

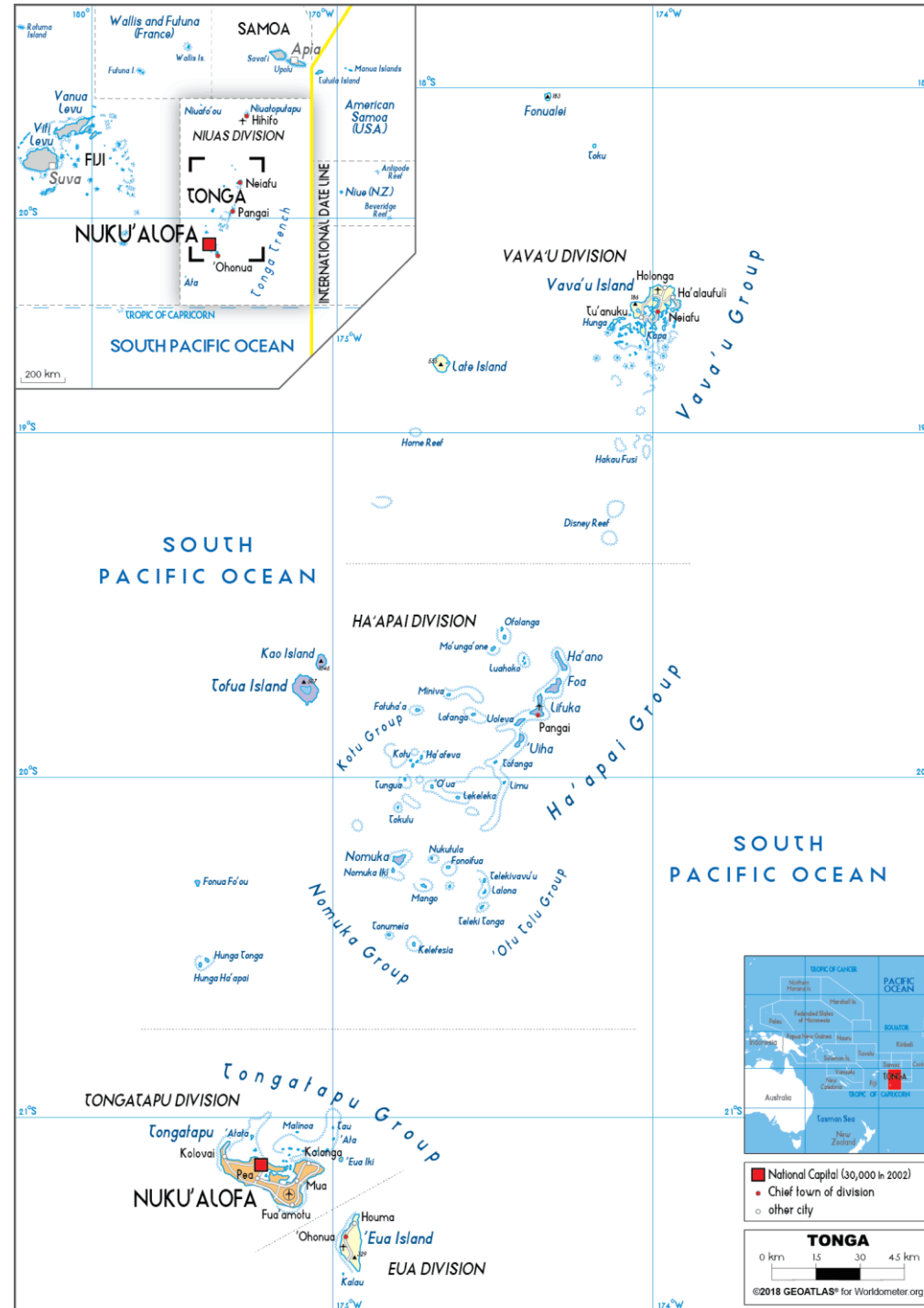
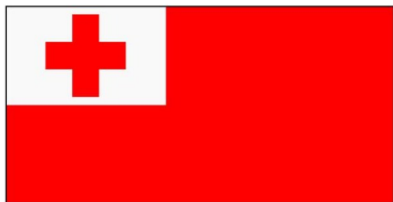
An Overview

Tonga Meteorological Service

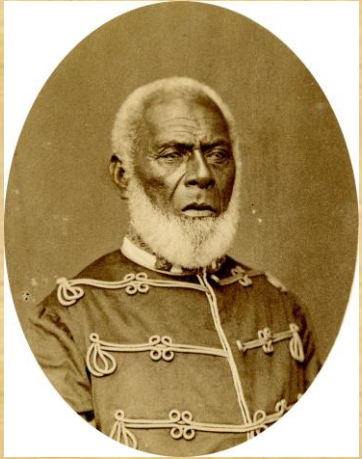


Map of the Kingdom of Tonga

Population
(105,000)



Kingdom of Tonga – The Monarchy



George
Tupou I
1845-1893



George
Tupou II
1893-1918



Salote
Tupou III
1918-1965



Taufa'ahau
Tupou IV
1965-2006



George
Tupou V
2006-2012



Tupou VI
2012 - Now

Kingdom of Tonga – Christianity



Kingdom of Tonga – Tourism



Kingdom of Tonga - Agriculture



Kingdom of Tonga - Fisheries





Kingdom of Tonga - Culture

Kingdom of Tonga - Sport



Tonga Meteorological Service

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Is a Department of the Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications

Meteorology Act 2017

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Meteorological and Ocean Events

“**meteorological-related event**” means the following -

- (a) drought;
- (b) extreme temperature;
- (c) flash flooding;
- (d) fog;
- (e) hail;
- (f) heavy rain;
- (g) strong, gale, storm or hurricane force winds not associated with a tropical system;
- (h) thunderstorm (including lightening);
- (i) tornado;
- (j) tropical system (includes a tropical disturbance, tropical depression or tropical cyclone);
- (k) El Nino; and
- (l) La Nina;

“**ocean-related event**” means the following -

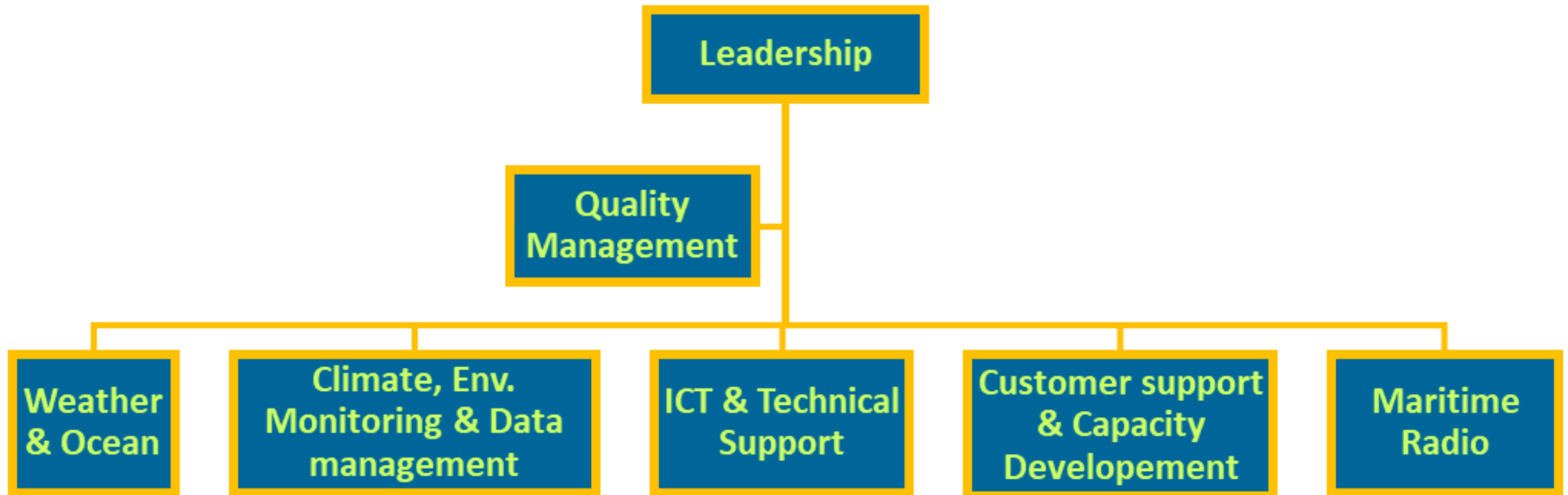
- (a) damaging swells;
- (b) extreme ocean temperature;
- (c) extreme tide;
- (d) sea flooding;
- (e) sea level rise;
- (f) storm surge; and
- (g) tsunami;



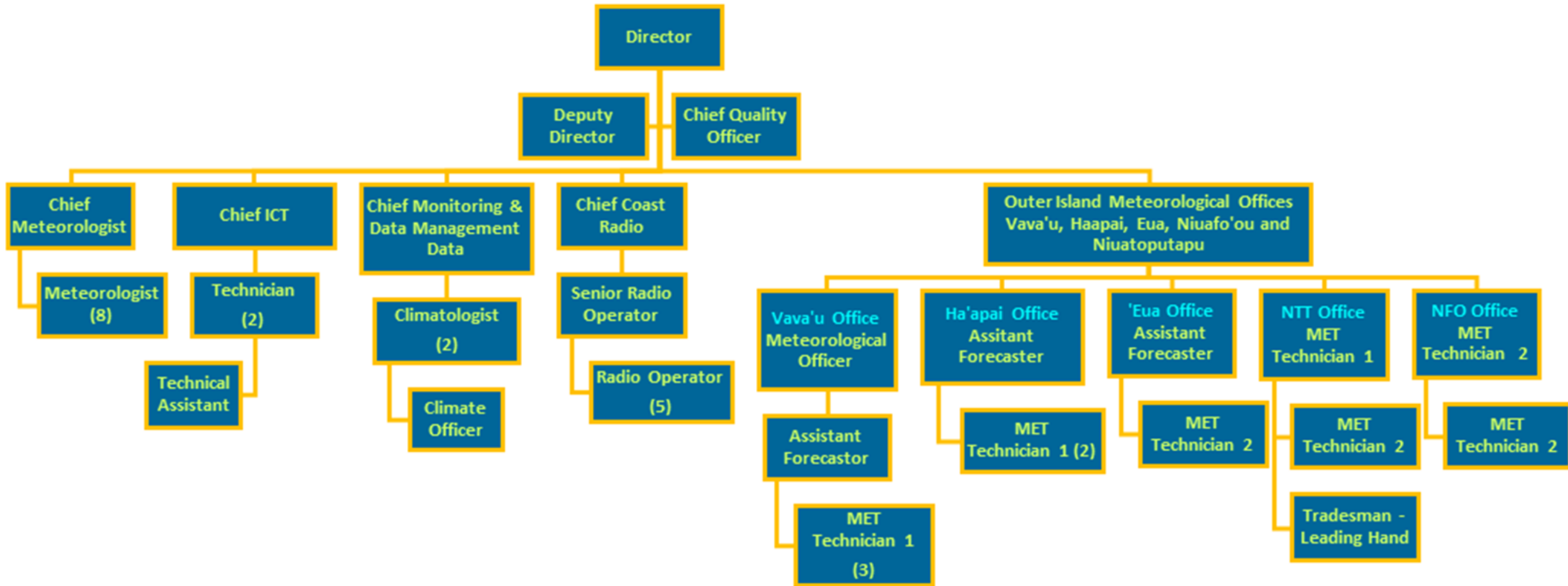
History

- 1928-1931** First 5 Telegraph stations manned by locally trained staff were established at Niuafou'ou, Niuatoputapu, Vava'u, Ha'apai and Tongatapu (Nuku'alofa). Each station was equipped with a weather station consisting of the rain gauge, barometer, a Stevenson screen (with Dry, Wet, Max, and Min thermometers) Each station recorded the weather at 2100Z in field books and weather observation report was telegraphed to Suva, Fiji.
- 1942** The Royal New Zealand Air Force (during WWII) established a base at Fua'amotu (today's main airport). There they established a 6th Weather Station.
- 1946** The South Pacific Air Transport Council (SPATC) was established. Major countries involved were New Zealand, Australia, United Kingdom, [France](#) and many islands of the Pacific. Part of their responsibilities included production of weather forecasts (from Nadi), train personnel, provide equipment and salaries for the operations of weather stations in the Pacific including Tonga. This setup was administrated from Wellington, New Zealand.
- 1948** First qualified weather observer returned from being training in Suva, Fiji and took up post at the Fua'amotu Station.
- 1951** The Fua'amotu Weather stations was shut down and moved to Nuku'alofa. 2 more staff were also recruited to be part of the Nuku'alofa station.
- 1970** The Government (Telecommunication Department) took over Meteorological Services from the Marconi and Telegraph
- 1986** The Meteorological Service [were](#) transferred to be a Division of the Ministry of Civil Aviation.
- 2003** The Meteorological Service Headquarters relocated back to Fua'amotu International Airport where it remains until today.
- 2014** The Meteorological Service under Government reform becomes a Department under the Ministry of Meteorology, Information, Energy, Disaster Management, Environment, Climate Change and Communications (MEIDECC) after transmissions from Ministries of Civil Aviation, [Transport](#) and Infrastructure between 2006 to 2014 under World Bank funded Government Reform. It remains a Department of MEIDECC as of 30 September 2022.

Program structure



Organization structure



Human Resources

2.2.1 Staffing and staff classifications summary

The classifications of the 40 staff of the TMS as of 30 June 2022 are as follows:

Staff Classification	Male	%	Female	%	Total	%
Professional	14	88%	2	12%	16	40%
Technical	19	79%	5	21%	24	60%
Total	33	83%	7	17%	40	100%

From the classification of staff two conclusions can be made

1. The percentage of professional staff relative to technical staff at TMS is high.
2. The gender ratio is heavily male dominated and need particular attention to close the staff gender gap.



Achievements

1996

• Tonga becomes a Member of WMO on 26 February 1996

2003

• Tonga Prime Minister attends WMO Congress requesting WMO Assistance for Tonga to establish its own autonomous forecasting capability

2005

• First Director of Meteorology position created by Government

2007

• Forecasting Center Commissioned on 11 September 2007

2015

• Tonga hosts the 1st Meeting of Pacific Islands Meteorology Ministers and 3rd Pacific Meteorology Council.

2017

• Public Service Commission approves staff reform of the TMS
• Meteorology Act Enacted in Parliament

2018

• Tonga Hosts WMO RAV 17th Session. Tonga Director elected President of WMO Regional Association V

2019

• 19 Automatic Weather Stations and 2 permanent tide gauges installed through ADB Funded Climate Resilience Sector Project

2020

• MHEWS Centre in Ha'apai Commissioned. Funded under World Bank IDA

2021

• MHEWS Centre in Vava'u Commissioned. Funded under World Bank IDA
• Completion of recruitment of Meteorologists (8 recruited)

Vision

“A more resilient Tonga by 2030 to socioeconomic consequences of extreme meteorological, ocean and other environmental events; and support its sustainable development through the best possible services.”

Mission

“To monitor and predict changes in the weather, climate, ocean and other environmental conditions through governance, cooperation and partnerships, the exchange of data, information and services, application, research and capacity development”



Core Values

- 1. Accountable*
 - 2. User focused*
 - 3. Collaboration and partnerships*
 - 4. Inclusive*
 - 5. Inovative*
- 



Observations Network

20 Automatic
Weather
Stations

5 Sea Level
Monitoring
Stations

5 Seismic
Stations

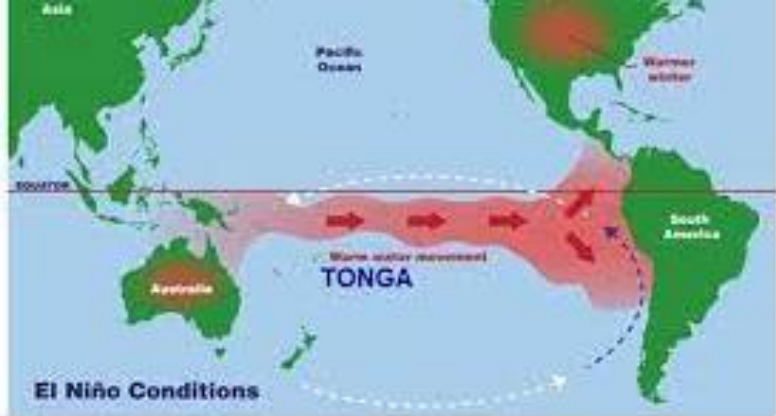


Figure 1: The set-up of El Niño conditions in the South Pacific Ocean.
(Source: <http://www.ck12.org/earth-science/El-Ni%C3%B1o-Conditions/>)



Services

- Aviation Wx Services (Tonga/Fiji)
- Marine Wx Services
- Marine Radio Services 24/7
- Public Wx Services
- Tropical Cyclone Warnings
- Tsunami Warnings
- Tailored Services
- Climate Services
- Ocean Services
- Severe Wx Services
- Volcano Warning Services



Budget 2023/24

Salaries

USD500K (80%)

Operations

USD115K (20%)

Development Projects

USD15M

TMS Strategic Framework and Implementation Plan 2023-27 (USD20M)



Strategic Goal 1: To provide an enabling environment for TMS to enhance performance, strengthen stakeholder confidence and improve its ability to effectively respond to external changes.

Strategic Goal 2: To better detect changes in atmosphere, ocean and the environment and provide quality data required to predict future changes.

Strategic Goal 3: To reduce vulnerabilities and improve preparedness and response to extreme meteorological, ocean and other environmental events.

Strategic Goal 4: To strengthen the capability of the TMS to sustainably meet its goals and objectives.

Strategic Goal 5: To enhance products and services that meet the users' needs.