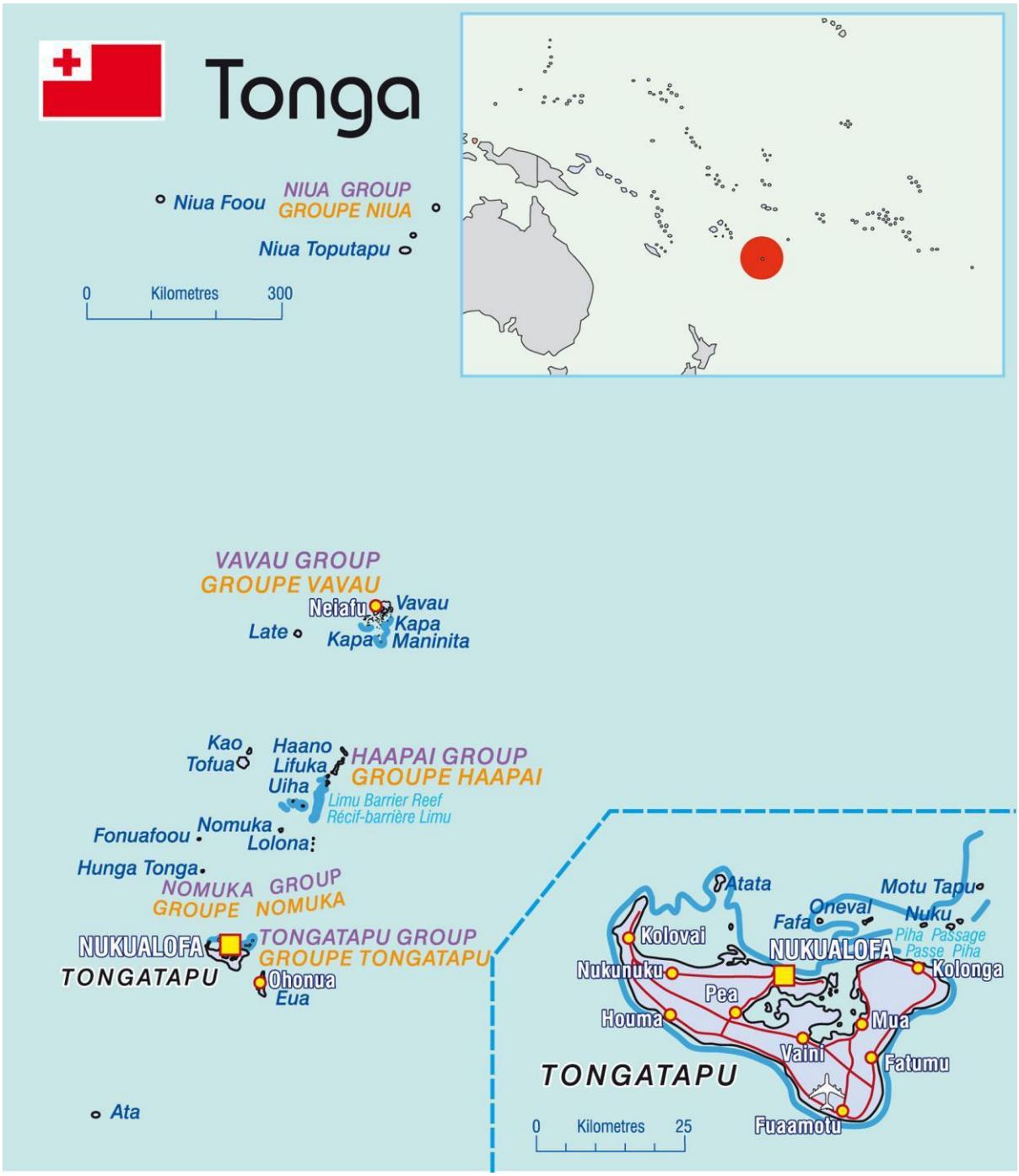
Version 1_June 2019

CLIMATE CHANGE PROFILE

KINGDOM OF TONGA

VERSION 1

THE PACIFIC COMMUNITY GLOBAL CLIMATE CHANGE ALLIANCE PLUS - SCALING UP PACIFIC ADAPTATION PROJECT
Funded by the European Union


Tonga
Niua Foou
NIUA GROUP
GROUPE NIUA
Niua Toputapu
0 Kilometres 300
VAVAU GROUP
GROUPE VAVAU
Neiafu
Vavau
Kapa
Maninita
Late
Kapa
Kao
Tofua
Haano
Lifuka
Uiha
HAAPAI GROUP
GROUPE HAAPAI
Limu Barrier Reef
Récif-barrière Limu
Fonuafoou
Nomuka
Lolona
Hunga Tonga
NOMUKA GROUP
GROUPE NOMUKA
NUKUALOFA
TONGATAPU
TONGATAPU GROUP
GROUPE TONGATAPU
Ohonua
Eua
Ata
Atata
Motu Tapu
Oneval
Fafa
Nuku
Piha Passage
Passe Piha
Kolovai
NUKUALOFA
Kolonga
Nukunuku
Pea
Houma
Mua
Vaini
Fatumu
TONGATAPU
0 Kilometres 25
Fuaamotu

CONTENTS

OBJECTIVES OF THE CLIMATE CHANGE PROFILE **5**

COUNTRY BACKGROUND **5**

Government **6**

National and Sector Policies and Strategies **7**

Economy **7**

Financial Management **8**

RESPONSE TO CLIMATE CHANGE **9**

Current Climate 9

Expected Future Climate 9

Institutional Arrangements for Climate Change **11**

Ongoing Climate Change Adaptation Activities in Tonga **11**

National and Sector Climate Change Priorities **13**

Gaps and Constraints **13**

Key Challenges to Adaptation **14**

References **16**

Abbreviations

ADB	Asian Development Bank
CCA	Climate Change Adaptation
CCCPIR	Coping with Climate Change in the Pacific Island Region
DCCEE	Department of Climate Change and Energy Efficiency of Australia
DPFI	Democratic Party of the Friendly Islands
DRM	Disaster Risk Management
EEZ	Exclusive Economic Zone
ENSO	El Nino-Southern Oscillation
EU	European Union
GCCA: PSIS	Global Climate Change Alliance: Pacific Small Island States
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIZ	Gesellschaft fur Internationale Zusammenarbeit, German Technical Cooperation
GNI	Gross National Income
HDI	Human Development Index
ICCAI	International Climate Change Adaptation Initiative
IUCN	International Union for conservation of Nature
JNAP	Joint National Action Plan for Climate Change Adaptation and Disaster Risk Management
MLECC&NR	Ministry of Lands, Environment, Climate Change and Natural Resources
NSPF	National Strategic Planning Framework
PACCSAP	Pacific Australia Climate Change Science and Adaptation Planning
PEFA	Public Expenditure and Financial Accountability Assessment
PFM	Public Financial Management system
PPCR	Pilot Programme on Climate Resilience
PUMA	Planning and Urban Management Agency
SDP8	Strategic Development Plan 8
SPC	Secretariat of the Pacific Community
SPCR	Strategic Programme on Climate Resilience
SPREP	Secretariat of the Pacific Regional Environment Programme
TOP	Tongan Pa'anga
TSDF	Tonga Strategic Development Framework
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

OBJECTIVES OF THE CLIMATE CHANGE PROFILE

This climate change profile for Tonga has been prepared as part of the Pacific Community's (SPC) Global Climate Change Alliance Plus – Scaling Up Pacific Adaptation (GCCA+ SUPA) project.

The goal of the GCCA+ SUPA project is to support the governments of ten Pacific Island countries, namely Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Tonga and Tuvalu, in their efforts to tackle the adverse effects of climate change. The logic behind the design of the project is to learn from the past in order to scale up Pacific adaptation and address capacity gaps.

This climate change profile is specific in nature and seeks to inform the GCCA+ SUPA project as well as the larger SPC climate change support team. It commences with a section on the country's background, including geography, economy, financial management and aid delivery. This is followed by a section focusing on the country's response to climate change, including climate change projections, institutional arrangements, ongoing adaptation activities and climate change priorities. The profile is a work in progress and will be revised and enhanced as the project develops.

COUNTRY BACKGROUND

Country Information	
Geographic coordinates	Lat. 15^0- 23^0 S, Long. 173^0-177^0W
Total land area	747 km^2
Tongatapu coastline	40km
Exclusive Economic Zone	700,000 km^2
Population (2016 census)	101,436
Population forecast (2019)	102,996
Annual Population Growth rate (2018)	0.5 %
Population density (2016)	158 people per km^2
Access to improved water supply (2015)	99.60% of population[ia]
Access to improved sanitation facilities (2015)	91% [ib]
Human development index (2017)	0.726[1]

Introduction

The Kingdom of Tonga is located in the central South Pacific and it lies between 15° and 23°S and 173° and 177°W. Tonga is an archipelago of 172 coral and volcanic islands of which 36 are inhabited over a land area of 649 km^2. Tonga consists of four main island groups: (1) Tongatapu (260 km^2) and 'Eua (87 km^2) in the south, (2) Ha'apai (109 km^2) in the middle, (3) Vava'u (121 km^2) in the north and (4) Niuafo'ou and Niua Toputapu (72 km^2) in the far north. The islands of Tonga are formed on the top of two parallel submarine ridges, stretching from southwest to northeast and enclosing a 50 km wide trough. Several volcanoes, some of which are still active exist along the western ridge, while many coral islands have formed along the eastern ridge; among them are the Vava'u and Ha'apai island groups. Coral islands are in two categories. Low coral islands, as exemplified by the Ha'apai group of flat islands of sand which rise to 15m above sea level. These islands were formed on the coral reef platforms. Raised coral islands,

[1] The human development index (HDI) is a comparative measure of life expectancy, literacy, education, and standards of living for countries worldwide. It is a standard means of measuring well-being, especially child welfare. It is used to distinguish whether the country is a developed, a developing or an under-developed country, and also to measure the impact of economic policies on quality of life. The HDI score indicates that Tonga is in the medium human development category.

including Tongatapu, 'Eua and the Vava'u islands groups have been tilted by earth pressures and show a marked topography. The Niuas are high volcanic islands surrounded by fringing and barrier reefs.

Government

The Kingdom of Tonga is a constitutional monarchy. The governing structure comprises the Monarch in the Privy Council of Tonga, the Cabinet, the Legislative Assembly and the Judiciary. The Monarch is head of state and the Prime Minister is head of government. The monarch presides over the Privy Council, which comprises cabinet members (ministers, including the Prime Minister plus the governors of Ha'apai and Vava'u). The Privy Council is the highest executive authority in the kingdom. The Monarch appoints the ministers and governors; in effect, this means appointment for life or until they receive his permission to retire or are asked to resign. The constitution provides for a Legislative Assembly, comprising of 30 members – 17 members are elected by the people, 9 members are elected by the nobles (there are 33 hereditary nobles in Tonga) and the Prime Minister can nominate and the Monarch appoint up to 4 extra Cabinet members from outside the Assembly. Elections for the Legislative Assembly have been held every three years, with nobles' and peoples' representatives being elected on different days.

The November 2010 elections were held under new arrangements, following a process of political reform. The new model considerably reduced the powers of the Monarch, which have devolved to the Cabinet and the Cabinet is now answerable to the Legislative Assembly. Members of the Legislative Assembly elect a Prime Minister, who is then formally appointed by the Monarch. For the first time the elected Prime Minister has a constitutional mandate to govern. The last general elections were held in 2017 and resulted in a victory for the Democratic Party of the Friendly Islands (DPFI), with ‘Akilisi Pohiva remaining as Prime Minister.

Tonga has a centralised governance structure and does not operate local government. All financial accountabilities reside with the Ministry of Finance and National Planning. Tonga is administratively divided into three main island groups: Ha'apai, Tongatapu, and Vava’u. The two governors who are members of the Privy Council have delegated responsibilities in the overall administration and reporting of outer islands affairs. Districts and town officers or representatives chosen by the community and stationed in these islands report to the Office of the Prime Minister. The National Strategic Planning Framework envisions a significant change in the governance structures for the outer islands through the establishment of village districts and councils, with the objective of giving communities a greater say in local and regional development.

The public service is currently administered through 14 government ministries and the Prime Minister’s Office. Together they make up approximately 18% of the employed formal labour force.

Table 1: Ministries of Government

Ministry of Agriculture, Food, Forests and Fisheries
Ministry of Commerce, Tourism and Labour
Ministry of Education and Training
Ministry of Finance and National Planning
Ministry of Foreign Affairs and Trade
Ministry of Health

Ministry of Infrastructure
Ministry of Internal Affairs
Ministry of Justice
Ministry of Lands, Survey and Natural Resource
Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications
Ministry of Police, Fire Services and Prisons
Ministry of Public Enterprises
Ministry of Revenue Services
Prime Minister's Office

Economy

Economic Information	
Gross Domestic Product (GDP (2017)	US$426.1 million
GDP per capita (2017)	US$3,944
Annual real GDP growth (2017)	2.7%
Inflation rate (2017)	7.4%
Unemployment rate (est. 2017)	1.13%

Tonga has a small economy that is heavily reliant on foreign aid and remittances from Tongans living and working overseas and foreign aid to fund a large current account deficit. In 2017, remittances to Tonga accounted for 37.1% (or US$158 million) of GDP.

Financial Management

The public expenditure and financial management system (PFM) in Tonga is based on a solid legal and regulatory framework, which sets out budgeting, spending and accountability structures. These include responsibility and accountability for public funds delegated to individuals and some oversight by the Legislative Assembly. The PFM system also includes clear statements of the powers and respective duties of the Ministry of Finance and National Planning, the Revenue Services Department, the Customs Department, the Public Services Commission and the Audit Office. The legal framework that underpins the PFM system includes expenditure control procedures covering wages and salaries, non-salary items, and procurements. Thus, there are clear rules and procedures in place and these tend to be followed by the various agencies of government.

The *2010 Public Expenditure and Financial Accountability (PEFA) Public Financial Management Performance Report* found Tonga's PFM system to be mostly operating at average or above average levels when compared to international best practice. Significant improvements in recent years have included a shift towards multi-year budgeting, revenue collection and enforcement, which has resulted in the level of tax arrears being identified and actively pursued, using a risk management approach. There is still room for further improvements in the PFM system, especially in improving budget credibility at the ministry/department/agency level by strengthening the links between the national strategic planning

framework and individual corporate plans. There is also scope for strengthening the transparency around the financial operations of public enterprises, procurement contracts entered into by the state and audits performed by the Audit Office. On 6th June 2019, the Asian Development Bank (ADB) approved a $5 million grant to continue assisting Tonga in strengthening its fiscal position. This includes adopting prudent policies and better public financial management, aiming to improve Tonga's business climate with policy, regulator and public enterprise reforms.

Direct budget support

Tonga faces a number of key macro-economic challenges: large dependency on direct budget support to support its recurrent expenditure, a large wage bill and other non-discretionary expenditure, a high debt level, a high trade deficit from the high inflow of aid and remittances, a decline in cash remittances, high liquidity but declining credit, and general weaknesses in the key economic sectors. Given the macroeconomic situation, it appears that Tonga depends on direct budget support from bilateral donors and its development partners.

Trust Fund

The Tonga Climate Change Trust Fund was established in Tonga in 2011 and launched in 2017 to fund climate change adaptation and mitigation activities. The fund aims to assist the government in planning, financing and delivering on climate policies, projects/programmes. It will centralise funding through the mandated Ministry of Lands, Environment, Climate Change and Natural Resources, which allows for enhanced coordination of all climate change-related activities. The fund will also provide grants to line ministries to support climate change-related projects within the government. Initial capitalization of the fund was provided by US$5 million from Tonga's Strategic Programme on Climate Resilience supported through the ADB. The fund is designed to be a self-sustainable long-term financing mechanism, with sound fiduciary management and a robust governance system for management of the funds which will in effect aid in building a stronger relationship between the government of Tonga and potential donors and development partners for further contributions to the fund.

Donor support

Current donors to Tonga are Australia, New Zealand, Japan, China, the Asian Development Bank, the World Bank and the European Commission. The government established an Aid Coordination and Monitoring Division to harmonise donor activities in the country and track the effectiveness of development assistance.

National and sector policies and strategies

At the conclusion of *Strategic Development Plan Eight 2006–2009: Looking to the Future Building on the Past* (SDP8), Tonga made a shift from a strategic development planning process to a *National Strategic Planning Framework* (NSPF), an overarching planning framework, covering the period 2010–2015 with the vision 'To create a society in which all Tongans enjoy higher living standards and a better quality of life through good governance, equitable and environmentally sustainable private sector-led economic growth, improved education and health standards, and cultural development'. Outcome 7 of the NSPF "Integrate environmental sustainability and climate change into all planning and executing of programmes", was significant, as climate change adaptation had been recognised as a key enabling activity. The government also recognised within the context of the NSPF the potential negative effects of climate change and inter-annual variability, including extreme events, which pose a serious threat to the development of Tonga's fisheries, agriculture, tourism, public health, and coastal and water resources.

The government has developed a framework for multi-hazards risk management to address the risks posed by climate change and variability, including extreme events. Tonga was the first country in the Pacific region to develop its Joint National Action Plan on climate change adaptation and disaster risk management (JNAP) where it highlighted national and community priority goals and activities to be implemented. This plan was an important component of Tonga's Second National Communication Programme and an entry point to a coordinated approach in assisting the island kingdom to timely adaptation and disaster risks mitigation, thus achieving its sustainable development goals and aspiration.

Tonga's first climate change policy was developed in 2006 and was vital in formally repositioning climate change from an emerging environmental issue to a national priority. In 2015, with assistance from the European Union through the Global Climate Change Alliance: Pacific Small Island States project implemented by the Pacific Community, the government worked on a new climate change policy that provides an overarching context and framework with policy objectives that, for the most part, will require multi-sector coordination. The Tonga Strategic Development Framework I (2009-2014) and II (2015-2025) are results-based frameworks at the top-level of the planning and budgeting system of government. The TSDF provides high-level guidance for sector, district and corporate level plans and budgets.

RESPONSE TO CLIMATE CHANGE

Activities in response to climate change began in Tonga after the ratification of the UNFCCC on July 20 1998. Awareness on climate change and sea-level rise issues began with the implementation of the preparation of its initial national communication under the UNFCCC between 1999 and 2005. The preparation provided the avenue for discussing climate change issues and also undertaking some capacity building and awareness on climate change in Tonga.

Current and future climate

Current climate

There is a marked diurnal, seasonal and spatial variation in temperature. Mean annual temperatures vary according to latitude from 27°C at Niuafo'ou and Keppel (northernmost island) to 24°C at Tongatapu (in the south). Diurnal and seasonal variations can reach as high as 6°C throughout the island group. There is also a marked seasonality in the rainfall of Tonga between hot wet (November–April) and cool dry (May–October) seasons. The annual mean (1971–2007) rainfall for the five meteorological stations in Tonga show Tongatapu received on average of 1,721 mm, Vava'u 2,150 mm, Ha'apai 1,619 mm, Niuafo'ou 2,453 and Niua Toputapu 2,374 mm.

Niuafo'ou is both the wettest and the northernmost island of the Tongan archipelago located closer to the wet tropics and influenced by both the Intertropical Convergence Zone and the South Pacific Convergence Zone (SPCZ). The Ha'apai group receives the lowest rainfall due to its positioning between influence of SPCZ over northern Tonga and regions to the south, which come under the influence of the upper air jet stream and other extra tropical features.

Expected future climate

Projections for all emissions scenarios indicate that the annual average surface air temperature and sea-surface temperature will increase in the future in Tonga (Table 2). There will be more very hot days

and warm nights. The projections for future trends in rainfall are not clear but indicate a general decrease in dry season rainfall and an increase in wet season rainfall with an increase in extreme rainfall days. Tropical cyclones will be more intense but less frequent, while sea-level rise and ocean acidification will continue.

Table 2: Climate change projections for Tonga for 2030 and 2055 under the high emissions scenario (A2)

Climate Variable	Expected Change	Projected Change by 2030 (A2)	Projected Change 2055 (A2)	Confidence Level
Annual surface temperature	Average air temperature will increase	+0.3 to +1.1^{o}C	+1.0 to +1.8^{o}C	Moderate
Maximum temperature (1 in 20 year event)	More very hot days	NA	+0.8 to +2.0^{o}C	Low
Minimum temperature (1 in 20 year event)	Fewer cool nights	NA	–0.3 to +3.1^{o}C	Low
Annual total rainfall (%)	Annual rainfall will increase	–10 to +16%	–7 to +17%	Low
Wet season rainfall (%)	Wet season rainfall will increase	–10 to +20%	–6 to +24%	Moderate
Dry season rainfall (%)	Dry season rainfall will increase	–12 to +14%	–15 to +17%	Low
Sea surface temperature (^{o}C)	Sea-surface temperature will increase	+0.3 to +1.1^{o}C	+0.9 to +1.7^{o}C	Moderate
Annual maximum acidification (aragonite saturation)	Ocean acidification will continue to increase	+3.3 to +3.5 Ωar	+2.9 to +3.1 Ωar	Moderate
Mean sea level (cm)	Sea level will continue to rise	+7 to +27 cm	+11 to +51 cm	Moderate

Institutional Arrangements for Climate Change

Tonga has made significant efforts to create an institutional set-up for addressing climate change issues and concerns and to integrate climate change issues into the national planning processes. Of particular note is the development and adoption of Tonga's National Climate Change Policy, which was endorsed by government in 2006 and was followed by the establishment of the Ministry for Environment and Climate Change, which coordinates and implements all climate change activities in the country. The climate change policy identified key issues that affect the ability of Tonga to address climate change issues and concerns. These key issues include a lack of knowledge, a lack of physical and financial resources, a lack of comprehensive environmental legislation, inherent difficulties in discerning overlapping and unclear management powers, a lack of appropriate policy support, and a lack of public participation coupled with a basic lack of political will and commitment for sustainable development.

In recognition of the need for integration of climate change into development planning, Tonga developed the *Joint National Action Plan on Climate Change Adaptation and Disaster Risk Management* (JNAP 1) 2010–2015. In 2018, Tonga launched JNAP 2 (2018-2028) which is a revision of JNAP 1 and is the result of years of thorough consultations with various stakeholders, including communities, NGOs and line ministries. JNAP 2 and the Tonga Climate Change Policy are closely aligned in that the six objectives of the Policy have been developed in JNAP 2 to form a coherent, strategically focused 'whole of Tonga' approach to building resilience over the next decade. A key element of the 'whole of Tonga' approach is the strong focus on development of sector, cluster, community and outer islands resilient plans that fully integrate climate resilience and practical on-the-ground adaptation, reduction of greenhouse gases and disaster risk reduction. The focus is to ensure that all plans are aligned with the targets for a resilient Tonga by 2035.

Ongoing Climate Change Adaptation Activities in Tonga

Title	Description
Global Climate Change Alliance Plus – Scaling Up Pacific Adaptation (GCCA+ SUPA) *2019 – ongoing*	EU-funded 4.5-year project working in ten Pacific Island countries (nine small island states plus Fiji). The GCCA+ SUPA focuses on scaling up climate change adaptation measures in specific sectors supported by knowledge management and capacity building. Implementing partners: SPC (lead agency), SPREP and USP.
Global Climate Change Alliance Plus Intra ACP – Pacific Adaptation to Climate Change and Resilience (GCCA+ Intra ACP PACRES) *2018 – ongoing*	EU-funded 4.5-year project working in 15 Pacific Island countries. The GCCA+ Intra ACP PACRES focuses on implementing activities that are directly relevant to the implementation of national climate change adaptation and mitigation priorities, NDCs and other elements of the Paris Agreement relevant to the region. Implementing partners: SPREP (lead agency), SPC, PIFS and USP
USAID Climate Ready *2017 – ongoing*	Climate Ready is working with governments and regional stakeholders in ten Pacific Island countries to prioritize areas of support that align with their climate adaptation plans and goals. Implementing organisation: AECOM

Title	Description
Pacific iCLIM 2 *2017 – ongoing*	Pacific iCLIM 2 is funded by Australia's Department of Foreign Affairs and Trade with AUD 2 million covering implementation in five countries. Project activities include field implementation, planning and governance, policy formulation and integration,
Institutional Strengthening in Pacific Island Countries to Adapt to Climate Change (ISACC) *2015 – ongoing*	The ISACC project is working with six Pacific Island countries to strengthen the national institutional capacity to effectively plan for, coordinate and respond to the adverse impacts of climate change. The project builds on multi-sector, whole-of-island approaches that have been implemented successfully by regional climate change projects and that continue to be sustained by a range of partners through pooling of resources and expertise. Implementing partners: SPC, SPREP and PIFS
Programme for Implementing the Global Framework for Climate Services (GFCS) at Regional and National Scales *2015 – ongoing*	The GFCS aims to enhance resilience in social, economic and environmental systems to climate variability and climate change through the development of effective and sustainable regional and national climate services under the GFCS in selected regions and countries.
EU Adapting to Climate Change and Sustainable Energy (ACSE) *2014 – 2019*	The ACSE programme works in 15 Pacific ACP countries to strengthen the countries' capacity to adapt to the adverse effects of climate change and to enhance their energy security at national, provincial and local/community level. Implementing partners: GIZ, SPC and USP
ACP-EU Building Safety & Resilience in the Pacific (BSRP) *2013 – 2019*	The project's purpose is to strengthen the capacity of Pacific Island countries to address existing and emerging challenges with regard to the risks posed by natural hazards and related disasters, while maximising synergies between disaster risk reduction strategies and climate change adaptation. Implementing organisation: SPC
Synergistic Impacts of Global Warming and Ocean Acidification on Coral Reefs *2013 – ongoing*	This project is developing equations that describe changes in coral growth rates in response to increased temperature and ocean acidification. These data are necessary for developing and refining models evaluating the future impact of climate change on Pacific coral reef communities. Results will help define appropriate management responses and prioritize interventions at the most vulnerable sites.
Climate and Oceans Support Program in the Pacific (COSPPac) *2012 – ongoing*	COSPPac works with Pacific Island stakeholders to analyse and interpret climate, oceans and tidal data to produce valuable services for island communities. This information helps island communities to prepare for and mitigate the impacts of severe climate, tidal and oceanographic events. Implementing partners: Australian Bureau of Meteorology and SPREP
The Pacific Islands – Global Ocean Observing System (PI-GOOS)	PI-GOOS aims to assist sustainable development in 16 Pacific Island countries and territories by facilitating the establishment and implementation of coastal and open ocean observing programmes, and in helping to improve uptake and use of the data, information and products being generated. Implementation of PI-GOOS is primarily through capacity

Title	Description
2009 – ongoing	building at the local and regional level. Implementing organisation: SPREP

National and Sector Climate Change Priorities

The stocktaking of climate change information and stakeholder consultations[3] have revealed a number of key success factors in facilitating adequate adaptation to climate change in Tonga. These factors will need to be included in the design and process for adaptation and sustainable development: (i) availability of land; (ii) policies, plans and legal/regulatory frameworks; (iii) stakeholder understanding of the impacts of climate change and the needs for adaptation; (iv) public awareness and dissemination of relevant information; (v) availability of and access to financial, human and technological resources.

The Ministry of Lands, Survey, Natural Resources, Environment and Climate Change has a strong desire to improve land information by incorporating risk or potential risk factors relating to land development in Tonga but is constrained by inadequate financial, human and technological resources. Despite this shortcoming the Ministry currently provides GIS information, including high risk areas, e.g. maps showing low-lying areas prone to effects of sea-level rise. All land in Tonga is the property of the Crown and therefore the way in which land is developed or used is determined by the provisions of the Land Act under the Minister for Lands.

A key element of the 'whole of Tonga' strategic approach is the strong focus on development of sector, cluster, community and outer islands' resilient plans that fully integrate climate resilience and practical on-the-ground adaptation, reduction of greenhouse gases and disaster risk reduction. There is a real need for integration and mainstreaming of climate change issues/concerns into sectoral planning, management and budgetary processes but this is hampered by the limited availability of financial and human resources. The majority of funding available for climate change programmes, projects and activities through the Ministry of Finance and Planning (Aid Management Division) is provided from bilateral and multilateral donors (external sources).

At the national and sector levels, climate change programmes, projects and activities must be clearly linked to the Tonga Climate Change Policy and the JNAP 2 which share the same objectives:

Objective 1: Mainstreaming for a Resilient Tonga
Objective 2: Implement a coordinated approach to research, monitoring and management of data and information
Objective 3: Resilience-building response capacity
Objective 4: Resilience building actions
Objective 5: Finance
Objective 6: Regional and international cooperation

Tonga has also developed its climate change portal (http://ecc.gov.to/) and information continues to be populated.

Gaps and constraints

Significant gaps still exist in the areas of data collection, monitoring, expertise, and skills that are required to conduct vulnerability and adaptation assessments on a continuous basis. Therefore, there is an urgent need for training and capacity building on:

1) Development and use of appropriate methodologies and tools for conducting vulnerability and adaptation assessments at the community, national and sectoral levels and the use of appropriate tools/methods for climate change adaptation integration into sectoral and national planning processes;

2) Strengthening of existing and, where appropriate, development of data management systems to ensure that a vulnerability and adaptation assessment is carried out on a continuous basis;

3) Evaluation (including cost-benefit analysis), prioritisation and costing of adaptation options, strategies and measures;

4) Incorporation of vulnerability and adaptation assessment work into development planning, including risk-based assessment methods;

5) Research, systematic observation and data collection, analysis and dissemination;

6) Enhancement of the capacity of communities to identify capacity building and training needs as they relate to vulnerability and adaptation assessments, building on the community vulnerability and adaptation assessments currently being carried out in several communities;

7) Methods across sectors for collection, collation, analysis, archival and retrieval of data and information; a user-friendly database management system is needed to support this work;

8) Management and/or integration of climate change issues into design and development of infrastructure (climate proofing).

Key Challenges to Adaptation

The government of Tonga highlighted its priority needs for adaptation to climate change in the Joint National Action Plan for Climate Change Adaptation and Disaster Risk Management 1 (2010) and 2 (2018 – 2028) and other documents[2]. Since 2006[3] Tonga has made good progress in addressing climate change issues with the support of its regional and international development partners. However, some key challenges still remain and will compromise future long term efforts unless effectively addressed.

Of particular note are capacity constraints. There is a general lack of highly skilled personnel, in permanent positions, to take on the task of managing climate change risks over the near and long term. Short term personnel and project personnel only go some way to addressing this gap, Climate change education at primary, secondary and tertiary levels, short term training, on-the-job training and job attachments are critical to address the capacity gap. So too is the need to develop innovative ways to retain skilled personnel in country through appropriate levels of remuneration and other means.

Raising public awareness about climate change risks is another important activity that needs to be implemented through a planned process thereby moving away from ad hoc approaches.

[2] Tonga prepared and submitted its Second National Communication under the UNFCCC in 2012. The Second National Communication also outlines the priority needs for climate change adaptation, mitigation and technology transfer.

[3] National Climate Change Policy was endorsed by Cabinet in 2006. The climate change policy was developed as part of the preparation of the initial national communication under the UNFCCC.

Given that many of climate change activities implemented in Tonga are project based, with 3-5 year timeframes, the results and outcomes may not always be sustainable. Tonga is already making efforts or/considering ways to prepare a financing strategy for disaster risk management and climate change activities and to tailor new projects to address specific gaps in their national agenda, and this approach needs to be maintained and expanded.

Integration of climate change into national, sector and community programmes, projects and activities is needed on a continual basis over the long term and there is a need to create an enabling environment for engaging with both local communities and national level government.

Another key challenge for Tonga is to ensure that gender-sensitivity and disability inclusiveness are addressed in its climate change programmes, projects and activities. Climate change affects communities and individuals in different ways and it is important to ensure that climate change activities are fully inclusive of vulnerable groups.

References

Australian Bureau of Meteorology and CSIRO. 2011. *Current and future climate of Tonga*. http://www.cawcr.gov.au/projects/PCCSP/publications.html. Published as a brochure.

Australian Bureau of Meteorology and CSIRO. 2011. *Climate Change in the Pacific: Scientific Assessment and New Research*. Vol. 1: Regional Overview. Vol. 2: Country Reports.

Government of Tonga. 2010. *Joint National Action Plan on Climate Change Adaptation and Disaster Risk Management*. Nuku'alofa, Tonga: Ministry of Environment and Climate Change.

Government of Tonga. 2018. *Joint National Action Plan 2 on Climate Change and Disaster Risk Management (2018 – 2028)*. Available at: https://www.pacificclimatechange.net/sites/default/files/documents/JNAP%20II%20-%202018-2028.pdf

http://data.worldbank.org/country/tonga. Retrieved from the internet 23 April 2013

http://www.pacificwater.org/pages.cfm/country-information/tonga.html. Retrieved from the internet 23 April 2013

http://www.spc.int/prism/tonga/. Retrieved from the internet 23 April 2013

Indexmundi. 2015. *Tonga – Improved Sanitation Facilities (% of population with access)*. Available at: https://www.indexmundi.com/facts/tonga/indicator/SH.STA.ACSN

Indexmundi. 2015. *Tonga – Improved Water Source (% of population with access)*. Available at: https://www.indexmundi.com/facts/tonga/indicator/SH.H2O.SAFE.ZS

Matangi Tonga Online. 2019. *ADB commits $5 million grant for better financial management in Tonga*. Available at: https://matangitonga.to/2019/06/06/adb-commits-5-million-grant-tonga

Ministry of Finance and National Planning. 2012. *Overcoming the macroeconomic challenges to economic growth, Economic Dialogue*. Nuku'alofa, Tonga: Ministry of Finance and Planning.

New Zealand Ministry of Foreign Affairs and Trade. 2012. Tonga Information Paper, Wellington, New Zealand

Pacific Adaptation Strategies Assistance Programme. 2010. *Report of the National Stocktaking and Stakeholder Consultations on Climate Change*. Canberra, Australia: Department of Climate Change and Energy Efficiency

Pacific Institute of Public Policy. 2012. http://www.pacificpolicy.org/Tuvalu/. Retrieved from the Internet 24 May 2012

Pacific Islands Forum Secretariat. 2010. http://www.forumsec.org/pages.cfm/about-us/member-countries/#tonga/. Retrieved from the Internet 10 June 2012

Tonga Final IWRM Diagnostic Report. 2007. http://www.pacificwater.org/userfiles/file/GEF%20IWRM%20Final%20Docs/SOPAC%20Tonga%20Final%20IWRM%20Diagnostic%20report.pdf. Retrieved from the Internet 23 April 2013

Tonga Statistics Department. 2017. *Tonga 2016 Census of Population and Housing*. Available at: https://tonga.prism.spc.int/PublicDocuments/Census%20of%20Population%20and%20Housing_/04_2016/02_2016_Census_Volume1_Report.pdf

UNDP. 2018. *Briefing note for countries on the 2018 Statistical Update: Tonga*. Available at: http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/TON.pdf

UNFCCC. 2019. *Tonga Climate Change Trust Fund*. Available at: https://unfccc.int/climate-action/momentum-for-change/activity-database/tonga-climate-change-trust-fund

WorldData.info. 2019. *Development of Inflation Rates in Tonga*. Available at: https://www.worlddata.info/oceania/tonga/inflation-rates.php

World Population Review. 2019. *Tonga Population 2019*. Available at: http://worldpopulationreview.com/countries/tonga-population/