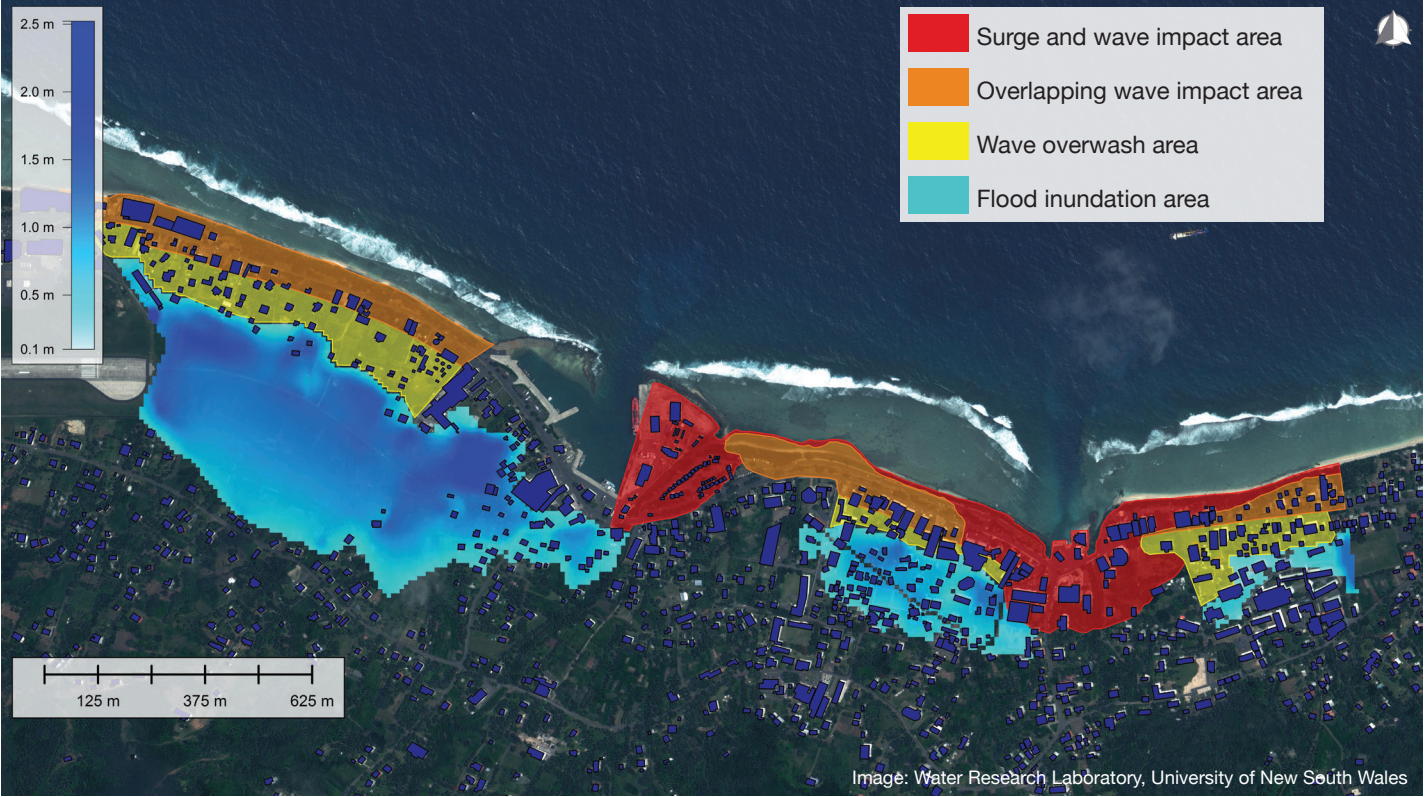


Climate science



Risk mapping: Researchers from the Australian Water Research Laboratory have collected geographical data around the coastlines of Cook Islands’ capital township Avarua. The data shows areas that are vulnerable to flooding during extreme cyclonic events.

Scientists project, based on research done under the Pacific Climate Change Science Program, that the future climate of the Cook Islands means:

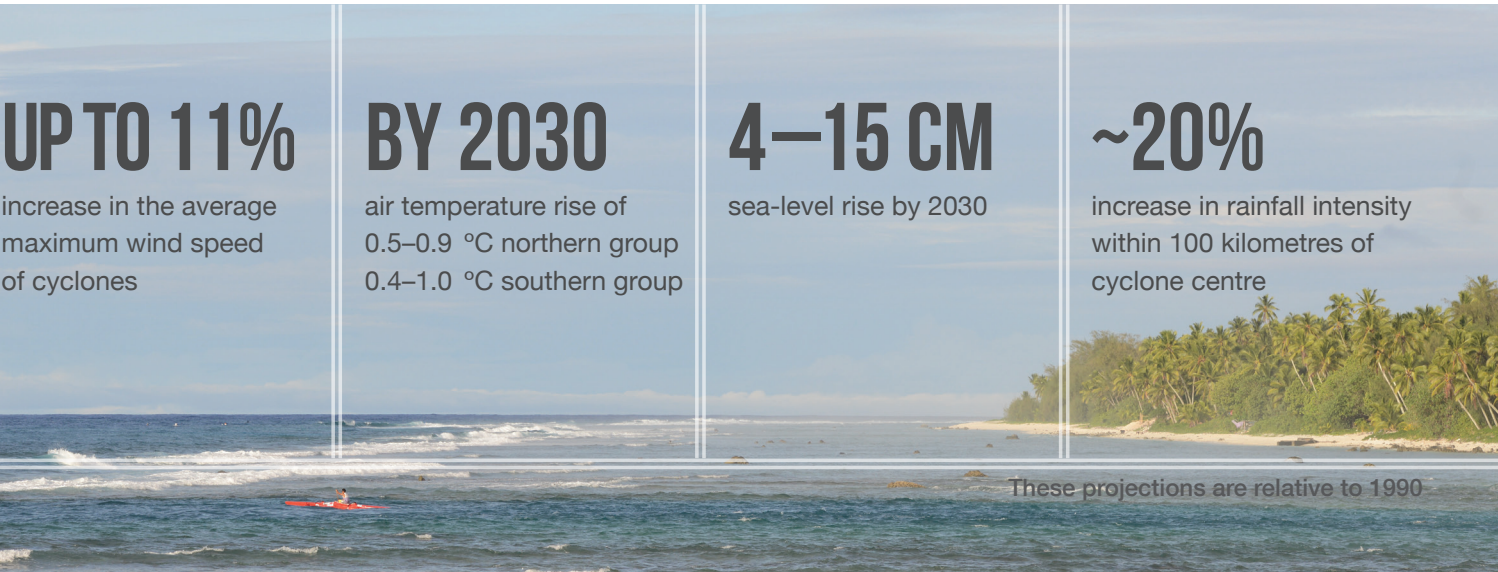
- » higher air and sea temperatures
- » more extreme-rainfall days
- » more very hot days
- » less frequent, but more intense tropical cyclones
- » continued rise in sea levels
- » continued ocean acidification.

These impacts will affect the infrastructure, economy, community and environment of the Cook Islands.

Climate change for the Cook Islands will have cross-cutting effects on marine, coastal, fresh water and agricultural resources, as well as on biodiversity and the economy.

The effects of climate change may include:

- » greater risk of disaster from extreme weather events
- » increasing coastal erosion and loss of marine habitats
- » declining fresh water and natural food resources
- » increasing incidence of crop pests and diseases
- » increasing incidence of human diseases and poverty
- » increasing demand for energy.



Fact file

The Cook Islands consists of 15 small islands scattered over an exclusive economic zone of 1.8 million square kilometres of the South Pacific, 3000km north-east of New Zealand. The islands are low-lying, remote and susceptible to natural disasters. Tourism, fruit processing, fishing, clothing, and handicrafts are the Cook Islands’ main industries.



Cook Islands

Population: Approximately 18 000; about 70 per cent live on Rarotonga.

Area: 15 small islands scattered over 1.8 million square kilometres of the South Pacific. The 15 islands have a total landmass of 240 km².

Geography: The northern group of islands are low-lying atolls. The southern group comprises of volcanic islands with low-lying coastal areas and shallow lagoons.

Education: Literacy and education levels are very high.

Economy: The average annual income of a Cook Islands resident is about NZ\$15 000. Income levels in Rarotonga are more than double than in the outer islands.

Industry: Tourism, fisheries and agriculture are the three largest contributors to the country’s GDP. About 70 per cent of all households engage in some form of agricultural activity.

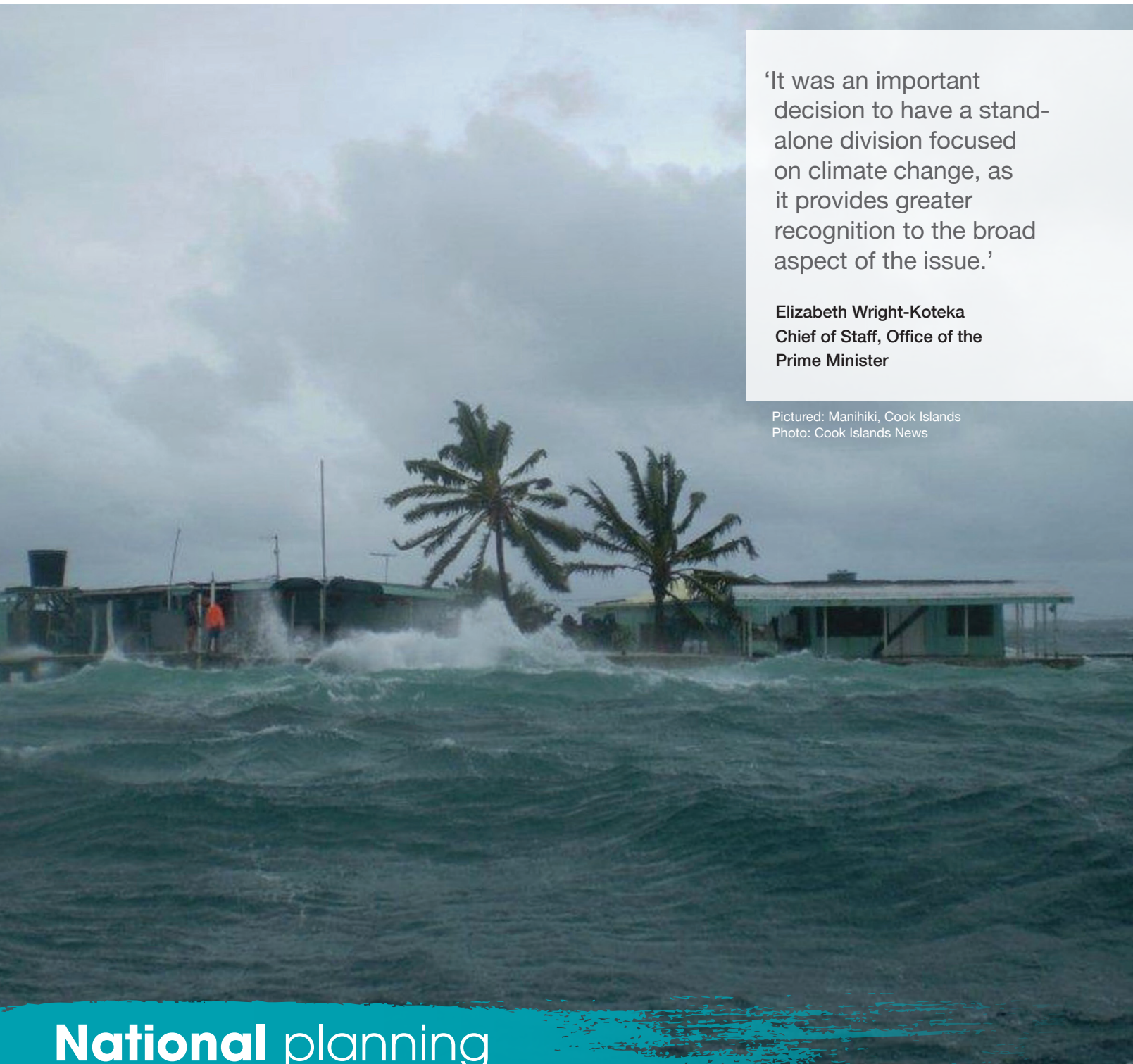
Agriculture: Copra, citrus, pineapples, pawpaws, bananas, taro, pigs and poultry.

Climate: Sub-tropical to tropical. There are two dominant seasons—a wet season from November to April and a dry season from May to October.

More information

The Australian Government’s **Pacific Adaptation Strategy Assistance Program (PASAP)** assisted 15 Pacific island countries to assess their vulnerability to climate change and incorporate adaptive measures into planning and development.

For further information on the Cook Islands institutional strengthening project, or other PASAP projects, go to www.tiny.cc/t5axxw or contact InternationalAdaptation@climatechange.gov.au



‘It was an important decision to have a stand-alone division focused on climate change, as it provides greater recognition to the broad aspect of the issue.’

Elizabeth Wright-Koteka
Chief of Staff, Office of the Prime Minister

Pictured: Manihiki, Cook Islands
Photo: Cook Islands News

National planning

This document is intended for decision-makers in the Cook Islands with an interest in policy and planning, infrastructure and climate change governance.

The Australian Government’s **Pacific Adaptation Strategy Assistance Program (PASAP)** helped to strengthen the institutional capacity of the Cook Islands to plan for the impacts of climate change.

Preparing a nation for the impacts of climate change

Implementing national plans and policies in the Cook Islands

Disaster-prone

A nation prone to natural hazards

The Cook Islands has a history of managing the risks of natural disasters, many of which stem from its already variable and extreme climate.

The geography, remoteness and developing-nation status of the Cook Islands makes it highly vulnerable to impacts of climate change. Climate change threatens its sustainable development and aspirations—economically, socially, environmentally.

The Cook Islands are generally divided into northern and southern groups. The large distance between the island clusters and their position relative to the equator affects the climate in each group.

Northern group

The six northern islands are particularly affected by drought, cyclones and storm surges, due to their low relief and critical dependence on rainfall for day-to-day water supply.

Southern group

The nine islands in the south are affected by natural disasters in a life-threatening way. Homes and community infrastructure such as schools are concentrated along coastlines that are vulnerable to floods, sea surges and rapid erosion.



‘The fundamental principle of the JNAP is that everybody and every agency has an active role to play in reducing vulnerability and building resilience. The plan promotes cooperation, coordination and collaboration.’

Ana Tiraa, Director of Climate Change Cook Islands



‘It was an important decision to have a stand-alone division focused on climate change as it provides greater recognition to the broad aspect of the issue. It’s no longer just an environmental issue—rather, a political, economical and social issue too.’

Elizabeth Wright-Koteka, Chief of Staff, Office of the Prime Minister

Acknowledging the need for a national plan

The Cook Islands Government recognises that climate change will increase the risks of extreme weather events and natural disasters. The government is implementing a coordinated and strategic approach to manage these risks.

With the funding support from Australia’s Pacific Adaptation Strategy Assistance Program (PASAP), the Cook Islands Government has reviewed its climate-change and disaster-risk management activities.

It has also established a dedicated climate change division within government to implement the Cook Islands Joint National Action Plan (JNAP) and develop a national climate change policy.

The *Joint National Disaster Risk Management and Climate Change Adaptation Plan* (JNAP) is a five-year plan (2011–2015) which spells out how the Cook Islands will reduce its vulnerability and build resilience to the risks of natural disaster and climate change in a coordinated manner.

Decision-making



Community outreach: Teresa ‘Mii’ Matamaki, senior officer for the National Environment Service, says it is important to let everyone have a say, not just island leaders, in community-based climate change activities.

Coordinating climate change activities

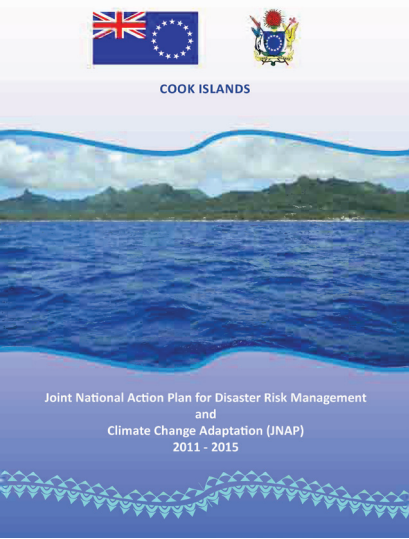
Climate Change Cook Islands (CCCI) is a division within the Cook Islands’ Office of the Prime Minister. It was set up in 2011 to ensure an integrated approach towards addressing climate change impacts within the public service and throughout the country.

‘Our job is to coordinate what was said in the JNAP among government and non-government agencies, making sure they are taking responsibility, sharing resources and reducing the likelihood of duplication’, says Ms Ana Tiraa, Director of CCCI.

‘Incorporating it within the Office of the Prime Minister was also a wise decision as it has given us more authority and closer contact with the government agencies and decision-makers we need to be talking to and coordinating with.’

Ms Tiraa highlights the importance of using the existing national systems that are in place to reduce the time and costs associated with setting up new committees and systems.

‘As we go along I think the policy will be extremely useful in the sense of how we engage in the international arena; for example, with the UN Framework Convention on Climate Change and how we engage with other regional and national partners.’



‘I think this also helps these networks incorporate climate change into their established systems as well.’

The CCCI is now developing a climate change policy that will provide government vision, support and commitment for measures to be implemented under the JNAP as well as greater mandate for the CCCI.

‘It is also important to collect and incorporate their views in what is supposed to be a national policy’, says Ms Matamaki.



Better assessment: Rimmel Poila from the National Environment Service says the maps will allow for more detailed environmental impact assessments on properties along the Avarua coastline which are vulnerable to flooding.

Incorporating community knowledge into policy

From 2012 to 2013, the Cook Islands National Environment Services assessed communities on six of the Cook Islands’ smallest and most isolated outer islands.

The PASAP-funded project was conducted in order to develop site-, island- and community-specific baselines for vulnerability, risks and adaptive capacity of remote communities. These baselines have been used to inform the Cook Islands Disaster Risk Management and Climate Change Policy.

Ms Teresa ‘Mii’ Matamaki, senior National Environment Services officer, conducted the community assessment. She says, ‘It is important to visit these isolated communities, as climate change is having a direct impact on their water and food resources, as well as their infrastructure. They don’t want to leave their islands so we have a duty to help them adapt.’

‘It is also important to collect and incorporate their views in what is supposed to be a national policy’, says Ms Matamaki.

Priority actions

Assessing vulnerability

Nationally critical infrastructure such as the international airport, shipping port and local businesses were also reviewed as part of the Cook Islands’ national approach to planning for climate change.

Avarua, on the north coast of the island Rarotonga, is the capital of Cook Islands and centre for tourism, government and trade.

Over 110 000 tourists pass through its international airport each year and about 90 per cent of international and domestic sea trade passes through its port Avatiu.

Matt Blacka, a coastal engineer from the University of New South Wales (Australia), assessed the risks posed to the Avarua township and its coastal infrastructure by changes to sea level and wave behaviour during extreme events.

Mr Blacka says, ‘The research will identify areas of land that are at

risk, and allow local government organisations to manage the associated risk in the future and be able to design and allow for that risk in their planning.’

Hazard risk maps produced from the project show that even though much of the Avarua foreshore is three to five metres above sea level, it is prone to storm surge and wave damage. The maps also show that lower lying areas in the back of Avarua are prone to flooding during cyclonic events, as water backs up from the lagoon through the drainage systems.

Next steps

The Cook Islands’ policy development framework has already completed many of its actions, but will continue to work towards:

- » incorporating disaster risk management and climate change adaptation in national development plans

» raising awareness within all government departments on the importance of integrating climate change adaptation activities into planning

» integrating natural hazard and climate change–related risk considerations into sector policies, plans and legislation

» integrating natural hazard and climate change–related risk considerations into community and island development planning processes

» incorporating National Adaptation Program actions into ministry and agency work plans and annual budget submissions

» monitoring and evaluating the progress of the JNAP.

The framework will be a model for other Pacific islands to develop early adaptation planning, policy, activities and strategies.



‘Incorporating climate change adaptation strategies into infrastructure programs will strengthen capacity to avoid and manage disasters.’

Matt Blacka, Senior Coastal Engineer, University New South Wales, Water Research Laboratory



‘Having scientific data is critical as it clearly shows us which areas are prone to flooding and which are prone to storm surge. We know where not to build, or if we do [build], we need to build in a way that it will handle those conditions.’

Timoti Tarngiruni, Urban and Rural Planner, Ministry for Infrastructure and Planning