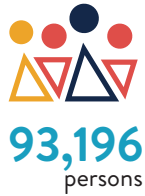
Total Damage

US$145 million

Number of Major Cyclones in 2011-2020

7

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)

PDNA TC Gita, Tonga, 2018 at https://www.gfdrr.org/sites/default/files/publication/tonga-pdna-tc-gita-2018.pdf

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.
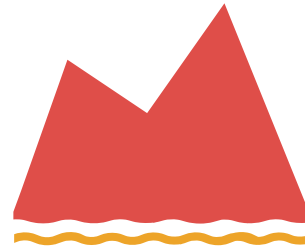
Temperature

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

2090 — 1.8-4.1°C

2050 — 0.8-2.0°C

Very High Emissions Scenario
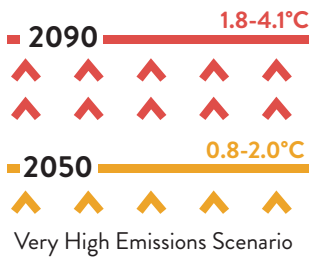
Sea-level Rise

Sea level is expected to continue to rise.

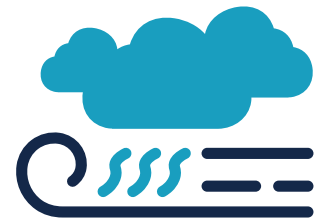**2090** — 41-88 cm

2050 — 17-35 cm

Very High Emissions Scenaro

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.