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CLIMATE CHANGE PROFILE



COOK ISLANDS

VERSION 1

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

Disclaimer: This climate change profile was first prepared in 2013 to inform the Global Climate Change Alliance: Pacific Small Island States (GCCA: PSIS) project and updated in 2019 to inform the Global Climate Change Alliance Plus – Scaling Up Pacific Adaptation (GCCA+ SUPA) project. Reasonable care has been taken to ensure that the information presented herein is accurate however, it must be noted that the information may be subject to changes without prior notice. The Pacific Community does not accept any form of liability, neither legally nor financially, for loss (direct or indirect) caused by the understanding and/or use of this profile or its content.



Cook Islands Îles Cook

Penrhyn
(Tongareva)

Rakahanga
Manihiki

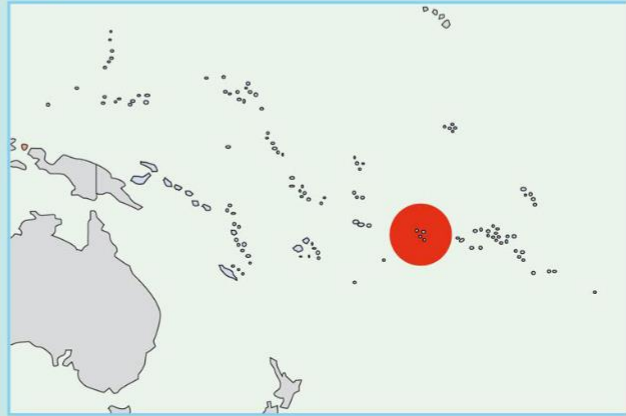
Pukapuka

NORTHERN GROUP

Nassau

ÎLES COOK DU NORD

Suvarrow



Palmerston

ÎLES SOUTHERN COOK DU SUD

Aitutaki
Manuae
Takutea
Atiu
Mitiaro
Mauke

164° W/O

RAROTONGA

Mangaia



0 Kilometres 3

0 Kilometres 300

22° S

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Abbreviations

ADB	Asian Development Bank
CIG	Cook Islands Government
CCCI	Climate Change Cook Islands
DRM	Disaster Risk Management
EEZ	Exclusive Economic Zone
ERP	Economic Reform Programme
EC	European Commission
EU	European Union
GCCA:PSIS	Global Climate Change Alliance: Pacific Small Island States project
GCCA+ SUPA	Global Climate Change Alliance Plus – Scaling Up Pacific Adaptation
KPAF	Kyoto Protocol Adaptation Fund
MFEM	Ministry of Finance and Economic Management
NES	National Environment Service
NESAF	National Environment Strategic Action Framework
NSDP	National Sustainable Development Plan
OPM	Office of the Prime Minister
PACC	Pacific Adaptation to Climate Change Project
PACCSAP	Pacific Australia Climate Change Science and Adaptation Planning
PEFA	Public expenditure and financial accountability assessment
PFM	Public financial management
SPC	The Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

OBJECTIVE OF THE CLIMATE CHANGE PROFILE

This climate change profile for Cook Islands 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. 8 ⁰ S - 24 ⁰ S, Long. 157 ⁰ - 166 ⁰ W
Total land area	237 km ²
Coastline	120 km
Exclusive economic zone (EEZ)	1,800,000 km ²
Population (2016 census)	17,434
Average annual growth rate (2016)	-0.5%
Population density	63 per km ²
Human development index	0.837 ¹

Introduction

Cook Islands are made up of 15 islands, with the high volcanic island of Rarotonga the centre of government and commerce. Geographically and, to a certain extent culturally, the nation is divided into two groups: the southern group, comprising the islands of Aitutaki, Atiu, Mangaia, Mauke, Mitiaro, Rarotonga, Manuae (an uninhabited atoll) and Takutea (an uninhabited sand cay); and the northern group, comprising the islands of Manihiki, Palmerston, Penrhyn, Pukapuka, Suvarrow (atolls) and Nassau, which are relatively isolated and less developed. The majority of the population live on Rarotonga.

Government

Cook Islands is a self-governing, parliamentary, representative democracy within a constitutional monarchy in free association with New Zealand. Under the terms of the free association, Cook Islanders hold New Zealand citizenship (there is no Cook Islands citizenship) and enjoy the right of free access to New Zealand. New Zealand retains some responsibility for external affairs in consultation with Cook Islands, although in recent times Cook Islands has adopted an increasingly independent foreign policy and has diplomatic relations in its own name with 21 countries and international organisations.

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 the quality of life. The HDI score indicates that Cook Islands is in the high human development category.

The constitution of Cook Islands took effect on 4 August 1965, when it became a self-governing state in free association with New Zealand. Cook Islands has a twenty-four-seat, unicameral parliament directly elected by universal suffrage from single-seat constituencies for a fixed four-year term. There is also a House of Ariki (*Are Ariki*), which is a ceremonial 'upper house' that provides advice to the parliament on land use and customary issues (it does not have a constitutional mandate to make decisions or effect legislation). The members of the House of Ariki are appointed by the Queen's Representative and represent the chiefs and nobility (*ariki*) of the different islands. The main ministries of government are listed below (Table 1). The ministries are shared by a six-member Cabinet including the Prime Minister.

Table 1: Ministries and Agencies of Government

<p>1. <u>Prime Minister</u></p> <ul style="list-style-type: none"> • Office of the Prime Minister • Office of the Public Service Commission • Attorney General • Energy and Renewable Energy • Outer Islands • Marine Resources • Tourism • Climate Change Cook Islands • Transport • Foreign Affairs & Immigration 	<p>2. <u>Deputy Prime Minister</u></p> <ul style="list-style-type: none"> • Infrastructure & Planning • House of Ariki and Koutu Nui • Cultural Development • Police 	<p>3. <u>Minister</u></p> <ul style="list-style-type: none"> • Ministry of Finance and Economic Management • Seabed Minerals and Natural Resources • Commerce Commission • Financial Intelligence Unit • Telecommunications • Financial Services Development Authority • Investment Corporation • National Superannuation • Pearl Authority • Public Expenditure Review Committee and Audit
<p>4. <u>Minister</u></p> <ul style="list-style-type: none"> • Internal Affairs • Youth & Sport • Ombudsman • Punanga Nui 	<p>5. Minister</p> <ul style="list-style-type: none"> • Health • Justice • Parliamentary Services 	<p>6. Minister</p> <ul style="list-style-type: none"> • Agriculture • Business, Trade & Investment Board • National Environment Services

National and sector policies and strategies

The national social and economic priorities of the Government of Cook Islands are laid out in *Te Kaveinga Nui National Sustainable Development Plan (NSDP) 2016-2020*. The current NSDP was designed through widespread consultation and draws from the lessons learned from the two previous NSDPs (2007-2010 and 2011-2015). The current plan has 16 goals that cover: governance, law and order; macro-economic stability; education; health services; infrastructure; agriculture; outer island development; maritime resources and tourism. The implementation of social and economic priorities in the National Sustainable Development Plan (NSDP) will contribute to the realisation of Cook Islands' national vision: 'To enjoy the highest quality of life consistent with the aspirations of our people, and in harmony with our culture and environment'. *Te Kaveinga Nui* is a 15-year visionary development framework that provides the long-term targets and strategies.

The national vision has five national strategic development outcomes: (i) sustainable economic growth in harmony with our social values, culture and environment; (ii) well-educated, healthy, productive people and resilient communities; (iii) enhanced cultural and environmental values; (iv) responsible and mature foreign relations with New Zealand and other regional and international communities in the interest of the people of Cook Islands; and (v) a secure society built on law and order and good governance. The NSDP process provides the outline of short to medium-term strategic targets and the strategies that need to be implemented towards achieving the 2020 development outcomes.

The Cook Islands Joint National Action Plan (JNAP II) for Disaster Risk Management and Climate Change Adaptation 2016-2020 will add to the strategic suite of sectoral policies and plans that guide the country's own internal development resourcing mechanisms. The JNAP II

brings disaster risk management and climate change adaptation to the forefront of national planning. It was developed by the Office of the Prime Minister and Emergency Management Cook Islands in collaboration with UNDP, Adaptation Fund, Green Climate Fund, European Union, SPC and SPREP.

Economy

Economic Information	
Gross domestic product per person (2016)	NZD 16,706
Gross domestic product current (2016)	NZD 413.7 million
Number of people employed (2016 census)	7,016

As with other small island developing states, Cook Islands' economic development is hindered by the country's isolation from foreign markets, the limited size of domestic markets, its lack of natural resources, periodic devastation by climate-related natural disasters, and inadequate infrastructure. However, in the late 1990s, the country went through a sale of public assets, a strengthening of economic management, encouragement of tourism, and debt restructuring, which have contributed to investment and growth and to Cook Islands being among the best-performing Pacific economies. It still faces increasing pressure over the sustainability of government debt levels, and its narrow economic base (underpinned by tourism and marine resources) makes it vulnerable to external shocks, including the global economic crisis.

The Service industry, estimated to account for around 89% of GDP (2017), is vital to the Cook Islands economy. Visitor arrivals in 2017 hit an all-time high with 161,362 visitors. New Zealanders made up the largest proportion of visitors (61%) and Australians made up 13% (Cook Islands News, 2018). The Cook Islands government launched new tourism branding and marketing, targeting Australia and the northern hemisphere markets, and the Tourism Board continues to explore the expansion of market access. Continuing growth of visitors from Australia and New Zealand offset a decline in visitors from Europe and North America.

Key development challenges for Cook Islands include its narrow economic base, limited natural resources, fragile environment, shortage of skilled labour and relatively remote location.

Financial management

In the 1990s a series of sweeping economic reforms (known as the Economic Reform Programme or ERP) resulted in the Ministry of Finance and Economic Management Act and the Public Expenditure Review Committee and Audit Act. These two acts laid the framework for fiscal discipline, increased accountability, and performance assessments of senior public servants. They led to tax reforms, the sale of state assets and strengthened economic and debt management. The reforms, together with major cutbacks of government employees, were credited with reversing the poor state of the economy in the late 1980s and early 1990s. Since 2010 budgets have been delivered in the context of a tightening fiscal and challenging economic environment.

Public financial management system

The public financial management system (PFM) in Cook Islands operates mainly at the central level. The Ministry of Finance and Economic Management (MFEM) is the central agency responsible for the PFM, handling the payment system for personnel and capital expenditure. The management of non-personnel recurrent expenditure is decentralised to the ministries and line agencies. A public expenditure and financial accountability (PEFA) assessment: *Cook Islands Public Financial Management Performance Report and Performance Indicators* completed in 2011, provides an assessment of the PFM system in the Cook Islands.

The PFM system is centred on a set of relatively advanced budget and financial management rules and structures around a clear legislative framework. Compliance with these rules and processes is high, while financial management is constrained by limited capacity. As a result of the 2011 PEFA assessment, the government identified key actions to take in ameliorating the issues identified therein and prepared the *Cook Islands Government Public Financial Management Roadmap* to improve the PFM systems by June 2015. The 2014 PEFA assessment highlighted that since 2011, PFM performance in Cook Islands Government has improved in terms of budget credibility mainly due to improved budget execution, monitoring and reporting (IMF, 2015).

Donor support

New Zealand remains the major donor to Cook Islands, no longer offering general budget support to cover recurrent costs but focusing on project assistance for infrastructure improvements in the outer islands, with additional sector support to education and training, marine resources and governance. Australia is the second largest donor, providing aid through a delegated arrangement with New Zealand. Australian support to Cook Islands is aligned with the development priorities identified in the Joint Commitment for Development between New Zealand and Cook Islands.

The Asian Development Bank (ADB) assistance to the Cook Islands focuses on increasing electricity generation from renewable energy sources, improving internet connectivity, enhancing information and communication technology, and strengthening resilience to natural disasters (ADB, 2019).

European Commission (EC) assistance to the Cook Islands focuses on the water and sanitation and energy sector, in particular delivering support for sanitation policy and renewable energy. The Cook Islands is engaging in their second budget support contract with the EU under the 11th EDF. The EC's total allocation to the Cook Islands under 10th EDF amounts to €3.3 million, and 11th EDF (2014-2020) funding totals €1.4 million. An additional amount of €4.6 million has been committed from the EU "Sustainable Energy for All" initiative to support the Southern Renewable Energy Project, a blended financing project with ADB, EU, Japan and GEF to bring renewable energy to the Southern group of islands (Government of Cook Islands, 2019). The Cook Islands has also participated in multiple regional programmes funded by the EU that provide support in areas including fisheries, tourism, disaster management, regional trade integration and public financial management among others.

Trust funds

The government developed a policy in 2011 to govern the establishment of the Cook Islands Disaster Emergency Trust Fund (DETF). The Fund was initiated with a NZD 200,000 transfer from the Government's Reserve Trust Fund in the 2011-2012 financial year. On the declaration of a disaster or a state of emergency, the trustees of the DETF may provide financial assistance from the Fund to meet the costs of emergency response (SPC, 2015). The DETF is not intended for longer-term recovery (rehabilitation and reconstruction).

RESPONSE TO CLIMATE CHANGE

Current and future climate

Current climate

Cook Islands lie within the extensive and persistent trade wind zone of the South Pacific. It has a tropical, mild maritime climate with a pronounced hot wet season during the months of November to April, when two-thirds of the annual rain falls, and a cool dry season from May to October. The hot, wet season coincides with the cyclone season for the South Pacific region. The climate is dominated by easterly trade winds and the country has an annual rainfall of 2000 mm. The average temperature ranges from 21°C to 28°C throughout the year. The

climate is often strongly influenced by large inter-annual variation and the El Niño-Southern Oscillation phenomenon.

The tropical cyclone season usually starts in November and ends in April. During this period cyclones tend to form to the far west of the northern Cook Islands and migrate towards the south, reaching latitude 15°S. During El Niño years, the southern Cook Islands experience a reduction of rainfall, sometimes by up to 60% of the annual rainfall, while in the northern Cook Islands rainfall increases in excess of 2,300 mm annually (i.e. over 200% change). The situation reverses during the La Niña phase.

Expected future climate

Surface air temperature, rainfall, sea level and ocean acidification will continue to rise over the next 25–40 years. Table 2 shows climate change projections for the northern and southern Cook Islands for 2030 and 2055.

Table 2: Climate change projections for Cook Islands for 2030 and 2055 under the high emissions scenario (A2). (N refers to the northern group and S to the southern group; where there is only one set of figures, they refer to both groups.)

Climate Variable	Expected Change	Projected Change by 2030 (A2)	Projected Change 2055 (A2)	Confidence Level
Annual surface temperature	Average air temperature will increase	+0.5 to +0.9°C N +0.4 to +1.0°C S	+1.0 to +1.8°C N +0.9 to +1.7°C S	Moderate
Maximum temperature (1 in 20 year event)	More very hot days	NA	+1.0 to +2.0°C N +0.9 to +2.1°C S	Low
Minimum temperature (1 in 20 year event)	Fewer cool nights	NA	-0.5 to + 3.3°C N -0.3 to + 2.9°C S	Low
Annual total rainfall (%)	Annual rainfall will increase	-10 to +16% N -4 to +14% S	-20 to +32% N -6 to +16% S	Low
Wet season rainfall (%)	Wet season rainfall will increase	-6 to +12%	-14 to +24% N -9 to +19% S	Low
Dry season rainfall (%)	Dry season rainfall will increase	-14 to +24% N -5 to +19% S	-30 to +46% N -10 to +20% S	Low
Sea-surface temperature (°C)	Sea surface temperature will increase	+0.3 to +1.1°C N +0.4 to +1.0°C S	+0.7 to +1.9°C N +0.8 to +1.6°C S	Moderate
Annual maximum acidification (aragonite saturation)	Ocean acidification will continue to increase	+3.5 to +3.7Ωar N +3.4 to +3.6 Ωar S	+3.1 to +3.5Ωar N +3.0 tp +3.2Ωar S	Moderate

Mean sea level (cm)	Sea level will continue to rise	+6 to +25 cm	+9 to +48 cm	Moderate
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Institutional arrangements for climate change

As a recommendation of the Public Service Climate Change Functional Review carried out in 2011, a Climate Change Cook Islands office (CCCI) was established by the Government within the Office of the Prime Minister (OPM). The CCCI is tasked with coordinating and implementing climate change issues in an integrated manner, and overseeing the evolution of the climate change division within the OPM as a separate entity. The CCCI also provides a coordinated strategic service to the rest of government on all matters relating to climate change adaptation and mitigation responses in Cook Islands.

A platform for climate change and disaster risk management was established to provide for sharing information relating to climate change and DRM activities in the Cook Islands and also to provide technical, scientific and policy oversight to their implementation. The platform comprising representatives from relevant government, non-government and civil society organisations meets once every quarter.

Ongoing and recently completed climate change adaptation activities

Title	Description
SPC-Global Climate Change Alliance Plus – Scaling Up Pacific Adaptation (GCCA+ SUPA) <i>2019 – ongoing</i>	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) <i>2018 – ongoing</i>	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
EU Adapting to Climate Change and Sustainable Energy (ACSE) <i>2014 – 2019</i>	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) <i>2013 – 2019</i>	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

	<p>reduction strategies and climate change adaptation.</p> <p>Implementing organisation: SPC</p>
<p>Programme for Implementing the Global Framework for Climate Services (GFCS) at Regional and National Scales</p> <p><i>2015 – ongoing</i></p>	<p>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.</p>
<p>Climate and Oceans Support Program in the Pacific (COSPPac)</p> <p><i>2012 – ongoing</i></p>	<p>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.</p> <p>Implementing partners: Australian Bureau of Meteorology and SPREP</p>
<p>Synergistic Impacts of Global Warming and Ocean Acidification on Coral Reefs</p> <p><i>2013 – ongoing</i></p>	<p>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.</p>
<p>The Pacific Islands – Global Ocean Observing System (PI-GOOS)</p> <p><i>2009 – ongoing</i></p>	<p>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 building at the local and regional level.</p> <p>Implementing organisation: SPREP</p>

National climate change priorities

Climate change is a national priority under the *Te Kaveinga Nui* – The National Sustainable Development Plan (NSDP) 2016-2020. The NSDP is the overarching national guide for development in the Cook Islands and the Climate Change Policy serves as an implementing tool in achieving the national goal 13: “To strengthen resilience to combat the impacts of climate change and natural disasters.”

The Climate Change Policy (2018-2028) was developed through extensive consultations with a wide range of government agencies, non-governmental organisations and individuals. The consultations provided information on possible areas for future climate change activities and the policy facilitates the Cook Islands Climate Change Country Programme. The policy

will also facilitate the implementation of Cook Islands Government's obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement. The Cook Islands is now on its second Joint National Action Plan (JNAP II) for Climate Change Adaptation and Disaster Risk Management (2016-2020) which was developed based on lessons learned in the first JNAP. JNAP II is intended to assist in building nationwide resilience to, and reducing the impacts of climate change and disaster risk. JNAP II is a guide for implementing agencies and stakeholders.

Resilience is also highlighted in the *Te Kaveinga Strategy (2019-2024)* specifically Strategic Outcome 2 (Strategic Focus Area 2) – National Resilience by strengthening community resilience through climate change adaptation programmes.

In the context of the first and second national communications to the UNFCCC, a number of adaptation needs and priorities have been identified and are outlined below.

Coastal zones and infrastructure

- a) Enforce guidelines and building codes for construction and operation of residential, tourism and industrial structures in the coastal areas that incorporate climate change projections for sea-level rise, storm surge and tropical cyclones.
- b) Develop and use planning around location of new buildings, regulate all new investments in infrastructure, housing construction and agriculture outside hazard zones to minimise vulnerability. Reduce repair costs, decrease disruption to economic activities. Involve landowners in such planning exercises for long-term success.
- c) Carry out geographical information systems (GIS) mapping and identification of areas that are vulnerable to flooding and storm surge along the lines of the 'ridge to reef' programme on Mangaia.
- d) Develop a strategy for disaster response using GIS mapping of vulnerable areas and information on occupancy of buildings and needs of residents.
- e) Prepare and develop a project proposal for funding the design and construction of appropriate coastal protection systems for Avatiu and Avarua townships to protect them from flooding and storm surge damages.
- f) Test preparedness of energy supply companies and other disaster response agencies to respond to a disaster event through regular drills based on worst case scenario.
- g) Develop an appropriate communication strategy to raise awareness regarding poor land management as a cause of soil degradation and erosion.

Agriculture

- a) Collaborate with SPC research programmes (e.g. Centre for Pacific Crops and Trees) developing climate-friendly crops and salt-tolerant crops.
- b) Promote and encourage home gardening (household agriculture) for domestic use.
- c) Encourage private sector investment in fruit crop processing and marketing.
- d) Improve water harvesting to support agriculture during drought.
- e) Carry out research into productivity and growth of subsistence crops.

Marine resources and fisheries

- a) Conduct assessment/study of effects of climate change on migratory fish stocks throughout the Pacific region to inform policy decisions about EEZ management.
- b) Develop monitoring programmes for a variety of fish stocks to inform implementation and management plans.
- c) Implement management plans and guidelines for the aquaculture sector for managing/controlling pollution of the lagoon environment.
- d) Increase cool storage facilities for fish on all islands.
- e) Promote eco-tourism in the marine sector through dive and snorkel programmes for giant clams, fish and coral.

Biodiversity

- a) Develop a natural heritage trust inventory to allow modelling of climate change effects on populations over time.
- b) Develop surveys and plans for the conservation of endangered and rare native animals and plants.
- c) Manage invasive species – carry out surveys on all islands, develop eradication programmes, (island level and national level).
- d) Develop community-based protected area plans and strategies.

Water resources

- a) Introduce and enforce building requirements for water tanks and rainwater collection systems for all new buildings.
- b) Develop innovative programmes for household water tanks and water tank maintenance.
- c) Develop and use policy instruments (subsidies, incentives, competitive tendering for watershed improvement, awareness schemes) for watershed management.
- d) Carry out regular water quality testing and publication of results.
- e) Implement filtration technology.
- f) Replant trees around catchment areas.
- g) Continue ground water resources assessments and monitoring of salt water intrusion.

Human health and wellbeing

- a) Conduct education programmes on household water treatment options (filtration, boiling water) for times when water quality is low (as determined by regular testing).
- b) Provide training for food storage and processing techniques to improve food security, livelihood of family households isolated from the availability of food products.
- c) Continue promoting locally grown produce – production and consumption.
- d) Monitoring of vectors to be done quarterly, especially if vectors become resistant.
- e) Continue testing the quality of the drinking water, using WHO standards quarterly.
- f) Check notifiable conditions on a weekly basis and take action to manage any outbreaks.
- g) Conduct school inspections, especially after heavy rain and flooding, to monitor the school septic tanks. There is bound to be an overflow of sewage. An increase in rain due to future climate change may also increase flooding.
- h) Carry out a school health survey of all students at all levels every three years, looking at all health-related aspects of the children, and ascertain if the change in climate might have an influence on children's health.

Cook Islands is presently preparing its Third National Communication to the UNFCCC.

The SPC GCCA+ SUPA project in the Cook Islands aims to build resilience of the coastal environment and reef ecosystems by the expansion of surveys and monitoring from Rarotonga to Aitutaki Island. This will include upgrading of the Aitutaki marine hatchery to include a laboratory so its capacity can be upscaled to undertake research, data analysis, and technology training and teaching besides surveys and monitoring. This project is consistent with the climate change adaptation needs and priorities for the Cook Islands as identified in the *Te Kaveinga Nui* – The National Sustainable Development Plan (NSDP) 2016-2020, Climate Change Policy (2018-2028), JNAP II for Climate Change Adaptation and Disaster Risk Management (2016-2020) and the *Te Kaveinga Strategy (2019-2024)*.

Key challenges

The government of the Cook Islands highlighted its priority needs for adaptation to climate change in the NSDP (2011-2015) and the subsequent NSDP (2016-2020) and other documents. Many of the climate change issues are being addressed 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 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. Continual public awareness building is another important activity.

Given that many of climate change activities implemented in the Cook Islands are project based, activities may not always be sustainable. Cook Islands is already making significant efforts to integrate 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.

Additionally integration of climate change into national, sector and community programmes, projects and activities is needed on a continual basis over the long term. Another key challenge for the Cook Islands is to ensure that gender equality and social inclusion are addressed in its climate change programmes, projects and activities. Climate change affects communities and individuals in different ways.

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