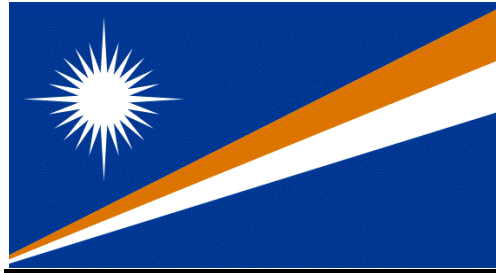


## CLIMATE CHANGE PROFILE



### REPUBLIC OF MARSHALL ISLANDS

**SECRETARIAT OF THE PACIFIC COMMUNITY  
GLOBAL CLIMATE CHANGE ALLIANCE: PACIFIC SMALL ISLAND STATES PROJECT  
FUNDED BY THE EUROPEAN UNION**

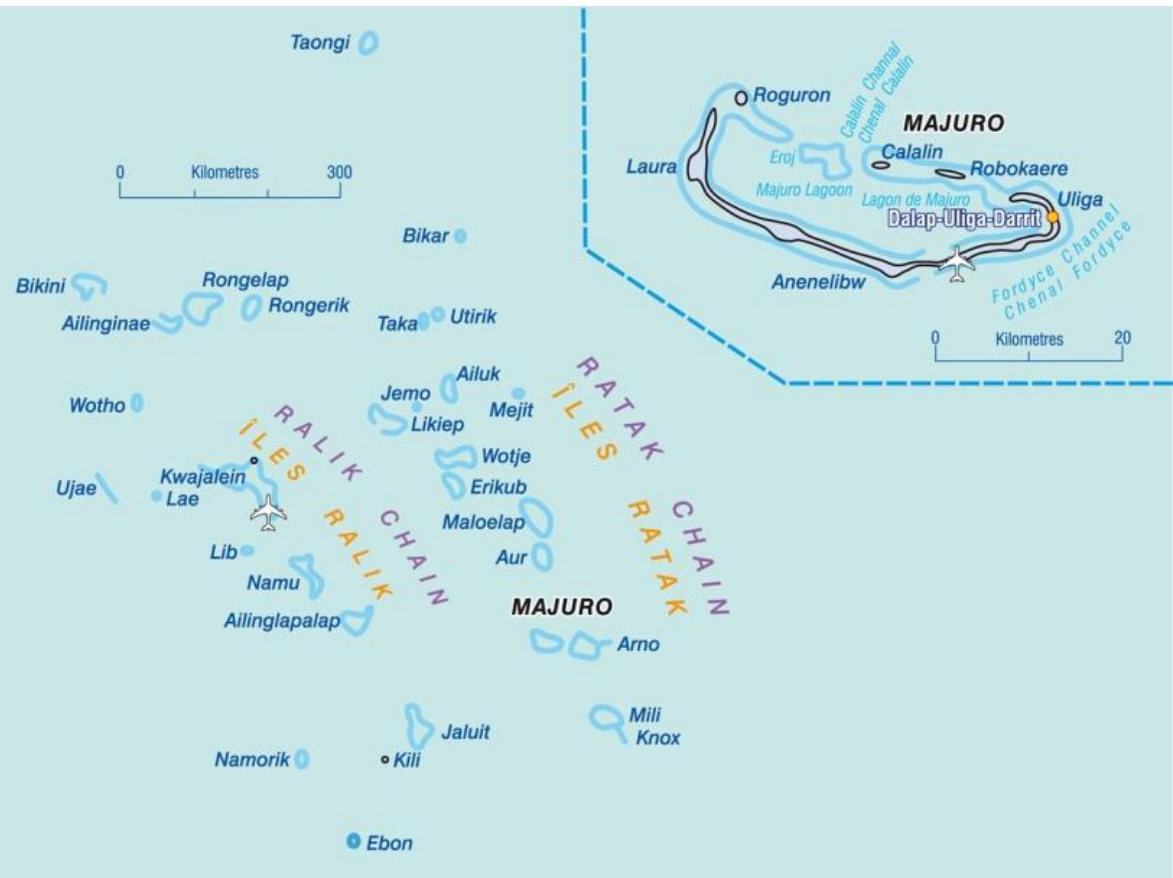
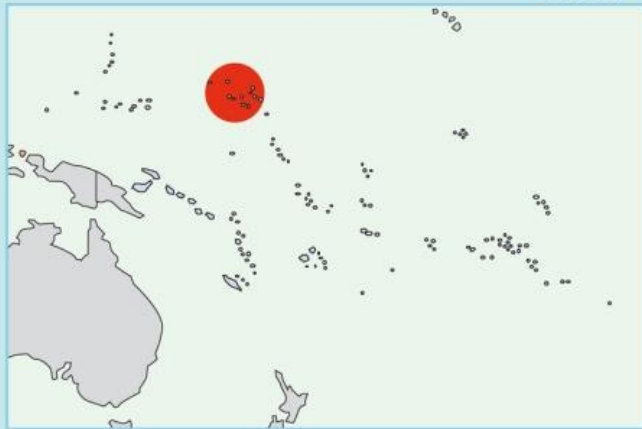




# Marshall Islands Îles Marshall



Ujelang



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## Acronyms

ADB	Asian Development Bank
AusAID	Australia Agency for International Development
CCCPIR	Coping with Climate Change in the Pacific Island Region project implemented in partnership with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ)
DRM	Disaster Risk Management
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DCCEE	Department of Climate Change and Energy Efficiency (Australia)
EEZ	Exclusive Economic Zone
ENSO	El Niño Southern Oscillation
EPA	Environment Protection Authority
GCCA: PSIS	Global Climate Change Alliance: Pacific Small Island States Project funded by the European Union (EU), executed by the Secretariat of the Pacific Community,
GDP	Gross Domestic Product
GEF	Global Environment Facility
IMF	International Monetary Fund
JNAP	Joint National Action Plan for Climate Change and Disaster Risk Management
MC	Micronesia Challenge
MCT	Micronesia Conservation Trust
NAP	National Action Plan
NCCC	National Climate Change Committee
NCCPF	National Climate Change Policy Framework
OEPPC	Office of Environmental Planning & Policy Coordination
PACC	Pacific Adaptation to Climate Change Project
PACCSAP	Pacific Australia Climate Change Science and Adaptation Planning Project
PEFA	Public Expenditure and Financial Accountability Framework Assessment
PFM	Public Financial Management system
RMI	Republic of the Marshall Islands
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Environment Programme
TNC	The Nature Conservancy
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

## OBJECTIVE OF THE CLIMATE CHANGE PROFILE

This second version of the climate change profile for the Republic of the Marshall Islands has been prepared as part of the Secretariat of the Pacific Community's (SPC) Global Climate Change Alliance: Pacific Small Islands States (GCCA: PSIS) project funded by the European Union. The Coping with Climate Change in the Pacific Island Region (CCCPIR) programme funded by Germany (GIZ) also contributed to the preparation. The goal of the GCCA: PSIS is to support the governments of nine Pacific smaller island states, namely Cook Islands, Federated States of Micronesia (FSM), Kiribati, Republic of Marshall Islands (RMI), Nauru, Niue, Palau, Tonga and Tuvalu, in their efforts to tackle the adverse effects of climate change. The purpose of the project is to promote long term strategies and approaches to adaptation planning and pave the way for more effective and coordinated aid delivery on climate change, including the delivery of streamlined adaptation finance, at the national and regional level.

This climate change profile is specific in nature and seeks to inform the GCCA: PSIS project as well as the larger SPC climate change support team. It commences with a section on the country's background, including geography, climate change projections, 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. 4 <sup>0</sup> -14 <sup>0</sup> N, Long. 160 <sup>0</sup> -173 <sup>0</sup> E
Total land area	181 km <sup>2</sup>
Length of coastline	370.4 km <sup>i</sup>
Exclusive Economic Zone area	2.131 million km <sup>2</sup>
Population (2011 estimate)	55,000
Population forecast (2015)	57,127
Annual Population Growth rate	0.7%
Population density	301 per km <sup>2</sup>
Access to improved water supply (2010 est. )	94% of population <sup>ia</sup>
Access to improved sanitation facilities (2010 est.)	75% <sup>ib</sup>
Human Development Index Score <sup>1</sup>	N/A unranked

### Introduction

The Republic of the Marshall Islands (RMI) is a raised atoll island nation located in the North Pacific Ocean at equal distance between Hawaii and Australia. The country comprises 34 major islands and atolls, including the atolls Bikini, Enewetak, Majuro, Rongelap, and Utirik. Approximately 1,225 low-lying islets make up the twenty-nine atolls of the Marshall Islands. The islands are scattered in an

<sup>1</sup> 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.

archipelago consisting of two rough parallel groups, the eastern 'Ratak' (sunrise) chain and the western 'Ralik' (sunset) chain. However, for climate analysis a difference is made between the North and South Marshall Islands.

Twenty-two of the atolls and four islands are inhabited, and almost 70% of the population live on Kwagelin (Ebeye) and Majuro, the RMI capital. Bikini and Enewetak are former US nuclear test sites; Kwajalein, the famous World War II battleground, surrounds the world's largest lagoon and is used as a US missile test range. The Marshall Islands have also claimed the Wake Islands (Enekeo) to the north, currently an American possession and not occupied by Marshallese in historic times.

The topography of the islets is low and flat, with maximum natural elevation rarely exceeding 3m' The highest recorded point on the atoll, Likiep, is 10m above sea level. Soils are nutrient-poor and subject to salt spray, and hence the vegetation type is very limited.

## Government

Table 1 Listing of Departments and Agencies

Air Marshall Islands	Ministry of Finance
Banking Commission	Ministry of Foreign Affairs
Civil Aviation	Ministry of Resources and Development
College of the Marshall Islands (CMI)	Ministry of Health
Copra Processing Plant	Ministry of Internal Affairs
Courts	Ministry of Justice
Fishing and Nautical Training Center	Ministry of Public Works
Majuro Water and Sewer Company	Ministry of Transportation and Communications
Marshall Islands Development Bank	National Telecommunications Authority
Marshall Islands Marine Resources Authority	Nuclear Claims Tribunal
Marshall Islands Social Security Administration	Public Service Commission
Marshall Islands Visitors Authority	RMI Ports Authority
Marshalls Energy Company	Trust Company of the Marshall Islands
Ministry of Education	
The President's Office - Office of the President - Office of the Cabinet - Economics Policy, Planning and Statistics Office - Office of Environmental Policy, Planning and Coordination (OEPPC) - Office of the Attorney General	- Environmental Protection Agency (EPA) - Customary Law and Language Registration - National Training Council Office of the Chief Secretary - Office of the Nitijela - Weather Station

Spanish, German, Japanese and Americans have been part of the colonial history. In July 1977, the Marshall Islands voted in favour of separation from the U.S Trust Territory of the Pacific Islands and in May 1979, it declared self-government under its own constitution. In March 1982, the Marshall Islands declared itself a Republic and in September 1991, the RMI became a member of the United Nations.

The legislative branch of government consists of the Nitijela (Parliament). The Nitijela has 33 members from 24 districts elected for 4-year terms. Members are called Senators. The Executive comprises the President and the Cabinet. The President is elected by majority vote from the membership of the Nitijela and then selects the Cabinet (currently 10 ministers plus the President) from members of the Nitijela. There are four Court systems comprising of a Supreme Court and a High Court plus district and community courts and the traditional rights court. The 13-member Council of Chiefs (Iroij) serves a largely consultative function on matters of custom and traditional practice.

### **National and Sector Policies and Strategies**

In 2001 the Government charted the Vision 2018 as the first segment of the Government's Strategic Development Plan Framework for the next 15 years. It incorporates the broad vision of the Nation as to where the people would like to be in the year 2018 in terms of sustainable development. Vision 2018 was developed through an extensive consultative process starting with the Second National Economic and Social Summit, and followed by extended deliberations by various Working Committees established by the Cabinet. The second and third segments of the Strategic Development Plan consist of Master Plans focusing on major policy areas, and the Action Plans of Ministries and Statutory Agencies. These documents show programs and projects together with the appropriate costing.

After the adoption of Vision 2018, Master Plans were developed in the following major policy sectors: Human Resources Development; Outer Islands Development; Culture and Traditions; Environment, Resources and Development; Information Technology; Private Sector Development; Infrastructure; and Tourism. It is also RMI's intention for all Atoll Local Governments to develop Action Plans tailored towards the achievement of the National Vision.

In 2010 the government decided to develop a Joint Disaster Risk Management (DRM) and Climate Change National Action Plan (JNAP) and a Climate Change Policy 2011, as a means to implement the CC policy and give renewed interest in actions that were initially identified under the DRM NAP. A draft JNAP was developed with the support of SOPAC and SPREP in April 2011 and final versions have been approved by Cabinet.

### **Economy**

#### **Economic information**

Gross Domestic Product (GDP) 2009:	US\$152.8 million
GDP per capita (2009):	US\$2,504
GDP real growth (2008):	1.5%
Unemployment (2008):	30.9%

Government is the largest employer, employing 46% of the salaried work force. The Marshall Islands is still mainly a copra-based subsistence economy. Copra and coconut oil constitute 90% of exports. Yellowfin tuna are exported fresh for the Japanese sushi market. The tourism industry now employs 10% of the labour force. There is a chronic trade imbalance in favour of the United States and Japan, and newer partners include Australia and Republic of China/Taiwan..

Majuro and Ebeye have service-oriented economies sustained by government expenditure and the US Army installation at Kwajalein Atoll. The airfield in Ebeye also serves as a second national hub for international flights. RMI has a significant international shipping registry under which large numbers of ships owned by foreign entities are registered in its national shipping registry and fly its flag.

Economic potential lies in marine resources and seabed mineral deposits. The Marshall Islands has a 2.1 million km<sup>2</sup> Exclusive Economic Zone rich in skipjack and yellowfin tuna. The Asian Development Bank has undertaken an assessment of RMI's fish resources.

Transport issues are often cited as a constraint to economic growth. Currently, the main air service is provided by United Airlines and includes Kwajalein and Majuro as stopovers on the 'Circle Micronesia' island-hopper route between Honolulu and Guam. Flights travel west to east and east to west on alternate days.

Based on a 2012 International Monetary Fund (IMF) report after a 5½ percent expansion of the economy in FY2010, helped by an expanding fishery sector, growth fell sharply to 0.8 percent in FY2011, as a result of high commodity prices, labor shortages, and delay in the airport renovation project due to disagreement on the environment protection standard to be applied. Inflation remained elevated at 5½ percent in FY2011, reflecting high commodity prices. The economy is heavily dependent on foreign grants which fund a large public sector, but are subject to scheduled declines.. The weak financial position of some public enterprises could hinder economic activities and erode public finances. Fluctuations in fuel and food prices would also pose a substantial risk given the RMI's high dependence on commodity imports.

## **Financial Management**

RMI's Public Expenditure and Financial Accountability (PEFA) assessment and initial public finance management (PFM) consultations have recently been completed, as well as a peer review of their national sustainable development planning and budgeting. These processes provide a detailed analysis of RMI's PFM, and now publically available (can inform climate change finance options including direct budget support currently the subject of a consultancy being prepared with the support of SPC - GCCA:PSIS. Based on the IMF and RMI Peer Review reports (2012), achieving long-term budgetary self-reliance and sustained growth remains a challenge. Under the baseline projection, sluggish growth and fiscal adjustment imply a large projected revenue shortfall in 2023 when Compact grants are set to expire. Closing this revenue gap would require a fiscal adjustment of around 4% of GDP over the medium term. Comprehensive public sector and structural reforms would be required to achieve this adjustment. These depend on ongoing efforts to unlock private sector growth. These include: (i) implementation of tax reform; (ii) targeted expenditure cuts; (iii) accelerated reforms of the state-owned enterprises (SOEs); and (iv) removal of obstacles to private sector development. At the same time external finance coordination, high level endorsed medium term budget planning, and a single simplified system for reporting across sectors are recommended by the Peer Review, along with other steps such as oversight of the development banks suggested by the IMF.

## **Aid Management and Budget Support**

GDP is derived mainly from Compact transfer payments from the United States. In 2010, direct US aid accounted for 61.3% of the Marshall Islands' fiscal budget. Since the end of World War II, the RMI has retained close social, economic and political ties with the US. Since 1986, this relationship has been formalized in the form of the two subsequent Compacts of Free Association, outlining US assistance and diplomatic ties to the RMI.



The 2003 amended Compact of Free Association, followed two years of intensive negotiations jointly by the RMI and the FSM to renew the fiscal and strategic relationship. As a result of the amended Compact that entered into force in 2004, the US government has agreed to provide RMI and the FSM jointly some US\$3.5 billion in economic and service aid over the next 20 years. The US retains the right to maintain a military missile testing base on Kwajelein, while RMI citizens have free access to the US and certain education, health and welfare services and federal funding until 2023.

The Compact is designed to wean RMI away from US support over the course of the 20 years. The aid formula is for decreasing US assistance and increasing emphasis on private sector and foreign investment. The large amount of financial assistance provided under the Compacts has enabled the national government to provide numerous public and other services resulting in public sector and public enterprise expenditures dominating and driving economic growth in direct competition with the private sector. Consequentially, there has been little real growth in the private sector.

The RMI government is also highly dependent on other external sources of assistance, particularly from the Asian Development Bank (ADB), Republic of China (ROC) and to a lesser extent, Japan. Most of the assistance from these sources takes the form of technical assistance loans and grants (ADB), funding of infrastructure development projects (Japan), and supplementation of the national budget (ROC). The dependence of the RMI government on external funding assistance from the USA and other countries poses significant issues regarding the sustainability of national development efforts. The challenge RMI faces is how to coordinate external donor priorities and agendas along with its own national priorities and initiatives.

## **RESPONSE TO CLIMATE CHANGE**

### **Current and Future Climate**

#### Current Climate

The moist, tropical climate of RMI is heavily influenced by the north-east trade winds which prevail from December through April. Periods of weaker winds and doldrums occur with more rainfall from May through November. The climate of the RMI varies significantly from north to south. The atolls at 10°N latitude and above receive less than 50 inches (1250mm) of rain annually and are very dry in the December – April dry season. Atolls between 7° N and the equator receive more than 100 inches (2500mm) of rain annually. The average annual temperature is 27°C, with monthly means only varying from 26.9°C to 27.1°C and maximum daily variation of about 7°C<sup>i</sup>. (Muliagatele Joe Reti, 2008)

Droughts generally occur in the first four to six months of the year following an El Niño. Following a severe El Niño event, rainfall can be reduced as much as 80%. Annual rainfall at Majuro and Kwagalein has decreased since the 1950s.

#### Expected Future Climate

Based on the Pacific Climate Change Science Programme, 2011, rainfall is generally projected to increase over this century with more extreme rainfall days and less droughts.

RMI is in a region where projections tend to show a decrease in typhoon frequency and also the proportion of intense storms, due to increased wind shear reducing storm formation and intensification, although this projection is for late in the century and has only moderate confidence.

Table 2: Climate change projections for RMI for 2030 and 2055 under the high emissions scenario (A2). Differences in projections across RMI are noted for Northern (N) and Southern (S) model results.

<b>Climate Variable</b>	<b>Expected Change</b>	<b>Projected Change by 2030 (A2)</b>	<b>Projected Change 2055 (A2)</b>	<b>Confidence Level</b>
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Annual surface temperature	Average air temperature will increase	+0.4°C to +1.3°C	+1.0°C to +1.8°C	High- Moderate
Maximum temperature (1 in 20 year event)	More very hot days	NA	+0.9°C to +1.9°C	Low
Minimum temperature (1 in 20 year event)	Fewer cool nights	NA	-1°C to +3.9°C	Low
Annual total rainfall (%)	Annual rainfall will increase	-10 to +26% N -6 to +12% S	-17 to +31% N -7 to +19% S	Moderate
Wet season rainfall	Wet season rainfall will increase	-7 to +13% N & S	-12 to +24% N -8 to +20% S	Moderate
Dry season rainfall	Dry season rainfall will increase	-19 to +29% N -11 to +17% S	-29 to +55% N -12 to +26% S	Moderate
Sea surface temperature	Sea surface temperature will increase	+0.3°C to 1.1°C N +0.2°C to 0.6°C S	+0.8°C to 2.0°C N +0.4°C to 1.0°C S	Moderate
Annual maximum acidification (aragonite saturation)	Ocean acidification will continue to increase	+3.3 to 3.5Ωar N +3.3 to 3.5Ωar S	+2.9 to 3.1Ωar N +3.3 to 3.5Ωar S	Moderate
Mean sea level	Sea level will continue to rise	+3 to +16cm	+11 to +30cm	Moderate

### Institutional Arrangements for Climate Change

As a response to the priorities under the Vision 2018, the RMI has bolstered its national capacity to address climate change impacts through the creation of the Office of Environmental Planning & Policy Coordination (OEPPC) which acts as the Chair and Secretariat to the National Climate Committee. .

The National Climate Committee has representatives from the following agencies:

- Environmental Protection Authority (RMIEPA): This was the former national focal point for climate change activities, and had been the facilitator/chairperson of the Country Team. It continues work as a line agency. Human resources include water resource and environmental education specialists.
- Ministry of Foreign Affairs: This is represented in the country team in order to provide a contact to RMI's U.N. Mission that handles the UNFCCC negotiations.
- Marshall Islands Visitors Authority: a long-term champion of environmental protection and sustainable development through its role in promoting RMI as a tourism destination.
- Ministry of Resources and Development: This Ministry is involved in much of the preparation for adaptation and response to the impacts of climate change.
- Department of Agriculture and the Marshall Islands Marine Resources Authority: Representatives covering agriculture and fisheries are included in the country team.
- Marshall's Energy Company: This agency represents utilities on the Committee. Utility providers have a significant role to play in implementing certain mitigation strategies to reduce the use of fossil fuel generated power.

- **RMI Weather Station:** The RMI Weather Station is responsible for the collection of local data on weather, climate change and sea level rise. Staff of the Weather Service Office are also undergoing training through externally supported programmes so that they will be able to continue to provide interpretation and analysis of scientific monitoring.

The 2011 National Climate Change Policy Framework recommends a team with inclusion of other relevant agencies and NGO representation, and the 2011 draft Joint National Action Plan for Climate Change and Disaster Risk Management institutional arrangements section is still pending confirmation. Climate change activities are continuing in line with the NCCPF vision of “Building the resilience of the people of the Marshall Islands to climate change”. Efforts to address climate-related impacts include public awareness-raising, participation in regional climate change adaptation projects (addressing capacity building as well as developing strategies for food and water security) and renewable energy strategies. In addition, RMI is part of the Micronesia Challenge implementation plan,

### Ongoing Climate Change Adaptation Activities in RMI

Title & Timeframe	Description, country focus and agencies responsible
Micronesia Challenge (MC)  <i>2006 - ongoing</i>	Sub-regional conservation initiative which enhances community resiliency by using traditional knowledge and ecosystem strategies to conserve vulnerable coastal land resources by 2020; goals are to effectively conserve at least 30% of near shore resources and 20% of terrestrial resources.  The MC includes the Micronesians in Island Conservation Network (MIC), Pacific Islands Managed and Protected Area Community (PIMPAC), Locally Managed Marine Area Network – Micronesia Node (LMMA), and Micronesia Challenge Young Champions  Agencies responsible: Micronesia Chief Executives (Guam, Mariana Islands, FSM, Palau and RMI), The Nature Conservancy (TNC) NOAA, Micronesia Conservation Trust (MCT).
Micronesia Conservation Trust (MCT)  <i>2002 - ongoing</i>	MCT was formally established by TNC in 2002 as a charitable and irrevocable corporation organized to manage and provide funds for the accomplishment of the following mission: “to support biodiversity conservation and related sustainable development for the people of Micronesia by providing long term sustained funding.”  In 2006, MCT was selected as the financial mechanism for the MC and has since fully regionalized its Board and organizational structure and services.
Pacific Adaptation to Climate Change Project (PACC)  <i>2009 - 2013</i>	The PACC Project is designed to promote climate change adaptation as a key pre-requisite to sustainable development in Pacific Island countries. Its objective therefore is to enhance the capacity of the participating countries to adapt to climate change and climate variability, in key development sectors. Mainstreaming, demonstration and communications are implemented at the community and country levels.  The PACC Project is working to increase water storage in the country and to improve existing water systems to conserve the limited water that they have. This will better equip people to withstand future droughts caused by climate change.  Agencies responsible: UNDP (implementing agency), GEF, AUSAID (funding agencies), SPREP (implementing partner), RMI OEPPC
Implementing Sustainable Water Resources and Wastewater	Pacific IWRM is developing “Ridge to Reef – Community to Catchment” integrated water resource management (IWRM) activities in the 14 participating Pacific Island Countries.

Title & Timeframe	Description, country focus and agencies responsible
Management in Pacific Island Countries (Pacific IWRM)	Agencies responsible: Global Environment Facility (GEF), SPC Applied Geosciences and Technology Division (SOPAC)
European Union B-Envelope water supply 2008-2013	<p>The project aimed at improving reliability of dry-season and drought-period water supply to urban and rural areas through rainwater harvesting and management, and protection of groundwater resources.</p> <p>Agency responsible: European Union, RMI Chief Secretary's Office</p>
Coping with Climate Change in the Pacific Island Region (CCCPIR) 2009 - 2015	<p>CCCPIR covers 12 Pacific Island Countries and six components ranging from regional and national mainstreaming of climate change, implementation of adaptation activities on the ground, and climate change related to tourism, energy and education. In RMI CCCPIR focuses on the water and sanitation sector. Overall available funding is 17m EUR with up to half a million USD available to RMI. The project is focusing on adaptation in the water sector with technical support being placed in RMI EPA...</p> <p>Agencies responsible: German Ministry for Economic Cooperation and Development (BMZ, funding), GIZ, implementing agency. SPC (regional partner). RMI OEPPC</p>
Pacific - Australia Climate Change Science and Adaptation Planning Program (PACCSAP) 2011 - 2013	<p>PACCSAP: supporting the government of RMI to develop improved climate change projections and adaptation planning activities. 2012-2013. FSM and 14 other Pacific countries are part of this A\$32 million project which builds on the foundation of the Pacific Climate Change Science Programme and the Pacific Adaptation Strategy Assistance Programme.</p> <p>Agencies responsible: AUSAID; Australian Department of Climate Change and Energy Efficiency (DCCEE); Australian Bureau of Meteorology, CSIRO, RMI National Weather Service Office</p>
Global Climate Change Alliance: Pacific Small Island States (GCCA:PSIS) 2011 - 2014	<p>The overall objective of the GCCA:PSIS is to support the governments of nine Pacific smaller island states, including RMI, in their efforts to tackle the adverse effects of climate change. Overall available funding is 11m EUR.</p> <p>In the RMI the key adaptation activity focus has been proposed in the coastal sector, along with initiatives on mainstreaming climate change adaptation and climate change financing.</p> <p>Agencies responsible: European Union (EU), SPC (Implementation), SPREP, RMI OEPPC, EPA</p>
USP-EU GCCA Project 2011 - 2014	<p>The USP-EU GCCA project addresses the challenges of climate change impacts in the 15 Pacific ACP countries, including RMI, through Capacity Building, Community Engagement, and Applied Research. The objective of this project is to develop and strengthen the Pacific ACP countries' capacity to adapt to the impacts of climate change. Overall available funding is 8m EUR.</p> <p>Agencies responsible: European Union (EU), University of the South Pacific (USP) RMI MFA</p>
Bilateral Programme Budget of the British Embassy in the Philippines <i>Ongoing</i>	<p>Mature national portfolio of fundable locally-driven adaptation and energy project proposals available to prospective investors. Projects can run for a maximum of one (1) financial year. Embassy funding normally averages £10,000 - £20,000.</p>
North Pacific ACP Renewable Energy and Energy Efficiency Project	<p>The overall objective of North-REP is to improve the quality of life on the outer islands by increasing access to basic electricity and reducing dependency on fossil fuels through energy efficiency and increased penetration of matured renewable energy technologies in the North-</p>

Title & Timeframe	Description,country focus and agencies responsible
(North-REP) 2010 - 2014	REP countries (FSM, RMI and Palau). Overall available funding is 14m USD.  Agencies responsible: European Union (EU), SPC (implementing agency)
Pacific Islands Climate Education Partnership (PCEP) 2011 Ongoing	Educates students and citizens across the United States-affiliated Pacific Islands about the urgency of climate change impacts in ways that exemplify modern science and honour indigenous cultures and environmental knowledge. so that students and citizens within the region will have the knowledge and skills to improve understandings of climate change and adapt to its impacts. .  Agencies responsible: US National Science Foundation (NSF), WestEd, Pacific Resources for Education and Learning (PREL), RMI OEPPC, Ministry of Education,
Schools of the Pacific Rainfall Climate Experiment (SPaRCE) 1995 - ongoing	The SPaRCE programme is to increase awareness of the younger generations on global environmental issues, such as climate change. Training and educational initiatives: students in the Pacific islands are being educated with hands-on experience on an important environmental subject, climate change, by involving them in the data collection of rainfall.  Agencies responsible: University of Oklahoma, RMI Ministry of Education
Pacific Regional Integrated Sciences and Assessments (Pacific RISA) 1995 -ongoing	Strives to enhance Pacific Island communities' abilities to understand, plan for, and respond to a changing climate. Emphasizing the engagement of communities, governments, businesses, and scientists by translating scientific research into information and materials that are valuable for stakeholders in key sectors such as water resources. Climate focused water sector education and outreach is part of Pacific RISA's core mission .  Agencies Responsible National Oceanic and Atmospheric Administration (NOAA) RMI Weather Office.
Climate Adaptation, Disaster Risk Reduction and Education (CADRE)  2011 -2014	Aims to build resilience of vulnerable communities to natural hazards particularly those that are climate induced. Will target approximately 10,000 school aged students at up to 50 schools in FSM & RMI with climate adaptation, disaster risk reduction and education program.  Track 1 educational component, including capacity building of students, teachers, administrators and the local community; technical assessments of climate change impact and disaster risk on schools grounds, and the surrounding community. Track 2 roll out of adaptation measures stemming from the recommendations contained within the change impact assessments and exercising of the climate adaptation and disaster risk management plans  Agencies responsible: USAID, AusAID, IOM, RMI Chief Secretary's Office, Ministry of Education
Reimaanlok Process in the Republic of the Marshall Islands 2010 - 2020	Reimaanlok, meaning "looking to the future", is a conservation area planning framework which is used throughout the Marshall Islands to guide the process of creating effective community-based conservation areas. This helps to promote sustainable resource use, protect biodiversity, address the effects of climate change and sea level rise, and ensure the future availability of natural resources for future generations.. This work builds upon the Marshall Islands' commitment through the Micronesia Challenge to effectively conserve at least 30% of near-shore marine resources and 20% of terrestrial resources by 2020. Initiatives related to: <ul style="list-style-type: none"> <li>• Adapting to changes in environment, economy, and society;</li> <li>• Delivery of effective scientific and traditional information;</li> <li>• The conservation of food and fresh water; and</li> </ul>

Title & Timeframe	Description,country focus and agencies responsible
	<ul style="list-style-type: none"> <li>Partnerships with leaders and communities related to conservation.</li> </ul> <p>For example the Rongelap Atoll local government, conservation, and sustainable development project project is taking a holistic approach to sustainable development of the island, which has a pristine marine environment and from which the inhabitants have temporarily been relocated. The activities include a marine research center, a marine sanctuary, aquaculture, and ecotourism. This includes breeding of marine species.</p> <p>Agencies Responsible: MCT members of the Coastal Management Advisory Council (CMAC), Local Governments</p>
Coastal Community Adaptation Project (C-CAP), 2013-2017	<p>This project aims to build the resiliency of vulnerable coastal communities in the Pacific region to withstand more intense and frequent weather events and ecosystem degradation in the short-term, and sea level rise in the long-term. The project has three components: (1) rehabilitating or constructing new, small-scale community infrastructure; (2) building capacity for community engagement for disaster prevention and preparedness; and (3) integrating climate resilient policies and practices into long-term land use plans and building standards</p> <p>Responsible Agencies USAID Implementing Organization: Development Alternatives, Inc. (DAI), University of the South Pacific (USP); Kramer Ausenco Papua New Guinea Limited, RMI OEPPC</p>
Asia Climate Change Adaptation Support Facility (ADAPT Asia-Pacific), 2011-2016	<p>Will provide capacity building and governance support for adaptation planning and implementation in 13 Asian countries including Timor-Leste, and 14 Pacific Islands countries in the region. This program aims to: (i) strengthen human and institutional capacity to prepare high-quality climate change adaptation investment proposals; (ii) accelerate and ensure sustained access to financial resources for climate change adaptation investment projects; and (iii) support and strengthen a regional knowledge platform to share and replicate best practices.</p> <p>Responsible Agencies USAID/RDMA program under IAA with State/OES AECOM</p>
Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) 2007- 2015	<p>Aims to provide the Pacific Island Countries (PICs) with disaster risk modeling and assessment tools to help them better understand, model, and assess their exposure to natural disasters, and to engage in a dialogue on integrated financial solutions for the reduction of PICs financial vulnerability to natural disasters and to climate change. The initiative is part of the broader agenda on disaster risk management and climate change adaptation in the Pacific region.</p> <p>Responsible Agencies: SPC, WB and ADB, Japan, Pacific Disaster Centre, with technical inputs from GNS Science, Geoscience Australia, and AIR Worldwide</p>

## National Climate Change Priorities

RMI has several policies and plans relating to climate change. In addition to the 2018 National Vision, there is the RMI Climate Change Road Map (2010) and the National Climate Change Policy Framework (NCCPF-2011), Sectoral policies and plans including the RMI Energy Policy and Action Plan, the RMI Disaster Risk Management National Action Plan 2008-2018, and the National Climate Change and Health Action Plan 2011 are being built upon, as well as implementation documents and climate change activity concepts in formulation. The RMI NCCPF 2011 presents five strategic goals that aim to provide a pathway to an integrated, whole of Marshall Islands response. Objectives and outcomes are identified for each goal:

- 1) Strengthen the Enabling Environment for Climate Change Adaptation and Mitigation, including Sustainable Financing.
- 2) Adaptation and Reducing Risks for a Climate Resilient Future.
- 3) Energy Security and Low-Carbon Future.
- 4) Disaster Preparedness, Response and Recovery.
- 5) Building Education and Awareness, Community Mobilization, whilst being mindful of Culture, Gender and Youth.

The National Climate Change Committee (NCCC) has been overseeing the development of a Climate Change and Disaster Risk Management National Action Plan for RMI (Joint NAP). This draft Joint NAP identifies priority actions needed under each strategic goal, and aligns these with actions already identified under the RMI National Action Plan for Disaster Risk Management 2008-2018. The outcome should be a comprehensive response to improve the resilience of the people of the Marshall Islands.

Efforts to address climate-related impacts include public awareness-raising, participation in regional climate change adaptation projects (addressing capacity-building as well as developing strategies for food and water security), renewable energy strategies, and among other adaptation strategies, a national implementation plan for the Micronesia Challenge (a sub-regional conservation goal which enhances community resiliency and uses traditional knowledge and ecosystem strategies to conserve vulnerable coastal/land resources by 2020).

The SPC GCCA: PSIS project in RMI has been guided by Government to focus on national to local coastal management planning, combining on-the-ground demonstration of achievable coastal protection interventions and community-level partnerships to address vulnerability and erosion, together with identification of national and local level enabling activities. The latter may include coastal aggregate policy, surveys, coastal protection planning and engineering, replication to other atolls, adaptation financing for coastal defenses, capacity building, organizational development, networking, school education, public and community outreach, and coordination of regional-international participation and technical support.

## Key Challenges to Adaptation

The following gaps and needs are based on a World Bank profile (2011). Despite the improved national and international attention to climate impacts, the RMI still faces many of the same challenges and barriers identified in the RMI 1992 National Communications to the UNFCCC report, including severe financing challenges, the need for enhanced technical capacity and mainstreaming climate change considerations into development strategies and activities. While increased attention and direct funding is urgently needed for adaptation strategies, the RMI's geography creates physical limitations not easily addressed solely by infrastructure adaptation projects. While several plans are in place there is a lack of mechanisms to monitor and evaluate the progress towards climate change resilience.

Institutional and policy gaps include:



- Limited integration of disaster risk reduction and climate change consideration into development activities.
- coordination among the country's relevant institutions, including the country's capacity for emergency preparedness and response at all levels.
- The technical and financial capacities of existing institutions especially to address the needs of the country's more remote islands, particularly in terms of maintenance of existing disaster risk management tools such as reverse osmosis units.
- Legislative policies and development activities need to include climate change. For example, existing infrastructure projects need to be properly climate-proofed to deal with projected climate risks.

Research and data gaps include:

- There is a general lack of sector-specific data, especially on tuna fisheries and water demand. Responding to climate change in the water sector is hampered by a limited understanding of how water supplies will be impacted by rising temperatures.
- Detailed assessments of climate change impacts and risks across a variety of sectors are required in order to develop sound response strategies, in particular focusing on food security, water resources, and coastal resources.
- The use of existing meteorological information is limited to specific agencies, and this information needs to be tailored to decision makers across a wider series of sectors, including water resources management.
- A very limited instrumental record makes extensive analyses of the natural variability of cyclones difficult. Overall applied research assistance is required to properly establish an island-specific and robust baseline from which to gauge projected changes and impacts.
- Research is required on the links between climate change and diseases in the context of small islands, including the collection of robust baseline data sets that offer a village perspective on current and potential impacts.
- The country's First National Communication points to the need to develop appropriate information management systems to collate and monitor available information.

Further education and awareness regarding current and projected climate variability and change and associated risks are required, e.g. integrating climate change into formal education curricula, and community awareness programs. This needs to be implemented through a planned process, moving away from ad hoc approaches.

Of particular note are capacity constraints. There are generally a limited number 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.

Given that many of climate change activities implemented in the RMI are project based, with 3-5 year time frames, the results and outcomes may not always be sustainable or replicated in other states. The RMI 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. There is a need to work with lending institutions such as the RMI Development Bank and the Pacific Islands Development Bank, as well as commercial banks, to encourage them to give more consideration to climate change when providing loans for building and other development initiatives. Incentives, such as offering lower interest rates for loans through which climate risks are addressed, are one initiative that banks might consider. Development partners should also be encouraged to ensure that climate-related risks and opportunities are given due consideration.

Another key challenge for RMI is to ensure that gender-sensitivity and disability inclusiveness is addressed in its climate change programmes, projects and activities. This has been helped to some extent by the active engagement of the Women United Together Marshall Islands (WUTMI), Island Youth Councils and other NGOs on climate change activities in RMI. Climate change affects communities and individuals in different ways and it is important to ensure that climate change activities are fully inclusive of these special groups.

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.

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