KIRIBATI JOINT IMPLEMENTATION PLAN

FOR CLIMATE CHANGE AND DISASTER RISK MANAGEMENT (KJIP)

2019-2028

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The NAP Global Network was created in 2014 to support developing countries in advancing their NAP processes, and help accelerate adaptation efforts around the world. To achieve this, the Network facilitates sustained South-South peer learning and exchange, supports national-level action on NAP development and implementation, and enhances bilateral support for adaptation and climate-sensitive sectors through donor coordination. The Network's members include participants from more than 130 countries involved in developing and implementing National Adaptation Plans, as well as 11 donor members. Financial support for the Network has been provided by Austria, Canada, Germany and the United States. The Secretariat is hosted by the International Institute for Sustainable Development (IISD). For more information, visit www.napglobalnetwork.org.

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FOREWORD

Mauri

With the authority bestowed upon me by the people of Kiribati, it is with great honour to present the Kiribati Joint Implementation Plan (KJIP), for climate change and disaster risk management. This document will serve as an implementation tool of the climate change and disaster risk management-related policies, in strengthening our resilience effort to the adverse effect of climate change and disaster risks, and to safeguard our unique cultural heritage. The people of Kiribati are the core of this implementation plan where it enhances gender inclusiveness, disability involvement, youth engagement, elderly respect and no one will be left behind.

As climate change was scientifically proven to become even worse in which natural hazards are more intense and frequent, joint implementation and strategic plan from every concerned organisation is highly required. As a result, the KJIP was collaboratively produced by a National Expert Group (KNEG) that represented by all Ministerial sectors, Non-Governmental Organisations, Civil Society Organisation and Private sectors. For their comprehensive effort, I am forever thankful and proud of the work they have done.

KJIP is aligned and supportive of the Kiribati Vision for 20 years (KV20) and the Kiribati Development Plan (KDP). For effective and efficiency in implementation, KJIP also aligns well with ministerial strategic plans and sectoral policies that are related to climate change and disaster risk management.

Furthermore, Kiribati appreciates past, ongoing and future support, whether financial or technical, from its development partners which will enable the effective implementation of this plan for the enhancement of sustainable development and more resilient communities.

I humbly urge all stakeholders to harmoniously work together in implementing the priorities set out in the KJIP to enhance the resilience of I-Kiribati and the country as a whole.

May God bless us all

Te Mauri, Te Raoi ao Te Tabomoa.

Taneti Maamau

President, Republic of Kiribati

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The development of the Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management (KJIP) was initiated and coordinated by the Office of Te Beretitenti and driven by the Kiribati National Expert Group (KNEG), with representatives from government ministries, private enterprises and non-governmental organisations (NGOs).

In 2018, the revision of KJIP was conducted with the technical support from National Adaptation Plan Global Network (NAP GN) and a comprehensive oversight by the Office of Te Beretitenti. The revision was wholly supported with funding from Environment and Climate Change Canada and the U.S. In-Country NAP Support Program.

The KNEG was supported directly by a Regional Support Team, comprising representatives from the Secretariat of the Pacific Regional Environment Programme (SPREP), the Secretariat of the Pacific Community (SPC), the SPC/Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH Coping with Climate Change in the Pacific Island Region programme on behalf of the Federal German Ministry for Economic Cooperation and Development (BMZ), the United Nations Development Program (UNDP) and the United Nations Children's Fund (UNICEF). The KNEG received additional technical assistance from Australia's Aid Program (Australia's Aid Program) as well as the European Union (EU).

Special gratitude is offered to the Kiribati Government Cabinet Ministers, Ministry secretaries, heads of departments, Parliamentary Select Committee, heads of NGOs, Church leaders and gender experts for investing their time and commitment in the development and review of the KJIP.

EXECUTIVE SUMMARY

BACKGROUND

The Republic of Kiribati is made up of three main island groups: The Gilbert, Phoenix and Line Islands and one isolated raised limestone island, Banaba (Ocean Island). The groups of islands contain 33 scattered atoll islands, dispersed over 3.5 million square kilometres in the central Pacific Ocean. The three main island groups stretch over 800 kilometres from north to south and over 3,210 kilometres from east to west.

The Kiribati 2015 census determined that the total population was 110,136 of whom 50.9 per cent were female and 49.1 per cent male. In all, 51.2 per cent of the population lives in the capital of South Tarawa (in the Gilbert Islands), which has a population density of 3,184 (2010) people per square kilometre (KNSO 2015). The median age of the I-Kiribati population is 22 years and 34.9 per cent of the population is younger than 15 years of age. The latest Kiribati Disability Report identified 3.1 per cent of the total population living with disabilities, with 0.9 per cent of those under the age of 5-17 (2015).

The climate of Kiribati is hot and humid year around. This tropical climate is closely related to the temperature of the oceans surrounding the atolls and small islands. However, its seasonal rainfall is highly variable from year to year, mostly due to the El Niño–Southern Oscillation (ENSO).

Kiribati is blessed with a vast ocean territory and great diversity of marine biodiversity but is limited in its land area and terrestrial resources. The Kiribati economy depends heavily on its rich marine resources for employment, income and subsistence living. However, the resources provided by its limited land and terrestrial biodiversity are also central to the Kiribati way of life.

The private sector can be an engine of economic growth and development for Small Island States like Kiribati. While the private sector in Kiribati is small in relation to the public sector, its contribution to GDP has increased from 47.3 per cent in 2005 to 54.5 per cent in 2015. Moreover, formal employment in the private sector has increased at a rate of over 12 per cent per year since 2010. As a result, the number of private sector contributors to the Kiribati Provident Fund (KPF) has increased from 2,130 in June 2010 to 3.982 in June 2016, corresponding to a rise of 87 per cent. The number of contributors from the public sector on the other hand only saw a small increase (of around 2 per cent), rising from 6,789 in 2010 to 6,917 in 2016 (KV20, 2018).

Kiribati is categorised by the United Nations as both a “Small Island Developing State” and a “Least Developed Country.”

CLIMATE CHANGE AND DISASTER RISK CONTEXT

As a result of its inherent characteristics as an atoll nation, a least developed country, and with its fragile economy and environment, Kiribati is extremely vulnerable to climate change and has little capacity to cope with disasters.

Climate variability, driven by the El Niño–Southern Oscillation, intermittently causes extreme weather events. There are also other non-weather-related hazards such as oil spills (man-made) or tsunamis (tectonically caused). Coupled with climate change, extreme weather events are predicted to become more frequent. Additionally, existing socioeconomic and environmental pressures are intensifying.

These factors are strongly interrelated in the Kiribati context. It is, therefore, essential to consider and address climate change adaptation and disaster risk management in a systematic and integrated manner.

Climate hazards such as saltwater inundation, droughts, plagues and epidemics as well as man-made hazards such as fires, oil spills and aircraft accidents already pose challenges to the nation's economy, food and water security, as well as the overall well-being of its people. Climate variability and climate change are already causing—and are predicted to continue to cause—increased surface air and sea temperatures, increased precipitation throughout the year, more days of extreme rainfall and heat, rising sea levels and increasing ocean acidification. In addition, although the risks are generally considered minimal, Kiribati could also be affected by a tsunami.

The social, economic and environmental ramifications of the observed and projected climatic changes and hazards are multiplied when overlaid with the high levels of vulnerability of people and their environment.

Between 2011 and 2018, Kiribati accessed about USD 54.9 million from bilateral and multilateral sources for climate change and disaster risk management activities. With funding from the Green Climate Fund, the total amount of Climate and Disaster Risk Management funding accessed by Kiribati will increase to USD 83.5 million (MFED, 2019). From this funding, the largest proportion will be aimed at water and sanitation (40 per cent), followed by energy (19 per cent), transport infrastructure (12 per cent), conservation and biodiversity (8 per cent), enabling environment (8 per cent), and agriculture and food security (5 per cent).

Unlike most other Pacific Island countries, about 82 per cent of the total funding for climate change and disaster risk management accessed by Kiribati was reflected in the national budget, and 18 per cent was off budget. Of the total amount accessed, 25 per cent was from bilateral sources and 75 per cent from multilateral. Most of the accessed funding supported activities on adaptation (53 per cent), followed by mitigation (32 per cent), disaster risk reduction (9 per cent), and disaster risk management (6 per cent) (MFED, 2019).

DEVELOPMENT OF THE KJIP

The Government of the Republic of Kiribati, following consultation with regional organisations initiated the process of developing a joint national action plan on climate change and disaster risk management in 2011, which would become the KJIP (Kiribati Joint Implementation Plan).

Between 2017 and 2019, with the support of the NAP Global Network, the KJIP was reviewed and revised to enhance alignment with strategic documents released after 2014, namely: the Kiribati Development Plan 2016-2019, the Kiribati 20-Year Vision, and the Climate Change Policy. The revision process also included the strengthening of gender considerations based on the results of a gender analysis conducted in 2017. The Kiribati National Expert Group on Climate Change and Disaster Risk Management (KNEG) reviewed the recommendations for changes twice in 2018 and in 2019

RATIONALE FOR THE KJIP

The main rationale for developing the KJIP is to support the implementation of holistic approaches on climate actions (i.e., across multiple sectors and with stronger linkages among climate adaptation planning processes at national, sectoral and island levels). The KJIP is an integrated plan that prioritises 104 climate adaptation and disaster risk reduction actions. Ultimately, the purpose of the plan is to enhance coordination and access to financial and technical support to accelerate the implementation of actions on climate adaptation and disaster risk reduction.

VISION AND GOAL

The vision of the 9-year KJIP is that:

I-Kiribati unique culture, heritage and identity are upheld and safeguarded through enhanced resilience and sustainable development.

The goal of the KJIP is:

To increase resilience through sustainable climate change adaptation and disaster risk reduction using a whole-of-country approach

GUIDING PRINCIPLES FOR THE KJIP

- Integration
- Accountability
- Inclusiveness
- Focus
- Time-bound
- Flexible to new issues
- Thorough
- Sense of belonging
- Strategic community ownership
- Integrity
- Responsibility
- Transparency
- Good governance
- Cultural values
- People-centred
- Effective and Efficient
- Sustainability

KEY STRATEGIES FOR CLIMATE CHANGE AND DISASTER RISK MANAGEMENT

The KJIP identifies the following 12 major strategies:

1. **Strengthening good governance, policies, strategies and legislation**
2. **Improving knowledge and information generation, management and sharing;**
3. **Strengthening and greening the private sector, including small and medium-sized enterprises (SMEs);**
4. **Increasing water and food security with integrated and sector-specific approaches and promoting healthy and resilient ecosystems;**
5. **Strengthening health service delivery to address climate change impacts;**
6. **Promoting sound and reliable infrastructure development and land management;**
7. **Delivering appropriate education, training and awareness programmes;**
8. **Increasing effectiveness and efficiency of early warnings and disaster and emergency management;**
9. **Promoting the use of sustainable, renewable sources of energy and energy efficiency;**
10. **Strengthening capacity to access finance, monitor expenditures and maintain strong partnerships;**
11. **Maintaining the existing sovereignty and unique identity and cultural heritage of Kiribati; AND**
12. **Enhancing resilience through strategic partnerships for community participation & engagement ownership and inclusion of vulnerable groups**

Each strategy identifies expected results and a combination of indicators. These indicators have been identified to track progress in implementing the adaptation priorities identified but they do not represent the full M&E system. These are only some initial steps and will need further revision.

KJIP IMPLEMENTATION ARRANGEMENTS – GOVERNANCE, COORDINATION, COMMUNICATION AND MONITORING

The KJIP is building on and intended to strengthen existing implementation, financing and monitoring functions by integrating them with climate change and disaster risk management considerations. In addition, it is designed to strengthen coordination and communication among the Office of Te Beretitenti, Ministry of Finance and Economic Development, Ministry of Foreign Affairs and Immigration and line ministries as well as civil society, the private sector and development partners.

The KJIP formalises the role of the Kiribati National Expert Group on Climate Change and Disaster Risk Management (KNEG) to become the main advisory body and coordination mechanism as well as the entry point for climate change and disaster risk management initiatives. Furthermore, the Office of the Beretitenti (President) (OB) will continue to coordinate the KJIP Secretariat, with the main roles of: facilitating KNEG meetings; reviewing and monitoring KJIP implementation together with responsible lead agencies; and communicating with the general public, parliament, cabinet, development partners and the international community. The KJIP Secretariat will be under the guidance of the OB and the Development Coordinating Committee.

The KJIP vision, goal, strategies and results will be disseminated by all implementing partners through existing information-sharing networks, media and forums at international, regional, national and local levels. This work will align with the Kiribati Climate Change and Climate Risk Communications Strategy that is currently being reviewed.

The programmes, projects and activities that will be conceived and developed to achieve the goals of the KJIP shall take into consideration the differences between and among women and men in terms of needs and capacities. Programmes should generate sex-disaggregated data to help ensure equitable access to financial resources and other benefits (e.g., technologies and services, climate information, capacity building on climate risk management) for women and men resulting from investments in adaptation. The differentiated impacts of climate adaptation actions on women and men should be monitored. Gender balance in participation and influence in decision making shall be sought and achieved for all projects' governance and, during inception, the final management and decision-making frameworks shall make certain that gender issues are well incorporated.

The KJIP will be monitored through the Kiribati Development Plan Monitoring and Evaluation Framework (2019). At the ministerial level, KJIP strategies will be monitored through the annual Ministry Strategic Plans and supplementary monitoring mechanisms specific to the KJIP, which will have to incorporate relevant KJIP actions and outcome indicators. The KJIP is understood to be a living document, and as such the KNEG can adjust it to meet emerging needs to be approved by the Development Coordinating Committee.

FUNDING THE KJIP

The implementation of the KJIP is to be financed through existing strategies, ranging from the national budget to overseas development assistance, including additional climate finance and disaster-related humanitarian aid.

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LIST OF ABBREVIATIONS

ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
AF	Adaptation Fund
ANCORS	Australian National Centre for Ocean Resources and Security
ATHKL	Amalgamated Telecom Holdings Kiribati Limited
AUD	Australian Dollar
AAP	Australia's Aid Program
BMZ	Federal German Ministry for Economic Cooperation and Development
BoM	Australian Bureau of Meteorology
BPoA+10	Barbados Program of Action +10
CBFM	Community-Based Fisheries Management
CC	Climate change
CCA	Climate change adaptation
CIF	Climate Investment Funds
CO_2	Carbon dioxide
CROP	Council of Regional Organisations in the Pacific
CSIRO	Commonwealth Scientific and Industrial Research Organisation (Australia)
CSO	Community Services Organisation
DRM	Disaster Risk Management
EDF	European Development Fund
EEZ	Exclusive Economic Zone
ESSP	Education Sector Strategic Plan
EU	European Union
ENSO	El Niño–Southern Oscillation
FAD	Fish Aggregating Device
FBO	Faith-Based Organisations
FFA	Forum Fisheries Agency
FRDP	Framework for Resilient Development in the Pacific
FSPKI	Foundation of the Peoples of the South Pacific Kiribati International

FTC	Fisheries Training Centre
GBV	Gender-based violence
GCF	Green Climate Fund
GDP	Gross domestic product
GoK	Government of Kiribati
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
ICT	Information and communication technology
IDC	Island Disaster Committee
IFAD	International Fund for Agricultural Development
IPCC	Intergovernmental Panel on Climate Change
ITCZ	Intertropical Convergence Zone
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
KANGO	Kiribati Association of Non-Government Organisations
KAP	Kiribati Adaptation Project
KCCI	Kiribati Chamber of Commerce and Industry
KCFD	Kiribati Climate Finance Division (MFED)
KDP	Kiribati Development Plan
KHFA	Kiribati Health and Family Association
KiLGA	Kiribati Local Government Association
KIT	Kiribati Institute of Technology
KIVA.DB	Kiribati Integrated Vulnerability Assessment Database
KJIP	Kiribati Joint Implementation Plan for *Climate Change and Disaster Risk Management*
KMS	Kiribati Meteorological Service
KNAP	Key National Adaptation Priority
KNEG	Kiribati National Expert Group on Climate Change and Disaster Risk Management
KNSO	Kiribati National Statistics Office
KPA	Key Policy Area
KPF	Kiribati Provident Fund

KRCS	Kiribati Red Cross Society
KTC	Kiribati Teachers College
KV20	Kiribati 20 Year Vision 2016-2036
LDCF	Least Developed Countries Fund
MIA	Ministry of Internal Affairs
MCIC	Ministry of Commerce, Industry and Cooperatives
MICTTD	Ministry of Information, Communications, Transport and Tourism Development
MELAD	Ministry of Environment, Lands and Agriculture Development
MELAD-ALD	MELAD Agriculture and Livestock Division
MELAD ECD	MELAD Environment and Conservation Division
MFAI	Ministry of Foreign Affairs and Immigration
MFED	Ministry of Finance and Economic Development
MFMRD	Ministry of Fisheries and Marine Resources Development
MHMS	Ministry of Health and Medical Services
MISE	Ministry of Infrastructure and Sustainable Energy
MJO	Madden–Julian Oscillation
MEHR	Ministry of Employment and Human Resource
MOE	Ministry of Education
MOP	Ministerial Operational Plans
MOU	Memorandum of Understanding
MPWU	Ministry of Public Works and Utilities
MSP	Ministerial Strategic Plans
MSP	Marine Spatial Plans
MTC	Marine Training Centre
Mw	Moment Magnitude (of a tsunami)
MWYSSA	Ministry of Women, Youth, Sport and Social Affairs
NAP	National Adaptation Plan
NAP GN	National Adaptation Plan Global Network
NEPO	National Economic Planning Office (MFED)
NFCCCCA	National Framework for Climate Change and Climate Change Adaptation

NDRMP	National Disaster Risk Management Plan
NGO	Non-Governmental Organisation
NIPS	National Intellectual Policy Strategy
NQP	National Quality Policy
NPBC	National Biodiversity Planning Committee
OB	Office of Te Beretitenti (Office of the President)
OTEC	Ocean Thermal Energy Conversion
PIFACC	Pacific Islands Framework Action on Climate Change
PIMS	Pacific Islands Meteorological Strategy
PIFS	Pacific Islands Forum Secretariat
ppm	parts per million
RST	Regional Support Team
SARS	Severe Acute Respiratory Syndrome
SDG	Sustainable Development Goals – The Global Goals.
SF & CP	KCFD Strategic Framework and Country Plan
SME	Small and Medium-sized Enterprises
SOE	State-Owned Enterprises
SOPAC	South Pacific Applied Geoscience and Technology Division (SPC)
SOP	Sector Operational Plan
SPC	Secretariat of the Pacific Community
SPCZ	South Pacific Convergence Zone
SPREP	Secretariat of the Pacific Regional Environment Program
SRDP	Strategy for Climate and Disaster Resilient Development in the Pacific
SSS	Senior secondary school
TPF	Trade Policy Framework
TVET	Technical and Vocational Education and Training
UN CBD	United Nations Convention on Biological Diversity
UN CLOS	United Nation Convention on the Law of the Sea
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization

UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
UNISDR	United Nations International Strategy for Disaster Reduction
USAID	United States Agency for International Development
USP	University of the South Pacific
WDD	MWYSSA Women's Development Division
WHO	World Health Organization
WoI	Whole-of-Island approach
WMO	World Meteorological Organization

1. BACKGROUND

1.1 KEY GEOGRAPHICAL AND GEOLOGICAL FEATURES

The Republic of Kiribati is made up of 33 scattered islands dispersed over 3.6 million square kilometres (km) in the Central Pacific Ocean. It is only 800 km from the north to south ends of the country, but 3,210 km from east to west (see Figure 1). There are three main island groups: Gilbert, Phoenix and the Line Islands consisting of 32 low-lying atolls that rise to no more than 2 or 3 metres above sea level, apart from Banaba, a raised coral island with a high point of 81 m, which was once a rich source of phosphate.

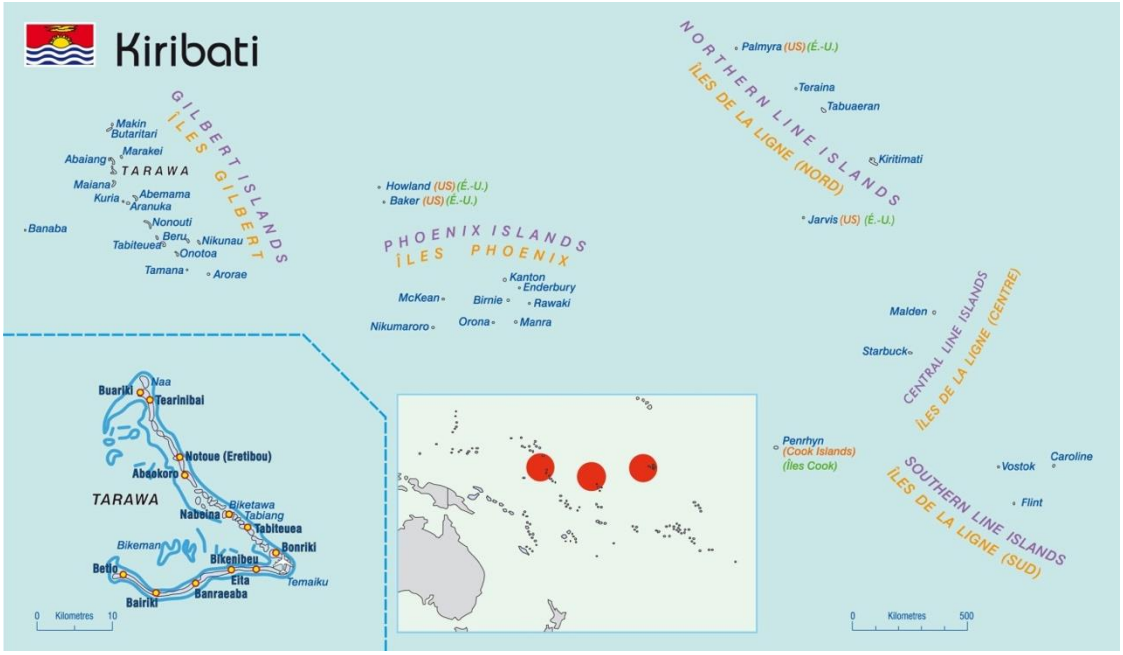

Figure 1. Map of Kiribati

COUNTRY STATISTICS (Source: CIA, n.d.)

Geographic coordinates	Lat. 4°N–3°S, long.157°W–172°E
Total land area	810.5 km^2
Coastline	1,410,000 km
Exclusive economic zone	3.6 million km^2
Geography	33 islands, 21 inhabited; three island groups: Gilbert Islands, Line Islands and Phoenix Islands & one isolated volcanic island, Banaba
Climate	Hot, humid, tropical

The Kiribati 2015 census determined that the total population was 110,136, of whom 50.9 per cent were female and 49.1 per cent male. This indicates an increase of 6.9 per cent or 7,078 people over the five years since 2010, when the census recorded a population of 103,058. This represents an average annual rate of growth of 1.3 per cent (KNSO 2015).

On the capital island South Tarawa (in the Gilbert Group) the population density is one of the highest, at 3,184 people per square kilometre. This is where 51.1 per cent of the population of Kiribati resides, and the population here increased by 12.4 per cent from between 2010 to 2015 (KNSO, 2015). On the outer islands of the Gilbert, Line and Phoenix Groups, the 2015 census recorded a population of 10,503.

More specifically, the populations of the islands of Teraina, Tamana, Butaritari, Kiritimati and North Tarawa increased from 2005 to 2010, whereas populations in Banaba, Makin, Tabuaeran, Nonouti and Onotoa decreased. High rates of population growth in urban centres have placed stress on water and sanitation infrastructure, causing a high incidence of water-borne disease (Asian Development Bank [ADB], 2009).

Young people represent more than 20 per cent of the population of Kiribati, and this percentage is projected to grow over the next decade (KNSO, 2015). The mean age of the population is 24.9 years, and 15.9 per cent of the population is aged five years or younger, reflecting the high birth rate of 31.3 per 1,000 people per year (KNSO, 2012). The latest Kiribati National Disability Survey identified 3,840 people with disabilities, with 23 per cent of those under the age of 20 years (KNDSAC, 2005).

1.2 ENVIRONMENT AND BIODIVERSITY

Kiribati ratified the United Nations Convention on Biological Diversity (UNCBD) in 1994 as well as the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) in 2005 and the Cartagena Protocol on Biosafety in 2004. It has a National Biodiversity Planning Committee (NPBC) made up of a multidisciplinary team comprising stakeholders from a variety of government ministries as well as civil society partners.

1.2.1 Ocean

With its large ocean territory, Kiribati has a rich marine biodiversity. The Phoenix Group is one of the largest marine parks in the world and in 2010 was added to the list of United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage sites. There are two submerged reef systems in this protected area, the greater part of which comprises the ocean floor, with a water column averaging more than 4,000 metres deep and reaching a maximum at 6,147 metres. It is home to a number of predatory fish, sea turtles, sea birds, corals, giant clams and coconut crabs, most of which have been depleted elsewhere in the region (MELAD ECD, 2019).

The relatively rich variety of marine fauna (consisting of approximately 300 to 400 species) continues to provide the people of Kiribati with their main source of protein, fish.

1.2.2 Land

In contrast, the indigenous land-based flora and fauna of Kiribati are among the poorest on Earth, and there are few endemic species. Despite the limitations of land, soil and freshwater resources, the people of Kiribati have developed sophisticated subsistence agricultural systems based mainly on coconut, breadfruit, pandanus and swamp taro.

Kiritimati in the Line Group is the largest atoll in the world and holds a diversity of avifauna of both regional and international significance. The atoll provides nesting, roosting, feeding and migration sites for over 40 bird species.

1.3 CURRENT CLIMATE AND CLIMATE VARIABILITY

The climate data presented here are derived from temperature and rainfall records from 1947 up to 2011 and analysed by the Kiribati Meteorological Service (KMS), the Australian Bureau of Meteorology (BoM) and the Commonwealth Scientific and Industrial Research Organisation (CSIRO, 2014). Kiribati operates five meteorological stations—in Tarawa for the Gilbert Group, in Kiritimati for the Line Group and in Beru, Kanton and Butaritari.

1.3.1 Current Climate

Kiribati has a hot, humid, tropical climate with an average air temperature of 28.3°C and an average rainfall of about 1,925 mm per year in Tarawa (2008–2018; KMS 2019). Its climate is closely related to the temperature of the oceans surrounding the small islands and atolls. Across Kiribati, the average temperature is relatively constant throughout the year. From season to season the temperature changes by no more than about 1°C. Kiribati has two seasons—*te Au Maiaki* (the dry season) and *te Au Meang* (the wet season). The periods of the seasons vary from location to location and are strongly influenced by the seasonal movement of the South Pacific Convergence Zone (SPCZ) and the Intertropical Convergence Zone (ITCZ) (see Figure 2) (KMS, BoM & CSIRO, 2011).

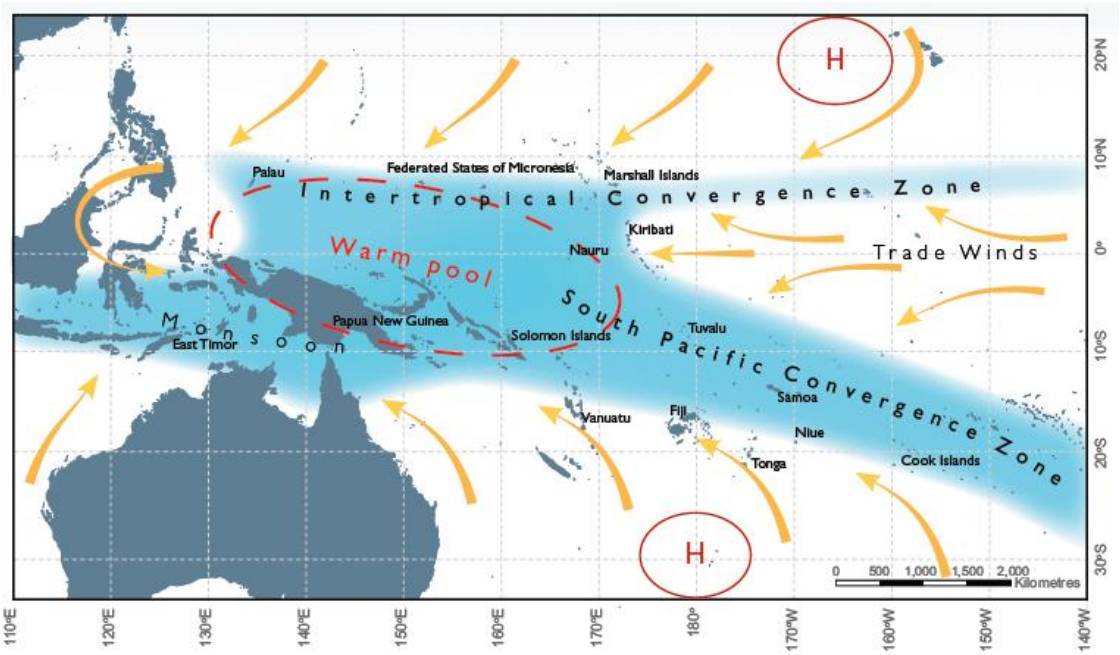

Figure 2. Map showing the average positions of the South Pacific Convergence Zone, Intertropical Convergence Zone and West Pacific Monsoon (all shaded blue) in the western tropical Pacific region in November to April.

The yellow arrows show near-surface winds and the red dashed oval indicates the West Pacific Warm Pool. "H" represents typical positions of moving high-pressure systems.

Warming trends are evident in both annual and half-year mean air temperatures at Tarawa from 1950.

At Kiritimati, in eastern Kiribati, there has been an increase in November–April rainfall since 1946. This implies either a shift in the mean location of the ITCZ toward Kiritimati and/or a change in the intensity of rainfall associated with the ITCZ. The remaining annual and

seasonal rainfall trends for Kiritimati and Tarawa and the extreme rainfall trends for Tarawa show little change.

Wind-waves in Kiribati are strongly influenced by both north-easterly and south-easterly trade winds seasonally. The location of the SPCZ is also affected by these trade winds, with some effect of the El Niño–Southern Oscillation (ENSO) interannually. There is little variation in wave climate across the country. Available data are not suitable for assessing long-term trends (see Figure 3).

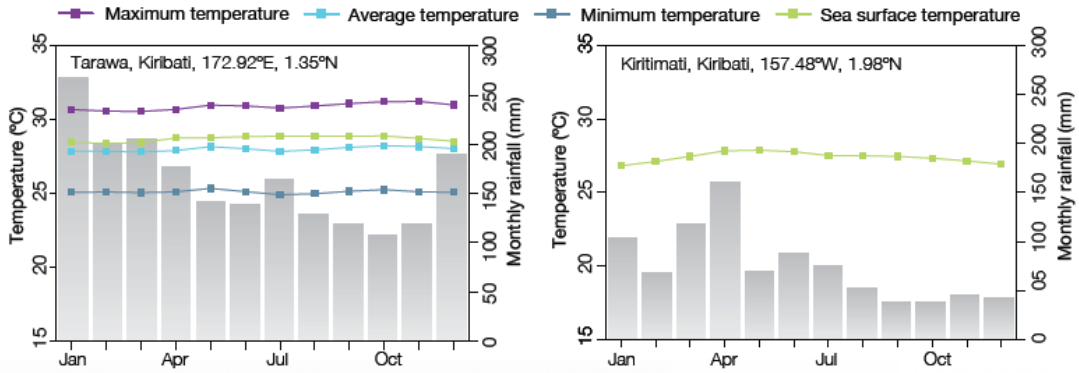

Figure 3. Seasonal rainfall and temperature on Tarawa and Kiritimati

Grey bars: mean annual cycle of rainfall and daily maximum, minimum and mean air temperatures at Tarawa (left), and for rainfall only at Kiritimati (right), as well as local sea surface temperatures.

Source: KMS, BoM & CSIRO 2011.

Across Kiribati, there is a change in mean monthly rainfall towards the end of the year. There is, however, a large variation in mean annual rainfall across Kiribati. A notable zone of lower rainfall, less than 1,500 mm per year exists near the equator and extends eastwards from 170°E. On average, Tarawa at 1.14160N receives just under 2,100 mm, while the island of Butaritari at 3.16780N only 350 km to the north receives around 3,000 mm (KMS, BoM & CSIRO, 2011).

1.3.2 Climate Variability

Kiribati's climate varies considerably from year to year due to the El Niño–Southern Oscillation (ENSO). The ENSO is a natural climate pattern that occurs across the tropical Pacific and affects weather around the world. There are two extreme phases of the ENSO: El Niño and La Niña. There is also a neutral phase.

Across Kiribati, El Niño events tend to bring wetter, warmer conditions than normal while much cooler condition and lower rainfall during La Niña. El Niño is generally associated with above-normal rainfall and strong westerly winds, while La Niña is associated with below-normal rainfall and the risk of drought (KMS, BoM & CSIRO, 2015). In the wettest years Tarawa has received more than 4,000 mm of rainfall, but in the driest years as little as 150 mm.

Other sources of climate variability affecting the Kiribati islands include the Madden–Julian Oscillation (MJO), an eastward-moving atmospheric disturbance of clouds, rainfall, winds, and pressure that traverses the planet in the tropics and returns to its initial starting point in around 30 to 60 days (Gottschalk, 2014). Heavy downpours and rain were observed throughout December 2018 and January 2019, leading to flooding in low-lying areas around Tarawa and the outer islands. This was largely attributed to a strong phase of the MJO that was active over the Western Pacific region at that time.

This atmospheric disturbance is distinct from ENSO, which, once established, is associated with persistent features that last several seasons or longer over the Pacific Ocean basin. There can be multiple MJO events within a season, and so the MJO is best described as intra-seasonal tropical climate variability (i.e., it varies on a week-to-week basis) (Gottschalk, 2014).

1.4 ECONOMY

1.4.1 Small-scale

The natural resources of Kiribati provide a narrow production base, consisting largely of subsistence agriculture, copra and fish. The very limited natural resource base and infertile soil of atoll islands constrain agricultural development. Production in the agriculture sector is mainly copra and coconut products. Tree crops and vegetables (particularly pumpkin, banana, and other traditional crops) are grown but have limited supply to meet the high demand, especially in South Tarawa and Kiritimati.

Kiribati does, however, possess abundant ocean resources, principally fish, seaweed, manganese nodules and cobalt-rich crusts. Fish and seaweed are the major exports while the latter have yet to be explored and mined.

The maritime and fisheries sector offers strong employment opportunities for I-Kiribati. Access agreements currently dictate I-Kiribati crewing requirements and I-Kiribati crew have built a strong regional reputation, particularly among Japanese fleets. It is estimated that approximately 325 I-Kiribati crew are working on Japanese fishing vessels and between 100 and 200 on Korean, Taiwanese and Chinese fleets (MFMRD, 2013).

In addition, I-Kiribati are developing expertise and reputations as merchant seafarers, with over 600 employed abroad. These maritime positions are now providing a significant national income of over AUD 8 million for Kiribati through remittances. Maritime training for I-Kiribati is a key development field.

The limited employment opportunities within the country have, however, forced skilled nationals to migrate abroad in search of jobs (Mendani & Mario, 2008). Youth unemployment or underemployment is particularly high, at 67 per cent for those aged 15–24—more than double the rate of the broader Kiribati population (Census 2015).

The private sector contributes significantly to employment in Kiribati. Based on information by the Kiribati Provident Fund (KPF), private sector employment has risen significantly in recent

years. The number of KPF contributors in the private sector rose sharply from 2,156 in June 2009 to 3,277 in June 2015, an increase of 51.9 per cent.

1.4.2 Large-scale

The private sector can be an engine of economic growth and development for Small Island States like Kiribati. While the private sector in Kiribati is small compared to the public sector, its contribution to GDP has increased from 47.3 per cent in 2005 to 54.5 per cent in 2015. Private sector formal employment has increased at a rate of over 12 per cent per year since 2010. As a result, the number of private sector contributors to the KPF increased from 2,130 in June 2010 to 3,982 in June 2016, a rise of 87 per cent. The number of contributors from the public sector, on the other hand, saw a smaller increase of around 2 per cent, rising from 6,789 in 2010 to 6,917 in 2016 (KV20, 2018).

Table 1. Economic information

Real GDP (2017)[1]	AUD 187,253,000
Real GDP per capita (2017)1	AUD 1,656
Real growth rate (2017)1	0.3%
Paid employment in labour force (2015)2	27,954 (men 57.7 %, women 42.3 %)
Unpaid work in labour force (2010)2	7,503 (men 61 %, women 39 %)
Unemployment rate in labour force (2015 estimate)[2]	41% (men 45.7 %, women 54.3 %)

Sources: [1]MFED& KNSO 2015, 2017; [2]Based on KNSO & 2015.

Fishery resources are critically important to the Kiribati economy for revenue, employment and income. The lagoons and rich oceanic waters of Kiribati are home to numerous artisanal and small-scale commercial fisheries, aquaculture operations and commercial joint ventures, as well as foreign distant water fleets that fish in Kiribati's exclusive economic zone (EEZ) and primarily land in foreign ports for foreign markets. In 2015 the total income revenue from fishing licensing reached a record high of AUD 198 million.

External sources of funding are a major component of budget financing for the government, averaging 40 per cent of total revenue and 90 per cent of development expenditures in the last four years. It is therefore critical that donors work towards improving the integration of the modality and execution of externally sourced interventions into the government's budget system and its implementation machinery (MFED, 2019).

Kiribati is highly exposed to external economic shocks, particularly surges in food and fuel commodity prices, due to its limited revenue base and high dependency on imports. Progress toward achieving the Millennium Development Goals is poor, even by regional standards, particularly in relation to certain aspects of health, water and sanitation.

1.4.3 Women in the Economy

I-Kiribati women play a significant role in the country's economic and development processes. In the 2015 Census Report Vol. 2, women represented 50.9 per cent of Kiribati's population and contributed to the country's economic development both with both formal paid work (59.76 per cent rate of labour force participation) and unpaid work caring for children, elders and household management (KNSO, 2015).

The Kiribati Government recognises the importance of women's economic empowerment—i.e., improving women's access to income-generating activities, especially through handicraft making and access to markets and agriculture to improve women's status and livelihoods—as a key pillar for building strong, resilient I-Kiribati families (MWYSSA, 2017). The diversification of livelihood activities and sources of income is often a key strategy to enhancing resilience to the negative impacts of climate change—hence the importance of supporting women's economic empowerment to build their own resilience and that of their families. Indeed, strengthening women will contribute to strengthening the family, where many of the barriers to gender equality are rooted.

Building a family that is resilient to the negative impacts of climate change involves a recognition of the different roles (and related vulnerabilities) of women and men in the family and their different climate adaptation needs and capacities. It can help to understand that not everybody is the same within the household or the community.

The government has already made some progress towards women's economic empowerment. According to the 2014 *Kiribati Digest of Education Statistics* (Republic of Kiribati, 2014), the country had achieved gender parity in primary education, while in secondary education female students outnumbered males. However, many I-Kiribati women still do not have the same opportunities as men to take jobs or develop a business, in part due to their greater share of home-based duties and responsibilities for children. According to the 2015 population census, women's unemployment rate is 51.8 per cent compared to 48.2 per cent for men (KNSO, 2015). The high female youth unemployment rate is likely to contribute to the vulnerability of young women to early pregnancy and/or engagement in sex with seafarers.

Women are less than a third of all employers, 38 per cent of the self-employed, but 45 per cent of paid employees. They represent 47 per cent of public sector employees but only 40 per cent of private sector employees (KNSO, 2015). In terms of higher paid work abroad, women have been deterred from working as seafarers due to harassment by men, and are underrepresented amongst those accessing short-term agricultural work in New Zealand, for example. In 2010, women were nearly half (47.4 per cent at the 2010 census) of all workers in the non-agricultural sector (KNSO & SPC, 2012). According to a 2012 study, one in five Kiribati households are headed by females, with one in four female-headed households in the poorest quintile in South Tarawa and the rural Gilbert Islands (AusAID, 2012).

1.5 COMMUNICATIONS AND TRANSPORT

Communication services are starting to improve in Kiribati. There are now two telecommunication companies in the country which until recently lacked a competitive ICT environment. This new development might lead to an increased affordability of services. A national television service was re-established in 2018. It is being operated by Taotin with a minimal number of users in South Tarawa only. There are currently three radio stations, which provide the main form of mass communication.

Internet us has boomed over the last few years and is becoming a useful method of communication within the islands of Kiribati, especially with youth and the computer/mobile literate segment of the population. In 2010, 4 per cent of households owned an Internet connection: by 2015, the proportion of households with Internet access had increased to 7 per cent (KNSO, 2015). It is expected that most of the outer islands will have Internet and mobile services by the end of 2018 or early 2019.

Moreover, 4G services are available in South Tarawa, Abemama, Tabiteuea North and Onotoa, while 3G services are available on South Tarawa, North Tarawa, Abaiang, Marakei and Kiritimati. In addition, 2G services are also available on Abemama, Tabiteuea North and Onotoa. Other islands have VSAT systems set up at island council premises that residents can access.

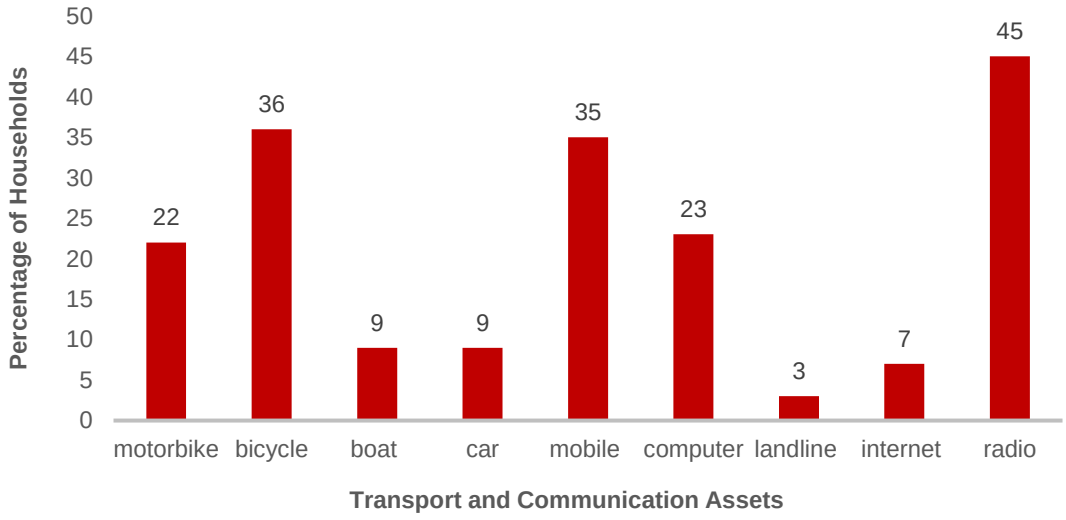

Figure 4. Ownership of transport and communication assets

Source: KNSO, 2015.

In addition to improved access to communication technology and communication between islands, 9 per cent of households own a car, 22 per cent a motorbike and 9 per cent boats of any kind (see Figure 4).

Bicycles are the main form of land transport on Kiribati, with 36 per cent of households owning one (KNSO, 2015). The proportion is highest in the outer islands where road infrastructure is limited.

The main island of South Tarawa is connected through commercial flights six days in a week to both Fiji Islands and Nauru. Kiritimati is connected to Fiji Islands once a week and there are domestic services offered by the three operating domestic carriers in the Gilbert Group and one in the Phoenix and Line groups. Transport from the capital South Tarawa to the biggest atoll and key tourist destination, Kiritimati, requires international transit through Fiji Islands. There is a Kiribati National Shipping Line with a few ships and a number of privately owned ships for inter-island ferry and shipping services. There are also number of small, higher-speed boats available for charter.

1.6 GOVERNMENT AND GOVERNANCE

Formerly part of the British colony known as the Gilbert and Ellice Islands, Kiribati became an independent republic in 1979 and now enjoys full membership of the United Nations and all regional organisations. The country is a member of the Commonwealth and adopted a blend of both the British and American parliamentary systems. It is a sovereign, democratic state with a 42-member *Maneaba ni Maungatabu* (House of Parliament), elected every four years. The *Beretitenti* (President) is elected nationally from among three or four candidates nominated by the Maneaba from its ranks. The *Beretitenti* chooses a 12-member cabinet from the Maneaba.

The outer islands are well represented in Parliament, with 35 members representing the outer islands and six members for South Tarawa. Women make up just 4.3 per cent of the members of the Kiribati Parliament, even though they represent 50 per cent of the workforce (UNWomen, n.d.).

There are 20 island councils and three urban councils. Members of the island councils have discretionary power through issuing licences for business development and setting prices such as bus fares (KiLGA 2013). A number of councils have developed strategic and operational plans, including Betio Town Council, Eutan, Abaiang and Teinainono Councils.

Disability issues fall under the responsibility of the Ministry of Women, Youth, Sports and Social Affairs (MWYSSA) although there is neither a dedicated disability budget nor a dedicated position. Neither the Ministry of Education (MOE) nor the Ministry of Health and Medical Services (MHMS) has dedicated positions that focus on disability support (UNICEF, 2010).

I-Kiribati men and women may not have the same opportunities when it comes to political representation. While some women hold significant positions in the public service, historically not many women have been involved in the highest levels of decision making. Women's voices and issues at the community level are being heard and incorporated into planning where women participated or had their views voiced by the men. Data from the 2015 population census confirms a conflicted picture: representation of women as senior

government officials is balanced (50 per cent), but women's participation in politics as members of the Parliament and as island councillors is very low (6 per cent and 5 per cent respectively). These differences need to be considered to ensure men and women are able to make choices about climate adaptation measures.

Civil society organisations are key vehicles for expressing community views and solving community problems. Working sensitively with women's NGOs, the wider NGO sector and in faith-based organisations (FBOs) to increase women's status in leadership and broader acceptance of gender equality will be a further strategy to enhance women's participation and influence in planning and implementing CCA and DRM measures.

The Women Development Division under the Ministry of Women, Youth, Sports and Social Affairs (MWYSSA) is well-placed to use its networks with NGOs, local governments and outer island programme across Kiribati to ensure that key CCA and DRM messages are tailored to the needs of women and men and can work with the Ministry of Internal Affairs to ensure that these messages reach women and men.

The private sector or the business community is one of the key stakeholders and therefore they should be represented in the decision-making body to express their views and to contribute to implementing such decisions. Addressing climate change and disaster risk issues requires collective action and holistic approach. The Kiribati Chamber of Commerce and Industry (KCCI) is the national private sector organisation that falls under the Ministry of Commerce, Industry and Cooperatives (MCIC).

2. CLIMATE CHANGE AND DISASTER RISK CONTEXT

As a result of its inherent characteristics as an atoll nation and a least developed country, Kiribati is extremely vulnerable to climate change and has very little capacity to cope with natural and man-made disasters.

Climate variability is causing—and will continue to cause—more frequent and increasingly intense weather events, and climate change will heighten existing socioeconomic and environmental pressures. While some hazards are not climate-related (such as tsunamis or oil spills) they share the common factors of vulnerability (including exposure) and similar tools used to monitor, analyse and address adverse consequences. Therefore, it makes sense to consider and address disaster risk management and climate change adaptation in a systematic and integrated manner.

There are also challenges to this integrated approach. Consider, for instance, the different timelines within which disaster risk management and climate adaptation evolve. A key priority for disaster risk management is to develop systems and processes allowing for swift interventions in the immediate aftermath of a disaster—the focus therefore lies on short-term interventions and results. However, climate adaptation requires a medium to long-term focus. The joint implementation plan aims to provide guidance for both.

While there are challenges to addressing these concepts in a joint approach (as in the example above) the potential benefits of doing so are immense. Both disaster risk management and climate change adaptation and mitigation aim to improve the resilience of communities, so an integrated approach will help advance sustainable national development, making better use of existing national and regional capacities and resources as well as more effectively targeting new initiatives to address multiple hazards and phenomena.

2.1 THE CHANGING CLIMATE OF KIRIBATI

Warming from anthropogenic emissions from the pre-industrial period to the present will persist for centuries to millennia and will continue to cause further long-term changes in the climate system (such as sea level rise) with associated impacts (IPCC, 2018a). Most of the global emissions that contribute to climate change originate from burning fossil fuels for transportation, electricity, heating and industry in economically fast-growing and industrialised countries. Since the beginning of the 20th century, global industrial activity has grown by 40 times, and the emission of greenhouse gases has grown by 10 times. In addition, land-use changes due to deforestation and agricultural production have contributed to the higher emissions.

Despite all international efforts to reduce emissions, the amount of carbon dioxide (CO_2) in the atmosphere increased from around 280 parts per million (ppm) at the beginning of the century to 400 ppm in 2013 (Tans & Keeling, 2013). According to scientists, the safe upper limit for CO_2 is 350 ppm. In addition, methane (CH_4) rose from a pre-industrial atmospheric concentration of around 700 parts per billion (ppb) to about 1,789 ppb by 2007 (see Figure 5).

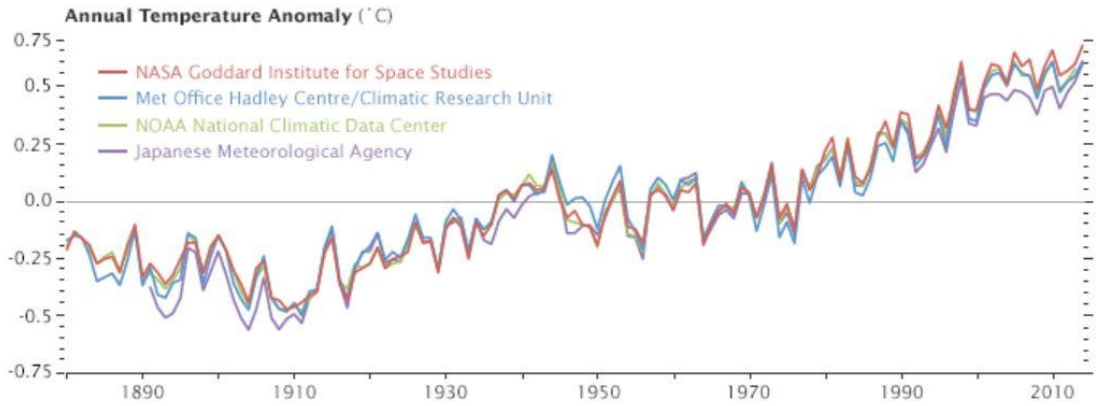

Figure 5. Rising global mean surface temperatures as recorded in the United States, United Kingdom and Japan.

The line plot above shows yearly temperature anomalies from 1880 to 2014 as recorded by NASA (US), NOAA (US), the Japan Meteorological Agency, and the Met Office Hadley Centre (UK). Though there are minor variations from year to year, all four records show peaks and valleys that are in with each other. They also show rapid warming in the past few decades, the last decade being the warmest.

Source: NASA and Earth Observatory, n.d.

The climate of Kiribati is changing and will continue to change in the future. Steadily increasing emissions of greenhouse gases have enhanced the greenhouse effect, causing the climate to warm all around the world, including in Kiribati.

This trend is of great concern to Kiribati, as the increasing temperatures have a huge range of global implications. Due to the melting of land-based glaciers and ice sheets and the thermal expansion of the ocean, the sea level is rising. Rainfall patterns are changing, and extreme weather events will get more frequent and intense. IPCC's special report *Global Warming of 1.5°C* identifies 5 Reasons For Concern (RFCs) illustrating the impacts and risks that different levels of global warming pose for people, economies and ecosystems across sectors and regions (see Figure 6). Amongst these RFCs, a 1.5 C° increase in temperatures represents a high risk for unique and threatened systems (RFC1), and is also very likely to result in higher impact of extreme weather events (RFC2) (IPCC, 2018b).

In addition, warmer oceans that take in more carbon dioxide affect the growth and productivity of marine life—in tropical areas, the effects are particularly negative for coral reef habitats. Increased temperatures also pose a significant threat to small-scale low-latitude fisheries and increase the risks of coastal flooding (IPCC, 2018b).

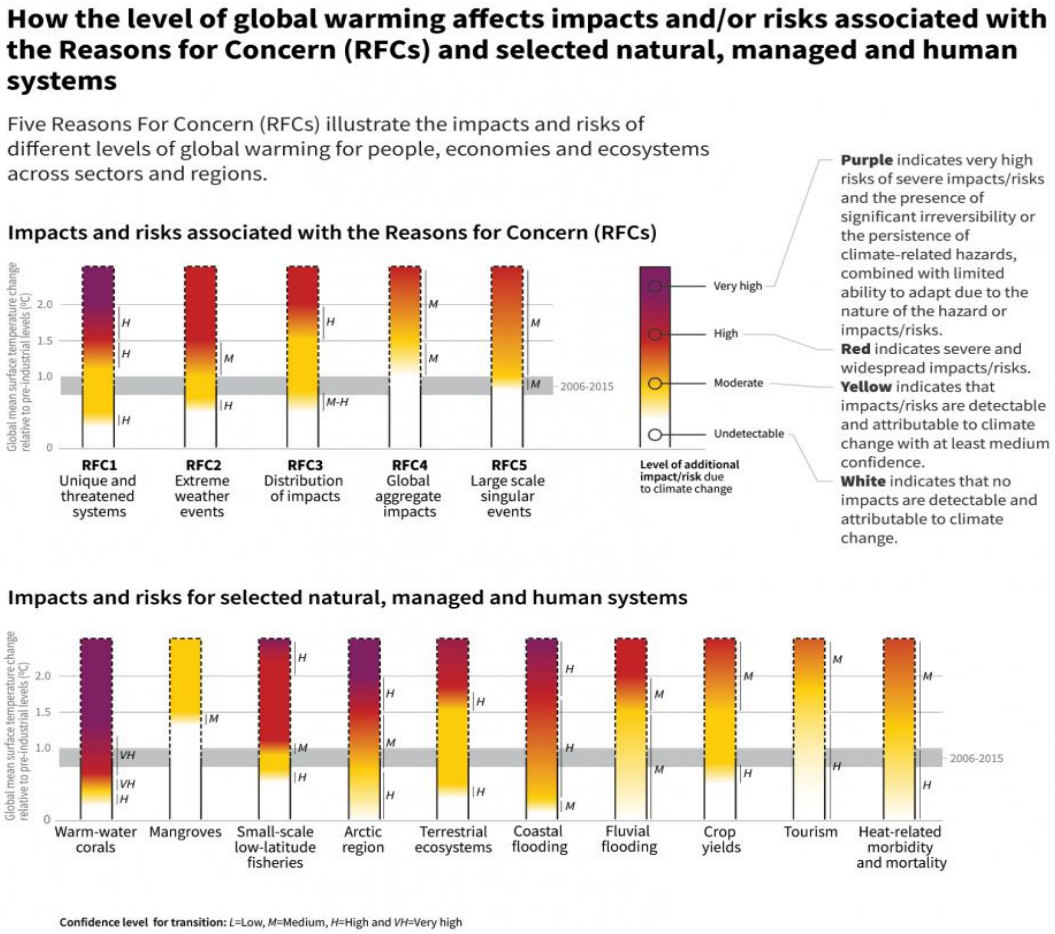

Figure 6. How the level of global warming affects impacts and/or risks associated with the Reasons for Concern and selected natural, managed and human systems

Source: IPCC, 2018b.

The following subsections report on changes in climate in Kiribati, both those already observed and those predicted for the future.

2.1.1 Observed Trends

Table 2 summarises the trends already observed in variables such as temperature, rainfall, sea level, extreme events and ocean acidification in Kiribati.

Table 2. Climate trends in Kiribati observed from 1950

Climate variable	Observed trends
Air temperature	Annual and seasonal mean air temperatures are getting warmer: • Maximum temperatures have increased at a rate of 0.13°C per decade. • Annual and seasonal maximum and minimum temperatures have increased in Tarawa since 1950 (KMS, BoM, CSIRO, 2015).
Sea surface temperature	Water temperatures have risen since the 1970s: • in the Gilbert Group by approximately 0.15°C per decade; • in the Line Group by approximately 0.1°C per decade; and • in the Phoenix Group by approximately 0.12°C per decade. Since 1950 the rise has been gradual in the waters around the Gilbert Islands, but it has been variable from one decade to the next in the Line and Phoenix Islands.
Rainfall	Annual rainfall has increased: • Annual and wet season rainfall has increased for Kiritimati but there is no trend in the dry season. • At Tarawa, rainfall data show no clear trends. • At both the above sites, rainfall has varied substantially from year to year (KMS, BoM, and CSIRO 2015).
Droughts	The impact of droughts, usually associated with La Niña, can be severe in Kiribati; for example: • In 1971, 1985, 1998, 1999 to 2002, 2009, 2012 to 2014, 2018 to March 2019 annual rainfall was less than 750 mm. • The drought from April 2007 to early 2009 severely affected the southern Kiribati islands and Banaba. During this period, groundwater turned brackish and the leaves of most plants turned yellow. • The recent drought from April 2018 to March 2019 severely affected groundwater, which turned brackish and deep-rooted crops leaves turned yellow e.g., breadfruit trees around South Tarawa and outer islands especially islets (KMS 2019).
Cyclones, severe storms and extreme sea levels	• Tropical cyclones rarely pass between the Kiribati islands. • Between 1969/70 and 2009/10 three cyclones passed within 400 km of Arorae Island in western Kiribati, three cyclones within 400 km of Caroline Island in eastern Kiribati, and one cyclone paired with one depression passed south and north of Western Kiribati respectively. Extreme sea levels caused by storm surges occur occasionally (KMS 2019).
Sea level	Sea level has risen (see Figure 7): • Sea level measured by satellite altimeters has risen by1–4 mm per year (global average is 3.2 +/– 0.4 mm per year). • Sea level rise naturally fluctuates from year to year at levels of about 26 cm. There are also decade-to-decade variations. These fluctuations over both timeframes are a result of phenomena such as ENSO.

Climate variable	Observed trends
Ocean acidification	Ocean acidification has been increasing: • Since the 18th-century ocean has been slowly becoming more acidic. The aragonite saturation state has declined from about 4.5 in the late 18th century to an observed value of about 3.9 ± 0.1 by 2000. • "Based [on] the large-scale distribution of coral reefs across the Pacific and the seawater chemistry, Guinotte et al. (2003) suggested that seawater aragonite saturation states above 4 were optimal for coral growth and for the development of healthy reef ecosystems, with values from 3.5 to 4 adequate for coral growth, and values between 3 and 3.5, marginal. Coral reef ecosystems were not found at seawater aragonite saturation states below 3 and these conditions were classified as extremely marginal for supporting coral growth" (KMS, BoM& CSIRO 2011, Vol. 2, p. 100).

Source: KMS, BoM& CSIRO, 2015.

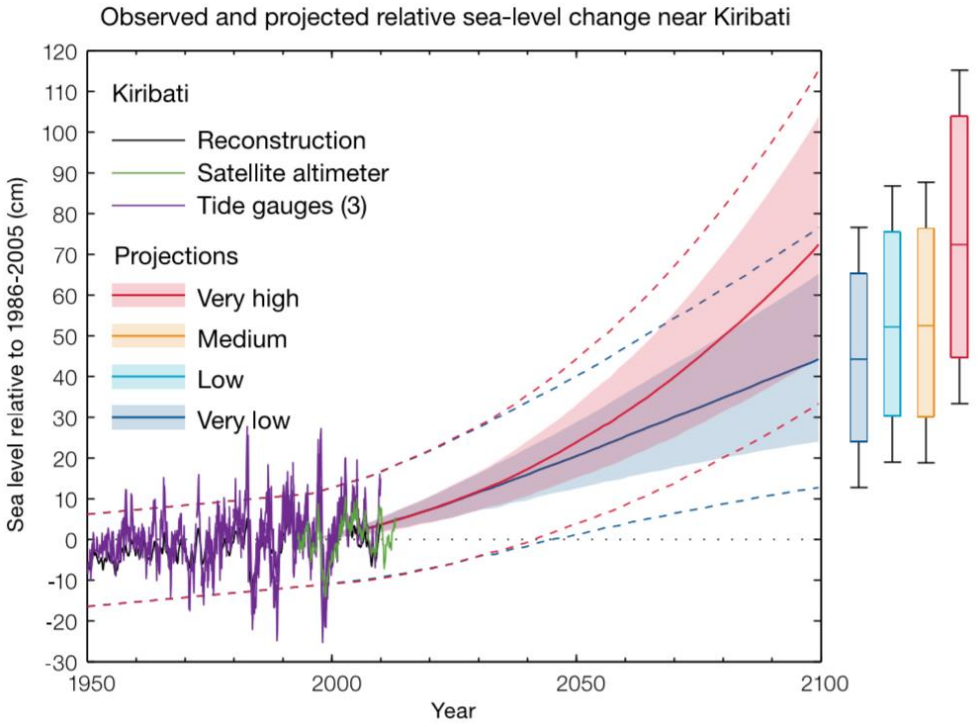

Figure 7. Observed and projected sea level change in Kiribati relative to 1990 levels

Tide gauge records of relative sea level (since 1950) are indicated in purple, and the satellite record (since 1993) in green. The reconstructed sea level data in Kiribati (since 1950) is shown in black. Multi-model mean projections from 1995 to 2100 are given for the very high (red solid line) and very low emissions scenarios (blue solid line), with the 5–95 per cent uncertainty range shown by the red and blue shaded regions. The ranges of projections for the four emissions scenarios by 2100 are also shown by the bars on the right. The dashed lines are an estimate of year-to-year variability in sea level (5–95 per cent uncertainty range about the projections) and indicate that individual monthly averages of sea level can be above or below longer-term averages.

Source: KMS, BoM & CSIRO, 2015.

2.1.2 Projections Based on Global Models

The projections for the climate of Kiribati in future presented here are based on up to 24 global climate models for up to four emission scenarios: very low (RCP 2.6); low emissions (RCP 4.5); medium emissions (RCP 6.0); and very high (RCP 8.5). They are also given for four 20-year periods centred on 2030, 2055, 2070 and 2090, relative to a 20-year period centred on 1995 (see Figure 6, Tables 3, 4 & 5). There is no single projected climate future for Kiribati, but rather a range of possible futures. Projections represent an average change over either the whole of Kiribati or over smaller but still broad geographic regions such as the Line Group. However, projections are not for specific locations such as towns (KMS, BoM & CSIRO 2015).

The projections listed in Table 3 are presented along with confidence levels based on expert judgement by scientists who conducted the analysis. The levels range from very high, high and moderate to low confidence.

Table 3. Climate projections for Kiribati over the 21st century

CLIMATE VARIABLE	PROJECTED CHANGES
Air temperature	Surface air temperature will continue to increase (very high confidence). Under a high emission scenario (see also Table 3): • Annual and seasonal mean temperature will increase by 0.6–1.2°C for the Gilbert Islands and by 0.5–1.2°C for the Phoenix and 0.6-1……1^{0} C Line Islands by 2030 (high confidence). • Annual temperature increases could be greater than 3°C by 2090 (moderate confidence). (As there is no consistency in projections of future ENSO activity, it is not possible to project interannual variability in temperature.)
Sea surface temperature	Sea surface temperature will continue to increase (very high confidence): • Sea surface temperatures will increase by 0.6–0.8°C by 2035 and by 1.2–2.7°C by 2100 (Bell et al., 2011). (As there is no consistency in projections of future ENSO activity, it is not possible to project interannual variability in sea surface temperature.)
Rainfall	Rainfall patterns will change: • Wet season, dry season and annual average rainfall will increase in the Gilbert Group and lower in the Line Group (high confidence). • Annual and seasonal mean rainfall will increase (>5 per cent) by 2030. The majority of models simulate a large increase (>15 per cent) by 2090 (low confidence).
Extremes	There will be more extreme rainfall and very hot days: • The intensity and frequency of days of extreme heat and warm nights will increase, and cooler weather will decline (very high confidence). • The intensity and frequency of days of extreme rainfall will increase (high confidence).

CLIMATE VARIABLE	PROJECTED CHANGES
Drought	The incidence of drought will decrease (moderate confidence): • In the Gilbert, Phoenix and Line Islands mild drought will occur approximately seven to eight times every 20 years by 2030, decreasing to six to seven times by 2090 (low confidence). • The frequency of moderate drought is projected to decrease from two or three times every 20 years by 2030 to once or twice by 2090 (low confidence). • Severe drought will occur approximately once or twice every 20 years by 2030, decreasing to once every 20 years by 2055 and 2090 (low confidence).
Sea level	Mean sea level is projected to continue to rise (very high confidence): • Mean sea level will rise by approximately 7–17 cm by 2030 and 38–87 cm by 2090 under the higher emissions scenario (moderate confidence; see Table 5 and Figure 7). • Interannual variability of sea level will lead to periods of lower and higher regional sea levels. • In the past, this interannual variability has been about 23 cm (5–95% range), after removal of the seasonal signal (see dashed lines in Figure 6) and it is likely that a similar range will continue through the 21st century. • The sea level rise combined with natural year-to-year changes will increase the impact of storm surges and coastal flooding. • Scientists warn that due to the melting of large ice sheets such as those in Antarctica and Greenland, rise could possibly be larger than predicted. But currently not enough is known to make predictions confidently.
Ocean acidification	The acidification of the ocean will continue to increase (very high confidence): • Recent modelling suggests that under RCP 2.6, CO_2 concentrations are expected to be around 450 ppm by 2100, where pH will likely be between 7.9 and 8.1, an average decline of 0.07 pH units from present-day mean ocean pH in most tropical oceanic waters (Gattuso et al., 2015). • For medium- to high-emission scenarios (RCP 4.5, 6.0, and 8.5), ocean acidification poses far more risks to coral reefs. For example, under RCP 8.5, a decline of 0.33 units of pH is expected by 2100 (Gattuso et al., 2015), which would seriously threaten corals and other calcifying organisms. • Coral reefs are projected to degrade progressively, with losses of live coral of > 25% by 2035 and > 50% by 2050 due to rising sea surface temperatures and more acidic oceans (Bell et al., 2011).

Source: KMS, BoM& CSIRO 2011; Bell et al. 2011.

Table 4. Climate change projections of parameters

PARAMETER (RELATIVE TO 1990 BASELINE)	YEAR			
	2025	2050	2075	2100
Temperature (mean in °C)	28.5–29	29–30.3	29.7–32	30–33
Precipitation (mean in mm)	2,171–2,322	2,338–2,714	2,540–3,252	2,683–3,702
Sea level rise (mean in cm)	15–18.5	26–40.5	38–70	50.6–107

Source: Warrick et al., 2013.

Table 5. Climate change projections of variables with different emission scenarios: Climate variable and emission scenario

	TIMEFRAME			
	2030	2050	2070	2090
Projected changes are given for four 20-year periods centred on 2030, 2050, 2070 and 2090, relative to a 20-year period centered on 1995.				
Very low emissions	0.7 (0.4-1)	0.9 (0.6-1.5)	0.9(0.5-1.4)	0.9 (0.6-1.5)
Low emissions	0.8 (0.4-1.2)	1.1 (0.6-1.7)	1.4 (0.8-2.1)	1.6 (1.1-2.5)
Medium emissions	0.7 (0.4-1)	1 (0.7-1.6)	1.5 (0.9-2.3)	1.9 (1.1-2.9)
Very high emissions	0.9 (0.6-1.2)	1.5 (1-2.2)	2.3 (1.5-3.5)	3.1 (2.1-4.5)
Sea level rise in cm.				
Very low	12 (7-17)	21 (13-29)	31 (18-44)	40 (23-59)
Low	12 (7-16)	22 (13-30)	33 (20-47)	46 (27-66)
Medium	11 (7-16)	21 (13-29)	33 (19-46)	47 (28-67)
Very high	12 (7-17)	24 (16-33)	40 (26-56)	61 (38-87)

Source: CSIRO 2014

2.2 HAZARD PROFILE FOR KIRIBATI

Traditionally disaster plans have focused on *acute impact events*, categorised as either "natural" or "anthropogenic." However, *chronic events* that result from social, economic and environmental pressures have the potential to be as damaging to sustainable development and community vulnerability as acute impact events.

The National Disaster Risk Management Plan (NDRMP, GoK, 2012b) identifies the following acute impact events threatening Kiribati that arise from natural sources.

2.2.1 Inundation

As a result of ENSO and MJO events, Tarawa already experiences significant natural fluctuations in sea level of about 0.5 metres. These fluctuations will affect the inundation potential of the atoll, particularly when combined with storm surges and the projected increase in sea level. Low-lying places along the atolls have already experienced this.

Inundation is also experienced in most islands of Kiribati when an active MJO within the Western Pacific region coincides with an El Niño event (e.g., Tropical Cyclone Pam and Tropical Depression Bavi).

Storm surges have been experienced as well due to strong low-pressure systems that were nearing the Kiribati borders. A number of houses were washed away at Marakei in 2008, providing an example that needs to be considered even though the low-pressure systems that produce cyclones do not affect the country. In February 2019, infrastructure and properties were severely damaged in Tamana and Arorae by a storm surge that was caused by an active low-pressure (tropical depression) system that developed near the southern islands in Kiribati and which later moved southward to the Fiji Islands, where it fully developed into Tropical Cyclone Mona. This shows that we are vulnerable to even just the tails of cyclones occurring or developing in neighbouring countries.

2.2.2 Tsunamis

The following general background information provides an overview of potential sources of tsunami threat, and the history of tsunamis in Kiribati. It is not, however, a comprehensive picture of the tsunami hazard and vulnerability for Kiribati. The dispersed nature of the islands and the features of the seabed within the archipelago mean that exposure to tsunamis and their possible impacts are likely to vary from island to island and between island groups.

Tsunami risk modelling and the limited historical records of tsunami events would suggest Kiribati has a lower tsunami risk relative to other Pacific Island countries and territories closer to subduction trenches, where earthquakes with the potential to generate tsunami can occur. Although the Kiribati population and government have had no direct experience with tsunami impacts, they are aware of the susceptibility of low-lying atolls to rising sea levels associated with climate change and of the potential for tsunami impact.

Historical stories collected revealed that unusual historical sea behaviour may provide anecdotal evidence of tsunami. Felt earthquakes caused a cracked reef and large rocks deposited on two islands by a series of three “magic waves” to southern islands (Tamana and Makin) and eastern islands (Kiritimati) facing tsunami risk.

Thomas, Burbidge and Cummins (2007) used scenarios for 8.5 Moment Magnitude (Mw) and 9.0 Mw earthquakes to investigate normalised offshore (to a notional depth of 50 metres) wave amplitudes for tsunami caused by earthquakes along subduction zones (see Figure 2 in Section 1.3.1). In this study, Kiribati’s maximum amplitude for all tide gauges for all Mw 9 tsunami was 99 cm, with the most significant source region being Peru (amplitude greater than 75 cm at 50 m depth or single most significant source region if no amplitude exceeds 75 cm). For an Mw 8.5 tsunami the maximum amplitude declined to 49 cm, but Peru still remained the most significant source region.

The southern end of the South Solomon trench poses a threat to the eastern end of the Gilbert Islands. Only events of very large magnitude pose a significant threat. The islands have not experienced a measurable tsunami from this source in the past 20 years. The central section of the New Hebrides trench and the northern half of the Tonga trench pose some limited threat to Kiribati. Although the tsunami energy is not anticipated to be directed specifically at the island groups, side lobe energy may result in detectable events. The last event detected in Tarawa that originated in the New Hebrides trench was in 1994. The Tarawa sea level gauge has shown no records of tsunami impacting from the Tonga trench.

Since 1994 there have been three small events detected at the Tarawa sea level gauge from the Kuril and Japan trench. These were 8.3 Mw events on 4 October 1994 and 15 November 2006 and a 9.0 Mw event on February 2012. Two events in 1994 and 2006 resulted in waves less than 10 cm in height, while the 2012 event resulted in a height of 20 cm recorded at the Tarawa tide gauge. Most recently, Kiribati has been placed under a “tsunami warning” by the Pacific Tsunami Warning Centre.

2.2.3 Drought

During La Niña events, the South Pacific Convergence Zone, which is associated with enhanced cloudiness (high rainfall), is shifted southwest of its normal position (away from the southern islands in Kiribati). As a result, cloudiness is reduced, particularly over Nauru and western Kiribati. La Niña has historically been related to less precipitation (rainfall), and sometimes to drought, in the Kiribati region. In contrast, some parts of the Pacific such as Australia experience high rainfall during La Niña episodes.

Past La Niña events have shown that the impacts of droughts can be very severe in Kiribati. For example, in 1971, 1985, 1998 and 1999 annual rainfall was less than 750 mm. The drought from April 2007 to early 2009 severely affected the southern Kiribati islands and Banaba. The recent drought from April 2018 to March 2019 severely affected groundwater. During this period, groundwater turned brackish and the leaves of most plants turned yellow (e.g., breadfruit trees around South Tarawa and outer islands, especially islets) (KMS 2019). Copra production, the main income source for people in the outer islands, declined. During the 1970–1971 drought, a complete loss of coconut palms was reported at Kenna village on Abemama in central Kiribati (KMS, BoM& CSIRO, 2011).

2.2.4 Epidemics

Epidemics that have threatened the Kiribati population include severe acute respiratory syndrome (SARS) in 2002–2004 and H1N1 (“swine flu”) in 2009. Both epidemics had a global impact, to which the Kiribati authorities responded by strengthening border control.

Other epidemics have a stronger relationship with climate change, such as water-, food- and vector-borne diseases, and are expected to increase because of climate change.

2.2.5 Maritime Disasters

Maritime disasters are frequent in Kiribati due to the vastness of the ocean separating the islands as well as the population’s heavy dependence on marine resources for daily food needs.

With weather extremes becoming more severe due to climate change, Kiribati is at high risk of experiencing more intense storms and wave events, extreme rainfall, sea level rise along with increased temperatures and associated inundations and damage to buildings and infrastructure, plagues and epidemics, coastal erosion as well shortages of food and fresh water.

The impacts of all these hazards on Kiribati’s economy, environment and livelihoods are analysed in Section 2.3.

2.2.6 Flooding

South Tarawa and other islands in the Gilbert Group experienced flooding throughout December 2018 and January 2019, with a rainfall accumulation of 292.6 mm. It was reported that this is the highest ever recorded for South Tarawa and other islands in the Gilbert Group. Extensive seawater flooding in low-lying areas was also experienced and reported from Tamana, Arorae and later from Onotoa, Beru, Nikunau, Tabiteuea North and South. This event cost approximately AUD 700,000 in immediate remedial and recovery actions. However, additional costs for further processes and activities for this issue have not yet been reported.

2.3 VULNERABILITY AND IMPACTS

The social, economic and environmental ramifications of the observed and projected climatic changes and hazards presented above are amplified when overlaid with the vulnerability of the I-Kiribati people and their environment. This is reflected in Kiribati's status as a least developed country under Annex 6 of the Cotonou Agreement and in its 11th out of 14 rankings on the Pacific Human Development Index.

The following factors contribute to the nation's vulnerability to climate change and disaster risks, which apply across the various sectors:

A high population and growth rate on South Tarawa in the Gilbert Group (50,182 inhabitants with a population density of 3,184 persons per square kilometre) as well as on Kiritimati in the Line Islands Group (10,503 inhabitants) (GoK, 2015), which is due to: a high relative proportion of children and youth; high levels of fertility; low rates of contraceptive use; and disparities between the different islands of Kiribati (resulting in internal migration, displacement, and urbanisation) (GoK, 2012c; KNSO, 2015).

In fast-growing urban areas, especially South Tarawa with a growth rate of 2.3 per cent and to a certain extent also North Tarawa and Kiritimati (KNSO, 2015), the population pressure and lifestyle changes have strained the already limited freshwater resources. In many areas, freshwater consumption rates are already exceeding the estimated sustainable yield of groundwater sources (such as in the Bonriki and Buota Water Reserves on South Tarawa).

The increase in non-biodegradable waste production in urban areas (as well as poor waste and sanitation management) results in limited access to unpolluted land and sea, degradation of land and ocean-based ecosystems, and numerous isolated occurrences of diarrhoeal and vector-borne diseases.

Traditional food systems are declining in favour of imported food, and the number of people who preserve and apply traditional knowledge is decreasing.

In rural outer islands, the people have limited access to employment opportunities, effective transport, communication, and community services such as education and health. These factors, combined with a high dependency on subsistence agriculture and coastal fisheries, make rural communities more vulnerable.

Government programmes, decision-making processes and budgets are centralised, with decision bottlenecks at all levels from national to local. The public finance management, reporting and monitoring system has been reviewed, and changes are being implemented to meet development partner requirements for budget and sector-wide support. The development of an Island Council Strategic Plan will enhance the planning, budgeting and monitoring functions at the local government level.

There are institutional challenges, such as high staff turnover rates in senior executive positions, limited sector-specific training, and a lack of clarity on internal roles and responsibilities. Furthermore, there are constraints on knowledge sharing, coordination and collaboration among ministries as well as with NGOs, the private sector, FBOs and development partners. Yet, with the creation of the MWYSSA there are increased opportunities for the community, especially women and youth, to participate in broader governance.

There are knowledge, skill level and capacity gaps regarding climate change adaptation and disaster risks throughout Kiribati society, particularly in the outer islands and among marginalised populations. A key challenge is to translate climate science and predicted impacts into messages that the I-Kiribati population can relate to. In some instances, there are cultural and religious barriers to awareness and action, such as cultural practices of guarding traditional knowledge and religious beliefs.

Many laws do not take into account sustainable management concerns, climate change predictions and disaster risks. Laws relevant to these topics need to be reviewed in order to mainstream such issues.

The safety and emergency response capacities of Kiribati are limited. However, with the implementation of the NDRMP, issues such as a lack of a dedicated marine rescue service, the inaccessibility of densely populated areas on South Tarawa for fire trucks, and the lack of evacuation plans for emergencies, will be addressed.

The low-lying atoll islands are already experiencing severe coastal erosion and inundation due to natural and human causes, leading to a loss of land, public and private buildings, and infrastructure. The Environmental Impact Assessment under the Environment Act may need to be enforced on major projects throughout all of Kiribati's islands. This would help curb the removal of mangroves and mining of sand and aggregates that contribute to erosion.

In the long term, the most serious concern is that sea level rise will threaten the very existence of Kiribati as a nation. But in the short to medium term, a number of other projected impacts are of immediate concern. Of particular note is the question of whether the water supply and food production systems can continue to meet the needs of the rapidly increasing population of Kiribati.

The effects of climate variability and change are felt first and most acutely by vulnerable and marginalised populations, including women, children, youth, people with disabilities, minorities, the elderly and the urban poor (GoK 2012c; Burton, et al., 2011). For example, because women tend to have less access to resources such as cash, income and vehicles, they have fewer options in responding to the negative impacts of climate hazards. Importantly, I-Kiribati women are not a homogenous group. Gender intersects with other sociocultural characteristics such as race, ethnicity, disability, sexual orientation and age. For example, elderly women living on their own may have limited mobility and require the support of others in the community.

In Kiribati, it is common to find significant differences between men and women in their roles and responsibilities, daily activities, and access to resources (e.g., control over household income). Thus, they tend to be affected to varying degrees by climate hazards and also tend to respond differently based on their specific skills and talents. As a result, I-Kiribati men and women also often have different needs, opportunities and capacities related to climate adaptation. Recognising and addressing these differing needs and vulnerabilities is essential to reducing all peoples' vulnerability to climate hazards.

For example, when disaster strikes, men may be expected to secure property and infrastructure, sometimes under threat of injury in a precarious situation such as flood waters or high winds. Women on the other hand, may bear a disproportionate burden of care for children and sick family members.

Examples of impacts specific to women can be observed in the following impact chains:

- Drought > reduced access to quality groundwater for drinking, washing, cooking and gardening > women need to fetch water with children at longer distances (mostly younger men) > increased women's workload at home > reduced agricultural production from gardening > reduced women's income from selling food items / reduced girls access to education > reduced access to nutritious foods (vegetables and fruits) affecting health of children and mothers > increased tensions within the family.

- Floods, storm surges > reduced access to pandanus trees > reduced women's income from selling handicrafts > impacts on food security.

- Increased temperature/heat waves > increased risks of vector- and water-borne diseases > increased family illnesses > increased burden of care on women > potentially reduced capacity to engage in economic activities > lower levels of economic empowerment.

The I-Kiribati society is already facing stresses due to the uncertainty over their livelihoods, culture and homeland (GoK, 2012c). Rapid changes in lifestyle can be observed (e.g., growth of substance abuse and gambling, erosion of the "bubuti" system especially in urban atolls, loss of traditional knowledge and change in diets). Climate variability and change can further exacerbate existing vulnerabilities. For example, violence against women and children is a widespread issue within Kiribati society, which can be exacerbated in times of disaster when normal social protections may be missing.

Increasing temperatures also heighten the risks posed by climate-related events, which as a result increase both in intensity and frequency (IPCC, 2018b). The resulting shocks and stresses represent a burden for the environment and the economy, further exacerbating their vulnerabilities.

Climate variability and change (in combination with the factors that make Kiribati particularly vulnerable to them) are affecting the environment and all socioeconomic sectors, including agriculture, education, fisheries, fresh water, health, infrastructure, trade and commerce. For an overview of sector-specific sensitivities and existing and potential future impacts in relation to climate change and disaster risks, see Tables 5 to 12.

Table 6. Sensitivity and impacts – environment

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
• Low-lying atolls with limited land-based natural resources and biodiversity. High dependency on and demand for coastal and marine resources. • Narrow and low-lying land, climate variability influencing ocean characteristics and components, thin underground freshwater lens. • Negative impact of poorly designed infrastructure on the environment due to lack of capacity, understanding natural processes and resources; e.g., seawalls causing erosion or causeways harming marine habitats. • Mining of beach sands and aggregates. • Pests and invasive species. • Low level of communication, education and public awareness and lack of priority given to conservation and management of biodiversity including habitats at all levels. • Low level of budget allocation and integration of climate change, disaster risk management, gender, environmental conservation and biodiversity management considerations in development strategies. • Limited capacity for integrated assessments of risks, including gaps in enforcement of environmental impact assessments, cost–benefit analyses and feasibility studies.	• Increasing coastal inundation, erosion and loss of land. • Increasing loss of island biodiversity on land and at sea and degradation of important habitats (such as mangroves, coral reefs). • Increasing environmental degradation and vulnerability of marine and terrestrial ecosystems and habitats to the additional stressors caused by climate change and hazards. • Increasing outbreaks of invasive species, pests and diseases. • Increasing water-, food- and vector-borne diseases. • Potentially high environmental costs of development or private sector projects that have yet to fully consider environmental and possible disaster and climate change impacts. • Salinisation of groundwater lens and decline in size of groundwater lens.

Sources: GoK, 2012c; MELAD ECD, 2006; MELAD, 2007; Elrick & Kay, 2009; KJIP Consultations, 2013

Table 7. Sensitivity and impacts - economic development, trade and commerce

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
• Limited employment opportunities in-country and overseas, especially for youth, women and their families. • Lack of access to capital and land for private sector development. • Business environment is not conducive to investment due to excessive licensing and tariffs in current government service regulations and outdated laws. • Increasing trade deficit. • Increasing household hardship and rates of poverty. • Potential of oceanic tuna fisheries not fully capitalised for private sector development. • No insurance coverage is available for certain natural hazards i.e., erosion, loss of land, inundation and flooding (Kiribati Insurance Company). Also, there are gaps in obtaining existing insurance (such as fire). • Low levels of financial literacy and gaps in training on business development. • State-owned enterprises (which get government subsidies) benefit from unfair competition with private sector. • Cultural barriers to conducting business: property and wealth traditionally belong to the community whereas private sector business development is building on individualistic profit principles. • Low-quality and insufficient numbers of local private vessels that provide outer islands with basic food and other commodities. • Private businesses sell low-quality imported food and equipment with short life-cycles.	• Decline in remittances and GDP, thus limiting capacity to reduce vulnerability and increasing hardship and poverty. • Outbreaks of fire are threatening businesses in urban areas, especially as fire trucks cannot access densely populated areas. • Economic losses due to damage caused by fire, erosion, loss of land and flooding. Small retailers might also have to close down. • Decreasing investment from overseas. • Economic losses for small and medium-sized enterprises (e.g., in artisanal fisheries, agriculture, handicrafts and food processing) due to decreased productivity of agriculture and coastal fisheries, which in turn increases hardship and poverty. • Bad weather conditions (such as heavy storms) cause delays of freight ships to Tarawa and smaller trade vessels to outer islands, leading to shortages in basic food commodities (sugar, rice, flour) and economic losses. • Coral bleaching will make Kiribati less attractive to tourists and foreign investment in the tourism sector.

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
• Negative messages on the impacts of climate change (e.g., “Kiribati is sinking”) affecting investment.	

Sources: GoK, 2012c; MFMRD, 2013; Erick & Kay, 2009; KJIP Consultations.

Table 8. Sensitivity and impacts – infrastructure

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
• Costs of construction are high, with most materials, tools and equipment needing to be imported and transported long distances. • Lack of financial resources needed to maintain key infrastructures such as causeways, seawalls, buildings, government houses, health clinics and schools. • The salty, humid and hot environment leads to rapid deterioration of equipment, while lack of funds means that much plant and machinery is being used beyond its planned economic life. • Infrastructure such as causeways, seawalls, buildings, government houses, health clinics and schools are sometimes built very close to the sea (both South Tarawa and outer islands). • Causeways and other coastal infrastructure often do not take into account their potential negative impact on marine ecosystems and coastal fish productivity. • Lack of access to environmentally safe aggregates and increasing practice of beach mining carried on by individuals, households, communities and building contractors. • Conflicts around land ownership and demarcation.	• Increasing loss of usable land and existing investments. • Increasing destabilisation of beaches contributes to erosion (especially in South Tarawa, but potentially also other islands except Banaba). • Increasing risk of damage and/or loss of major transport facilities (airport, ports). • Increasing costs and challenges for maintenance. • Increasing risk of damage to government property, with negative impacts on basic services (hospital and health services, school and education, government housing). • Increasing damage and interruption to roads, causeways and bridges, which might lead to isolation of communities, increased risk of accidents and increased costs for maintenance and repair of cars and road transport. • Increasing risk of damage to civil society and cultural facilities (private schools, NGOs, churches, Maneaba). • Increasing damage to services i.e., water mains, sewerage and electricity. • Increasing conflicts among private landowners if private buildings have to be relocated. • Increasing conflicts between private landowners and government about land demarcation if public infrastructure and buildings such as schools have to be relocated.

Sources: GoK, 2012c, 2013; Elrick & Kay 2009; KJIP Consultation, 2013.

Table 9. Sensitivity and impacts – fresh water and sanitation

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
• Availability of drinking water is inadequate. • In urbanised areas with high population growth, demand for fresh water is growing. • Lack of information on or systematic monitoring of the microbiological quality of water supplies, especially on rural outer islands. • Industrial contamination, particularly leaking hydrocarbons from diesel power generators. • Despite regulations, encroachment is a continuing threat to water reserves especially in South Tarawa, Banaba and Tabakea. • Lack of involvement of local landowners in management of water reserves. • Reduced freshwater quality impacting on traditional women's domestic responsibilities (i.e., cooking, washing, bathing children and elders, fetching potable water, etc.). • Increased temperatures can increase risk of water-borne (and vector-borne) diseases. • Lack of regulations for protecting water sources in rural areas or outer islands. • Traditional practices of defecating on the beach cause algal bloom and ultimately can lead to health problems. • Risk of plume of sewage from the Betio outfall to enter into the lagoon, and some households on South	• Continued and increasing contamination of groundwater. • Increasing water-borne illnesses and high infant mortality rates. • Increasing socioeconomic costs of water-borne illnesses (loss of family members, work absences and general lack of well-being). • Continuous and increasing tensions and conflicts between affected communities and the government because of declaration of water reserves over privately owned land, leading to costly ongoing disputes and vandalism of water infrastructure and groundwater monitoring boreholes. • Increasing risks of contaminating the Tarawa lagoon with sewage, with impacts on health of people and the marine habitat. Increasing pressure on women and their families from reduced access to freshwater. • Women bear the burden of care for family sickness; impacts that are exacerbated as a result of increased risk of water-borne disease with increased temperatures. • Frequent, long and severe droughts occurred regularly in the past (e.g., in South Tarawa and Banaba) causing severe shortages of fresh water and dramatic increases in salinity in domestic wells, death of some trees and dieback in others, and increasing demand for potable, reticulated water. Some islands were temporarily abandoned. It is still unclear, though, if and how the

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
Tarawa are not connected to the sewerage system. • Cultural sentiments against composting toilets.	frequency and intensity of La Niña events will change. • Increasing risks that the sea will overtop parts of or even whole islands, causing salinisation of some fresh groundwater.

Sources: Falkland, 2011; GoK, 2008a, 2008b; KJIP consultations, SOPAC et al., 2007; SPC, 2015; White, 2010; White et al., 1999, 2012;

Table 10. Sensitivity impacts – fisheries and food security

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
• High dependence on coastal fisheries for subsistence (main protein source). • Diminishing stocks of reef fish, especially for lagoon and coastal fisheries in South Tarawa, due to population pressure and associated socioeconomic and environmental problems. • A lack of understanding of actual fisheries stock that will make it more difficult to set foreign fishing fees for the future. • Bycatch of commercial oceanic tuna fisheries remains unused for food or for generating income. • Coastal fisheries are largely unregulated, with existing management arrangements focusing only on licensing revenue and island councils tending to discuss fisheries only in the context of infrastructure concerns (e.g., lights, wharves). • Design and building of causeways and other coastal infrastructure often do not take into account their potential negative impact on marine ecosystems and coastal fish productivity. • While women dominate marketing and sales of fish and are engaged in shore-based harvesting and gleaning for marine resources, they are not granted the same status or public recognition as fishermen. • Trans-shipment activities in Tarawa have exacerbated alcohol abuse	• The productivity for coral reef fish and invertebrates is projected to decline by 20 per cent by 2050 due to both the direct effects (e.g., increased sea surface temperature) and indirect effects (changes to fish habitats) of climate change. Population growth is further reducing the potential supply of reef fish per person. • Higher water temperatures and rainfall and/or increased ocean acidification are expected to progressively reduce the efficiency of culturing seaweed, giant clams, pearl oysters and sea cucumbers. • Possibly increased incidence of ciguatera fish poisoning, shellfish contamination and algal blooms. • Changes to the distribution and abundance of tuna: Concentrations of skipjack tuna will likely be located further to the east than in the past (potentially beneficial). • Kiribati tuna-based revenue improves during El Niño years but drops during La Niña years. • Sea level rise will progressively convert large areas of intertidal lagoon habitat in Kiribati to subtidal areas, with uncertain effects on the shellfish population. • Mixed trends in aquaculture: Milkfish farming in earthen ponds is expected to be favoured by higher air temperatures and increased rainfall, but the effects of sea level rise are yet to be determined. • Potentially increased damage to infrastructure: More powerful storms, inundations and potential tsunami can damage wharves and essential infrastructure. This may also increase

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
and increased the incidence of prostitution involving young women and teenagers. • Periodic outbreaks of ciguatera, shellfish contamination and algal blooms. • Gaps in monitoring of ciguatera outbreaks, other outbreaks and coral reef bleaching and collaborative actions with the Ministry of Health and Medical Services (MHMS).	financial risks for coastal aquaculture due to more frequent damage to equipment. • Potential increase in social problems such as conflict between subsistence fisheries and commercial fishers over declining fish stocks and the risk of more prostitution and higher HIV rates with increased trans-shipment. • Loss of traditional fishing skills and knowledge if marine habitats change and also due to lifestyle changes. • Potential discouragement of future national and overseas investors.

Sources: MFMRD 2013; Bell et al. 2011; KJIP consultations 2013

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Table 11. Sensitivity and impacts – agriculture and food security

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
• Harsh agricultural conditions due to small and remote atoll islands with poor soil conditions, high salinity and limited groundwater supply. • Limited crop and genetic diversity. • Crop farming mostly for subsistence (trade and export limited to coconut products: oil and copra). • High dependency on imported basic food commodities, with low-quality issues and public outcries when shortages occur (especially rice, sugar and flour). • Lack of national food standard and quality policy. • Supply constraints of agricultural produce and production level especially in the outer islands. • Imported equipment and tools are expensive and of poor quality. Lack of vocational and academic training in agriculture. • Loss of traditional agroforestry systems. • Limited choices of livestock species for production, poor housing conditions and high imports of livestock products. • Animal waste is polluting coastal land, contaminating underground water and transmitting diseases and parasites to humans. • Rundown livestock and agriculture facilities and challenges in the distribution system at the Agriculture and Livestock Division (Tanaea). • Urban migration.	• Increasing risks that the sea will overtop parts of or even whole islands, causing salinisation of some fresh groundwater, destruction of infrastructure and the death of crops and livestock. • Decline in production of food crops (already observed) due to increase in salinity, extreme weather events, spread of pests and diseases. • Reduced livestock productivity due to heat stress, increased disease susceptibility, lack of fresh water, water-borne diseases, decrease in production of feed, potential damage to livestock infrastructure, inundation. • Diseases will interact with climate hazards to manifest in different ways. Some current disease problems will be exacerbated due to stress and nutrition-related immune challenges. Shifts in vector populations will change disease prevalence in different areas. • Loss of traditional agriculture skills and knowledge. • Poor nutrition and malnutrition. • Increase in noncommunicable diseases due to change of diet.

Sources: KJIP Consultations; MELAD-ALD, 2012; MELAD-ALD, SPC & GIZ, 2013; MELAD ECD, 2007 .

Table 12. Sensitivity and impacts – health

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
• Existing high levels of diarrhoeal diseases, infant mortality and malnutrition among children and the elderly. • Inefficient distribution of fresh water. • Unprotected sources of drinking water (especially wells). • A large proportion of households use the beach, bush, lagoon and sea for toileting. • Difficulties in avoiding bacterial and chemical contamination of water reservoirs: coliform counts frequently exceed World Health Organization (WHO) guidelines, in both reticulated water supplies and wells. • Difficulties in maintaining high standards of food hygiene. • Presence of breeding sites for mosquito vector (*Aedes aegypti*), including abandoned vehicles and solid waste in proximity to settlements (e.g. South Tarawa). • Changes in lifestyle, including poorer nutrition and less physical exercise, leading to a higher level of noncommunicable diseases. • Low immune status of the population and gaps in effective health care; access to health services especially limited in outer islands. • Lack of specialised knowledge to conduct health assessments/tests and treat health problems; e.g., health staff lack capacity to differentiate between food poisoning and ciguatera. • The health information system is still struggling to provide sufficient, accurate and timely information for decision making in planning, strategy and policy development. This is also true for disease surveillance and response systems, which are currently not meeting international agreed standards.	• Diminishing water safety and increase in water-borne diseases: Increasing risk of diarrhoeal diseases due to runoff following heavy rains and contamination of drinking water sources. Densely populated areas are at high risk. • Diminishing food safety and increase in food-borne diseases: As temperatures rise, the risk of enteric infections transmitted by food increases (especially illnesses caused by salmonella, campylobacter and a wide range of enteroviruses). The risk is especially high in crowded conditions. • High population density increasing risk of rapid transmission of infectious diseases. • Increase in vector-borne diseases, especially dengue fever. During warmer and wetter conditions, outbreaks increase (already observed during El Niño events and wet season). • Higher dependence on food imports with low nutritional value leads to increasing noncommunicable diseases.

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
• Gaps in data storage and monitoring and collaborative actions with Ministry of Fisheries and Marine Resources Development (MFMRD), Ministry of Environment, Lands and Agriculture Development (MELAD) and Ministry of Public Works and Utilities (MPWU).	• Increasing cost of health care.

Sources: GoK, MHMS & WHO, 2011; Hales et al., 1999; KJIP consultations, 2013.

Table 13. Sensitivity and impacts – education and human resources

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
• In primary education, the net enrolment ratio has fallen from 92 per cent to 84 per cent for boys and from 93 per cent to 87 per cent for girls between 2008 and 2010. • More than a quarter of students do not make the transition to upper secondary levels. • Gaps in the professional standards of teachers. • The Ministry of Education (MOE), Marine Training Centre (MTC), Kiribati Institute of Technology (KIT), Fisheries Training Centre (FTC), Kiribati Teachers College (KTC), schools, teachers and lecturers have insufficient capacities and resources to teach the students on matters relating to climate change (specifically on impacts and adaptation) and disaster risk management. • Lack of training for police on preparedness and response to disasters, including operation of machinery such as fire trucks. • Lack of effective early warning systems.	• General uncertainty and feelings of helplessness among the population about their country's future. • Schools, students, teachers and trainers are affected by climate change and hazards in relation to their safety, food security, access to drinking water, ability to commute and health. • School infrastructure might have to be relocated due to coastal erosion and retrofitted to withstand harsher conditions such as drought, heavy rain or heavy storms. • Increasing maintenance costs for school infrastructure (also due to salt spray and rising temperatures). • Lower rates of enrolment and secondary education limit opportunities for human resource development and employment (including overseas). • The potential loss of life and damage due to lack of early warning systems and limited capacity to cope,

SENSITIVITY	OBSERVED AND POTENTIAL IMPACTS
• Lack of disability-friendly resources on climate change and natural hazards and a lack of capacity to cope with and reduce risks among people with disabilities.	especially for vulnerable groups (such as children, people with disabilities and women).

Sources: GoK, 2012c; KJIP Consultations; MOE, 2012;

2.4 THE CURRENT STATUS OF MAINSTREAMING CLIMATE CHANGE AND DISASTER RISK MANAGEMENT IN SECTORAL POLICIES AND STRATEGIES

High political awareness and support on climate change have existed at the national level since the early 1990s. Kiribati has been outspoken about the impact of climate change at the international level. The government recognises the need for a "whole-of-government" approach to climate change with a focus on mainstreaming and coordination across sectors and scales (Republic of Kiribati, 2015). This allows Kiribati to go beyond 'project by project' approaches towards an integrated, multisectoral, programmatic approach in implementing climate change and disaster management programmes.

Climate change and disaster risks are being addressed in policies and strategies relating to a range of sectors population, water and sanitation, health, environment, energy, and more recently gender[1] to mention a few. So basically, climate change and disaster risks are mainstreamed in a whole-of-government approach that covers a range of measures from planning for risks through assessments, identifying threats, to actual implementation.

Only a few sectors have transferred strategic actions to address climate and disaster risks into their annual sector operational plans and ministerial plans of operations and budgeting. However, more importantly is that the mainstreaming process of climate change and disaster risk management provides room for sectors to be able to align their priorities with the national mainstreaming and then implement. KJIP 9 year's life span is a longer period for sectors to mainstream and implement accordingly to the national priorities of climate change action and disaster risk management.

Policies and strategies relating to human resource development, minerals and foreshore development, private sector development, investment, transport, communications, tourism and minerals do not explicitly consider climate change and disaster risks.

[1] the draft National Policy on Gender Equality and Women's Development (2017)

3. DEVELOPMENT OF THE KIRIBATI JOINT IMPLEMENTATION PLAN ON CLIMATE CHANGE AND DISASTER RISK MANAGEMENT

3.1 RATIONALE AND GUIDING PRINCIPLES FOR THE KJIP

The Government of the Republic of Kiribati initiated the process to develop a joint national action plan on climate change and disaster risk management in 2012. By identifying tangible, on-the-ground actions for resilience, along with actions the government can take to facilitate these, the plan will guide the implementation of these policies in an integrated approach.

The main rationale for this approach is that a systematic and integrated plan, identifying tangible actions, will maximise the efficiency and effectiveness of existing capacities and resources as well as ensuring new initiatives are well-targeted and have the maximum impact. In addition, the development of this plan was seen as a key vehicle for integrating climate change and disaster risks into all sectors, and promoting a whole-of-country approach that involves the cooperation of the government, civil society and private sectors.

The KJIP is also a key vehicle for linking national development priorities to climate change adaptation and then to climate finance.

In recognition of the strong need to implement existing policies and to take more (and stronger) tangible actions to increase resilience, the Government of the Republic of Kiribati decided to call this action plan the Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management (KJIP) and agreed on the following principles:

- The KJIP is to reflect the National Framework for Climate Change and Climate Change Adaptation (NFCCCCA) and the National Disaster Risk Management Plan (NDRMP) and relevant sector policies and strategies of line ministries, and identify actions for implementing them.
- The KJIP has to align to rules and procedures that the Government of the Republic of Kiribati must follow.
- Long-term consequences of climate change must be considered.
- Because climate change and disasters have negative impacts on the welfare of I-Kiribati, the process needs to be consultative and inclusive of all people, including the most vulnerable and the outer island population.
- The KJIP is to be based on priorities identified during the development phase, reflect country priorities and build on ongoing initiatives.
- Governance of the KJIP should be both gender-inclusive and inclusive of all key stakeholders including the private sector and civil society given, their critical role in the planning and implementation processes.

- Women should be recognised as a distinct stakeholder group in the implementation process, and reporting on the KJIP should be able to demonstrate how women have influenced the planning and implementation process.
- To build resilience the KJIP needs to be implemented in the next 10 years or so.
- Priorities may change over time; hence regular reviews through a sound monitoring and evaluation framework are important.
- Adaptation to climate change is a long-term and ongoing task for Kiribati; hence, after the current KJIP has been implemented and a final evaluation has been conducted, a follow-up plan should be developed.
- The KJIP should enhance and strengthen the sense of ownership by the government, private sector, FBOs, NGOs and communities.

It is expected that as part of the process of developing and implementing the KJIP:

- Required funds and resources for climate change and disaster risk management priority actions will be identified and planned, and required budgets allocated.
- Access to financial resources and technical assistance will be increased.
- Local capacities will be built (and technologies transferred) to plan, write and cost proposals and monitor implementation.
- Roles and responsibilities of all stakeholders will be clarified, collaboration and coordination enhanced and the competition for resources reduced.
- National, sectoral and community priority actions to cope with climate change and reduce disaster risks are communicated inside and outside the country.

In line with the Framework for Resilient Development in the Pacific 2017–2030 (FRDP), the Kiribati Development Plan, and the National Policy on Gender Equality and Women's Development, gender equality shall be one of the key guiding principles of the development and implementation of the KJIP.

3.2 KJIP IN THE CONTEXT OF NATIONAL DEVELOPMENT PRIORITIES

The Kiribati Development Plan (KDP) is the overarching national development plan detailing national priorities (GoK, 2012c). It sits alongside the Kiribati 20-Year Vision 2016–2036 (KV20) which provides the long-term vision for Kiribati's development. The KDP is linked to the Sustainable Development Goals, the Pacific Plan and the Mauritius Strategy for Small Island Developing States (BPoA+10).

The KDP has six broad key policy areas (KPAs). Climate change is broadly incorporated into KPA 4 on the environment, providing the link to the KJIP, however the CCA & DRM is seen as

a cross-cutting issue to be mainstreamed across all KPAs. The key objective of KPA 4 is to facilitate sustainable development by mitigating the effects of climate change through approaches that protect biodiversity and support the reduction of environmental degradation.

Legal functions and responsibility for climate change adaptation, disaster risk reduction, and disaster responses and management continue to be vested in various agencies, as determined by national legislation. However, some laws need to be adjusted to enable agencies to respond effectively to the impacts of climate change and disasters.

The KJIP contributes to the realisation of the KDP outcomes and provides the implementation plan for the NDRMP (2012) and Climate Change Policy. Figure 8 shows how it links to these and other national frameworks.

The KJIP is leading in advocating and operationalising an integrated approach to including climate change and disaster risks in national and community development planning, implementation, monitoring and evaluations.

The Government of the Republic of Kiribati sees the KJIP as a means to prioritise actions on climate change and related disaster risks that are highlighted in national communications (see also Chapter 3.3) and sector policies and action strategies impacted by climate change and disaster risks.

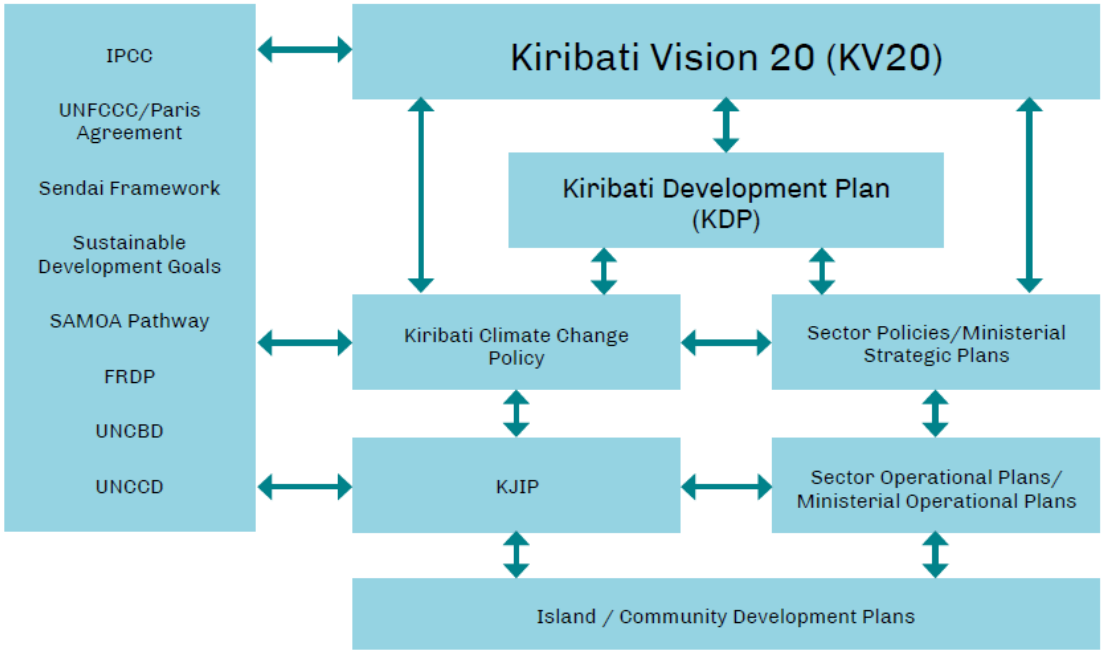

Figure 8. Linkages of the KJIP to national frameworks

3.3 KJIP LINKAGES TO RELEVANT REGIONAL AND INTERNATIONAL FRAMEWORKS

This KJIP is part of the commitments Kiribati made under the Pacific Islands Framework for Action on Climate Change (PIFACC), the Regional Framework for Action on Disaster Risk Management endorsed by the Pacific Leaders in 2005 and the Pacific Islands Meteorological Strategy (PIMS) approved in 2012. The KJIP is consistent with these three interrelated regional frameworks, specifically in terms of the national priorities for actions. The KJIP is also reflecting the broad objectives of the Framework for Resilient Development (FRDP).

As a party to the United Nations Framework Convention on Climate Change (UNFCCC; ratified in 1992), the government sees the KJIP as its National Action Plan (NAP) on climate change. In 2018, the National Action Plan Global Network (NAP GN) also supported the review and revision of the KJIP to align with global good practice NAP objectives of gender inclusion, sectoral integration and vertical integration. Similarly, the KJIP is contributing to the implementation of the Hyogo Framework for Action (2005–2015) under the United Nations International Strategy on Disaster Risk Management (UNISDR) and the Climate Services priorities of the World Meteorological Organization (WMO).

The 1979 Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) acknowledges that gender equality is a universal human right. The KJIP also responds to the gender equality policy imperative established at the regional and international levels, and in particular:

- The Framework for Resilient Development in the Pacific 2017-2030 (FRDP), by promoting equal participation of women and men in climate change and DRM initiatives and governance.
- The Pacific Leaders Gender Equality Declaration, through several actions around enhanced administrative capacity, gender-responsive monitoring and reporting systems and DRM projects.
- The United Nations Sustainable Development Goals (SDGs), for example by including institutional mechanisms for gender equality, integrating gender-inclusion targets.
- The United Nations Framework Convention on Climate Change (UNFCCC), and especially the adoption of the Paris Agreement (2015) and the Gender Action Plan (2017) under the Convention, establishes a mandate to integrate gender in climate actions.

3.4 KJIP DEVELOPMENT METHODOLOGY

The Office of Te Beretitenti (OB) led the development of the KJIP. For this task, it established a Kiribati National Expert Group on Climate Change and Disaster Risk Management (KNEG), encompassing senior technical officers from core and line ministries, NGOs, the Kiribati Chamber of Commerce and Industries and other non-state actors. A Regional Support Team (RST), led by the Secretariat of the Pacific Regional Environment Programme (SPREP), supported the KNEG and the development of the KJIP. Other members of the RST were representatives of the Secretariat of the Pacific Community (SPC) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) (through the SPC/GIZ Coping with Climate Change in the Pacific Island Region program), United Nations Development Program (UNDP – Suva Office), United Nations Children's Fund (UNICEF) and Department of Climate Change and Energy Efficiency (Government of Australia).

In 2017–2018, the National Adaptation Plan (NAP) Global Network), supported the OB and KNEG in reviewing and revising the KJIP to align it with key national policies[2] and enhance alignment to global good practice around three priorities: the integration of gender considerations in climate adaptation planning; the creation of intentional and strategic linkages between climate adaptation planning processes at the national and island level; and the integration of climate adaptation in sectoral planning processes. This review and revision involved:

- Several rounds of national consultations which included government ministries, FBOs, local non-governmental organisations and development partners.
- The convening of local gender experts to inform specific enhancements to the KJIP and ongoing implementation governance structures.
- The involvement of representatives from the Women's Development Division (MWYSSA) to co-facilitate workshop sessions with the KNEG on gender and climate change planning in line with emerging policy directions of that division.

Planning recommendations across a full range of strategic directions have been systematically integrated both as new standalone actions and as enhancements to existing actions, particularly in the areas of governance and women's economic empowerment.

Table 14 provides an overview of the steps involved in developing the KJIP from October 2012 to September 2013, along with the steps required following its development into the future.

[2] Kiribati Development Plan 2016-2019, Kiribati 20-Year Vision 2016-2036 (KV20), the Kiribati Climate Change Policy

Table 14. KJIP development process

STEPS	KJIP DEVELOPMENT TASKS	LEAD RESPONSIBILITY	TIMEFRAME
1	Planning for engagement • Country request • Regional partnership planning	• OB • RST	October to December 2012
2	Consultation – Part 1 Introductory and advocacy Situation analysis • Information collection • Identification of key problems (hazard context, risk and vulnerability context, institutional arrangements and policies, stakeholder analysis, existing programmes/projects, donor analysis etc.).	• KNEG • RST	January to February 2013
3	KJIP strategic action development process • Problem validation process • Problem prioritisation process • Problem–solution tree analysis • Strategy (theme) development • Action matrix development	• KNEG supported by RST	April to August 2013
4	Costing of KJIP and development of the strategic plan • Institutional arrangements • Results-based monitoring framework • Funding strategy • Communication strategy • Project concepts • Narrative	• KNEG supported by RST	April to September 2013
5	National approval process for the KJIP, including consultation on Kiritimati island	• KNEG	August to March 2014
6	Country and development partner discussions	• KNEG supported by RST	First-quarter of 2014
	Scoping study to explore options for strengthening gender considerations in Kiribati's NAP process with a focus on the KJIP	• OB and KNEG supported by NAP GN	August 2017

STEPS	KJIP DEVELOPMENT TASKS	LEAD RESPONSIBILITY	TIMEFRAME
7	Review and alignment of the KJIP to key national policies: Kiribati Development Plan 2016–2019, Kiribati 20-Year Vision 2016–2036 (KV20), the Climate Change Policy and global good practice objectives of vertical integration, sectoral integration and gender inclusion and responsive climate change planning	• KNEG and OB supported by the NAP GN	September 2017–March 2019
8	Development of a monitoring and evaluation framework for the KJIP	• KNEG and OB supported by the NAP GN	December 2018 to September 2019
9	KJIP implementation, monitoring and evaluation	• All Ministries, KNEG, KJIP Secretariat	March 2019 to 2023

4. THE KIRIBATI JOINT IMPLEMENTATION PLAN FOR CLIMATE CHANGE AND DISASTER RISK MANAGEMENT

4.1 VISION AND GOAL

The vision of the10-year KJIP is:

> I-Kiribati and their unique national and cultural identity, heritage and environment identity are upheld and safeguarded through enhanced resilience and sustainable development.

The goal of the KJIP is:

> To increase resilience through sustainable climate change adaptation and disaster risk reduction using a whole-of-country approach.

4.2 STRATEGIES AND KEY ACTIONS

To reduce vulnerabilities and respond to observed and likely impacts of climate change and disaster risks, the KJIP identifies 12 major strategies, as shown in Figure 9.

Strategy 1
- Strengthening good governance, policies, strategies and legislation

Strategy 2
- Improving knowledge and information generation, management and sharing

Strategy 3
- Strengthening and greening the private sector, including small and medium-sized enterprises

Strategy 4
- Increasing water and food security with integrated and sector-specific approaches and promoting healthy and resilient ecosystems

Strategy 5
- Strengthening health-service delivery to address climate change impacts

Strategy 6
- Promoting sound and reliable infrastructure development and land management

Strategy 7
- Delivering appropriate education, training and awareness programmes

Strategy 8
- Increasing effectiveness and efficiency of early warnings and disaster and emergency management

Strategy 9
- Promoting the use of sustainable renewable sources of energy and energy efficiency

Strategy 10
- Strengthening capacity to access finance, monitor expenditures and maintain strong partnerships

Strategy 11
- Maintaining the sovereignty and unique identity and cultural heritage of Kiribati

Strategy 12
- Enhancing resilience through strategic partnerships for community participation & engagement, ownership and inclusion of vulnerable groups

Figure 9. The 12 KJIP strategies

Each strategy has one or more key actions, sub-actions, outcomes and performance indicators (outcome- and output-based) to address climate change and disaster risks in response to the identified vulnerabilities and impacts. Table 14 summarises the results of each strategy. For the detailed strategic plan with key actions, sub-actions, results and performance indicators, lead and support agencies and partners associated with each strategy, see Annex 1.

Strategy 12 (“To enhance resilience through strategic partnerships for community participation, ownership and inclusion of vulnerable groups”) ensures synergy between the government and communities to enhance effectiveness and sustainability of climate change and disaster risk-related projects. The establishment of formal mechanisms for the promotion of gender equality and community involvement within I-Kiribati institutions responsible for CCA and DRM activities is a central concern of the KJIP, explicitly articulated in Strategy 1, Action 3 (“Establish and enhance formal mechanisms for gender equality in CCA & DRM governance, planning and implementation: Equal participation of all vulnerable at all levels of CCA & DRM governance”).

In all strategies of the KJIP, various actions and sub-actions include considerations regarding gender, youth and children, the elderly, people with disabilities and other vulnerable groups. Each of the actions of the KJIP has a set of performance indicators associated with them. The monitoring and evaluation system being developed (see 4.8) will refine the set of indicators that are ultimately reported against. This will also define the data collection systems and approaches to using that information.

4.3 KEY NATIONAL ADAPTATION PRIORITIES

The KJIP is closely aligned with the Climate Change Policy (CCP), the Kiribati Development Plan 2016–2019 and the Kiribati 20-Year Vision 2016–2036. The KJIP is a comprehensive plan for multisectoral and multilevel action on CCA & DRM. Within this plan, there are Key National Adaptation Priorities (KNAPs) that have been identified in the CCP and have now been integrated into the KJIP to ensure clarity of alignment and to prioritise certain key actions for additional implementation coordination support and funding. KNAPs are typically at an action level, but in certain instances, they are at the results level.

Table 15. Overview of KJIP strategies and anticipated results

STRATEGY	RESULTS AND KEY NATIONAL ADAPTATION PRIORITIES (FROM CLIMATE CHANGE POLICY)
Strategy 1: Strengthening good governance, strategies and legislation	1.1 All policies, strategies, sector operational plans, ministry annual workplans, ministerial plans of operations, project proposals and monitoring and evaluation systems enable the proactive and inclusive reduction of climate change and disaster risks. 1.2 Appropriate national and sector legislation is providing an enabling environment to enforce climate and disaster risk reduction. 1.3 **KEY NATIONAL ADAPTATION PRIORITY – DISASTER RISK MANAGEMENT #2**. Enhance coordination between climate change adaptation and disaster risk management programmes and legislation, by government departments, island councils, NGOs, FBOs and the private sector in a collaborative manner across sectors and link these to our development aspirations.
Strategy 2: Improving knowledge and information generation, management and sharing	2.1 An integrated and up-to-date national database providing all relevant information for resilient development is available and accessible for all. 2.2 Capacities to communicate science and best practices are strengthened by developing and disseminating effective and relevant information, communication and awareness products for decision making and awareness raising across sectors and at all levels (see also Strategy 7). 2.3 Capacities for data collection, assessment, analysis, interpretation, monitoring and reporting are strengthened across sectors.

STRATEGY	RESULTS AND KEY NATIONAL ADAPTATION PRIORITIES (FROM CLIMATE CHANGE POLICY)
Strategy 3: Strengthening and greening the private sector, including small and medium-sized enterprises	3.1 Increased investment by businesses, including small and medium-sized enterprises and women in value-adding marine and agricultural products for the domestic and export niche markets. and benefit women and men equally. 3.2 Private sector implements greening and risk management initiatives (in areas such as tourism, trade, transport, import and export). 3.3 Private sector incorporates climate change and disaster risks into its strategic and business plans (and assesses feasibility of insurance).
Strategy 4: Increasing water and food security with integrated and sector-specific approaches and promoting healthy and resilient ecosystems	4.1 Communities with island councils manage and implement climate change adaptation and disaster risk reduction measures as an integral part of their development efforts and inclusive of vulnerable groups. • **KEY NATIONAL ADAPTATION PRIORITY – ENVIRONMENTAL SUSTAINABILITY AND RESILIENCE #1[i] & [iii].** Strengthen institutional capacity and the framework for effective conservation and sustainable use of natural resources (KNAP #1[i]) and effective licensing and enforcement systems to protect the environment and enhance the resilience of the people of Kiribati (KNAP #1[iii]). 4.2 Salt-, drought-, rain- & heat stress-resilient crops, fruit, vegetables and livestock breeds are identified and promoted, and communities preserve local food (fruit trees and seafood). • **KEY NATIONAL ADAPTATION PRIORITY – FOOD SECURITY #2, #3 & #4.** Strengthen the capability of communities to take practical and sustainable measures to address food and nutrition security (KNAP #2); Increase understanding and community ownership of assets and practices related to food and nutrition security (behavioural change) (KNAP #3); Improve food preservation and storage techniques to avoid food shortages and increase food availability through use of both modern and traditional skills and knowledge (KNAP #4). 4.3 Communities manage coastal fisheries taking into consideration sustainability of marine resources as well as climate change and disaster risks. 4.4 Communities have constant access to local produce and basic food commodities. • **KEY NATIONAL ADAPTATION PRIORITY – FOOD SECURITY #1.** Strengthen the institutional and technical capacities of various key sectors for a coordinated whole-of-government approach to

STRATEGY	RESULTS AND KEY NATIONAL ADAPTATION PRIORITIES (FROM CLIMATE CHANGE POLICY)
	improve local food production and address issues with imported food commodities. 4.5 Communities manage their water resources, including during extreme events such as drought, heavy rain and storm surges (see also Strategy 6). • **KEY NATIONAL ADAPTATION PRIORITY – WATER SECURITY #4.** Strengthening communities' engagement in safeguarding water sources and improving water systems.
Strategy 5: Strengthening health-service delivery to address climate change impacts	5.1 The public is aware of water safety and proactively reduces the spread of vector-, water- and food-borne diseases. 5.2 **KEY NATIONAL ADAPTATION PRIORITY – HEALTH SECURITY #4:** Routine systems for surveillance of environmental health hazards and climate-sensitive diseases are strengthened and the capacity of national and local health systems, institutions and personnel to manage climate change- and disaster-related health risks are enhanced. • **KEY NATIONAL ADAPTATION PRIORITY – HEALTH SECURITY #3.** Strengthen health intervention programmes for monitoring, surveying and responding to climate-sensitive, climate-induced and disaster-related diseases. 5.3 Capacities are enhanced, and equipment provided to the MHMS Central Laboratory and Environmental Health Laboratory to test water and food, conduct vector control activities and analyse results. 5.4 I-Kiribati population's general health status is enhanced to be more resilient to climate-related diseases and health impacts. 5.5 A national climate change, disaster risk, outbreak preparedness governance framework, response plan and a sectoral environmental health plan, which incorporate surveillance and response to climate-sensitive diseases and disaster risks, are in place. • KEY NATIONAL ADAPTATION PRIORITY – HEALTH SECURITY #1 & #2: Develop a governance framework to guide the health sector's work on climate change and disaster risk reduction (KNAP #1); Improve management, coordination and implementation of health security programmes (KNAP #2). 5.6 **KEY NATIONAL ADAPTATION PRIORITY – HEALTH SECURITY #5.** Strengthened support for retrofitting medical facilities and health infrastructure adversely affected by, or susceptible to, the impacts of climate change.

STRATEGY	RESULTS AND KEY NATIONAL ADAPTATION PRIORITIES (FROM CLIMATE CHANGE POLICY)
	5.7 **KEY NATIONAL ADAPTATION PRIORITY – HEALTH SECURITY #6.** Enhanced chemical waste management and alternatives to reduce contamination and pollution.
Strategy 6: Promoting sound and reliable infrastructure development and land management	6.1 The livelihood of I-Kiribati is improved through public buildings, infrastructure and utilities that are well maintained and resilient to climate change and disasters (climate proofing). 6.2 Land and marine planning and management for all islands that provide clear regulations on land development with competent planning authorities strengthened to implement & enforce land and marine use regulatory frameworks and water regulations (see also Strategy 1). 6.3: Building coastal resilience through strategic coastal protection initiatives • **KEY NATIONAL ADAPTATION PRIORITIES – COASTAL PROTECTION AND INFRASTRUCTURE #2 & #3:** Strengthen national capacity to manage, monitor and protect coastal areas in a coordinated manner (KNAP #2); Develop planning processes and programmes for climate proofing infrastructure throughout Kiribati (KNAP #3). • **KEY NATIONAL ADAPTATION PRIORITY – COASTAL PROTECTION AND INFRASTRUCTURE #4.** Engage communities in becoming active partners in building coastal resilience and reducing hazards and risks related to climate change. • **KEY NATIONAL ADAPTATION PRIORITY – COASTAL PROTECTION AND INFRASTRUCTURE #1.** Develop bold and innovative engineering solutions to address coastal management issues (coastal protection) and long-term measures to build up our islands through collaborative efforts with potential partners). 6.4: Water reserves are protected, and communities have access to sufficient and adequate fresh water at all times (including during extreme events such as drought, heavy rain and storm surges; see also Strategy 4) and to improved sanitation facilities. • **KEY NATIONAL ADAPTATION PRIORITY – WATER SECURITY #1.** Strengthen national water governance so all key stakeholders are enabled to perform their allocated functions in a coordinated manner to address all water issues, including the impacts of climate change, climate variability and natural disasters.

STRATEGY	RESULTS AND KEY NATIONAL ADAPTATION PRIORITIES (FROM CLIMATE CHANGE POLICY)
	• **KEY NATIONAL ADAPTATION PRIORITY – WATER SECURITY #2 & #3:** Enhanced support and enforcement of regulations for water security and safety issues (KNAP #3) and provide efficient harvesting systems and innovative solutions to water issues (water availability, quality and quantity) (KNAP #2). • **KEY NATIONAL ADAPTATION PRIORITY – WATER SECURITY #5** Ensure access to improved sanitation facilities, including monitoring the impacts of pollution sources. 6.5 **KEY NATIONAL ADAPTATION PRIORITY – UNAVOIDABLE CLIMATE CHANGE IMPACTS #2.** Establish financial mechanisms to address the risks facing community and public assets (with a focus on climate risk insurance and building on existing initiatives and programmes).
Strategy 7. Delivering appropriate education, training and awareness programmes	7.1 Students and professionals have capacities to take action on adaptation along with risk reduction and coping strategies before, during and after disasters and emission mitigation. • **KEY NATIONAL ADAPTATION PRIORITY – CAPACITY BUILDING AND EDUCATION #1:** Update and provide accurate and contextualised materials and information on climate change and disaster risk for use in conjunction with Kiribati's national curriculums. 7.2 The I-Kiribati population is well informed and all stakeholders have access to up-to-date and accurate, contemporary and traditional information on climate change and disaster risk management (see also Strategy 2) and communities take voluntary action to reduce climate change and disaster risks. • **KEY NATIONAL ADAPTATION PRIORITY – CAPACITY BUILDING AND EDUCATION #2.** Increase formal and informal capacity-building programmes, which will contribute to awareness and resilience building for Kiribati. These may include competencies, skills and expertise that are needed to support climate change adaptation, mitigation and disaster risk reduction. 7.3 The I-Kiribati population (inclusive of vulnerable groups) are well qualified with formal and TVET forms of qualification to improve employability inside outside of Kiribati.

STRATEGY	RESULTS AND KEY NATIONAL ADAPTATION PRIORITIES (FROM CLIMATE CHANGE POLICY)
Strategy 8: Increasing effectiveness and efficiency of early warnings and disaster and emergency management	8.1: **KEY NATIONAL ACTION PRIORITY – DISASTER RISK MANAGEMENT #1:** Strengthening disaster risk preparedness (through innovative technology), response and recovery across all sectors including, importantly, at the island and the community levels to reduce loss of life, injuries, damage to infrastructure and properties. • **KEY NATIONAL ADAPTATION PRIORITY – ENVIRONMENTAL SUSTAINABILITY AND RESILIENCE #1[iv].** Effective enforcement at Kiribati's ports of entry to safeguard its fragile environment from external threats. • **KEY NATIONAL ADAPTATION PRIORITY – DISASTER RISK MANAGEMENT #3.** Enshrine principles of "humanitarian assistance" and "building back better" when responding to, or recovering from the impact of disasters and ensure that these efforts take into consideration the risks associated with climate change. • **KEY NATIONAL ADAPTATION PRIORITY – UNAVOIDABLE CLIMATE CHANGE IMPACTS #1.** Enhance understanding of loss and damage (through data collection and vulnerability analysis) to better position Kiribati to engage with and receive support from regional and international initiatives that will address national priorities and concerns.
Strategy 9: Promoting the use of sustainable renewable sources of energy and energy efficiency	9.1 **KEY NATIONAL ADAPTATION PRIORITY – ENERGY SECURITY #1:** Promote and enhance the transition towards renewable energy sources. 9.2 **KEY NATIONAL ADAPTATION PRIORITY – ENERGY SECURITY #3:** Increase energy conservation and energy efficiency on both the supply and demand sides. 9.3. Renewable energy and energy efficiency are supported by appropriate policy, legislation and regulation. • **KEY NATIONAL ADAPTATION PRIORITY – ENERGY SECURITY #2:** Strengthen the technical and institutional capacities of the energy sector using the most innovative technologies available.

STRATEGY	RESULTS AND KEY NATIONAL ADAPTATION PRIORITIES (FROM CLIMATE CHANGE POLICY)
Strategy 10: Strengthening capacity to access finance, monitor expenditures and maintain strong partnerships	**10.1 KEY NATIONAL ADAPTATION PRIORITY – CLIMATE FINANCE #3.** Strengthened coordination and collaboration in-country on climate finance and climate change and disaster risk management initiatives. • **KEY NATIONAL ADAPTATION PRIORITY – CLIMATE FINANCE #4 & 5.** Strengthen the Climate Finance Unit and broader national capacity, including NGOs, to further engage with key multilateral sources and climate finance mechanisms to provide efficient and directed support for CCA, mitigation and DRM activities. **10.2 KEY NATIONAL ADAPTATION PRIORITY – CLIMATE FINANCE #1** Increase efforts to mobilise and scale up various sources of financing to implement climate change adaptation, mitigation and disaster risk management needs and priorities. 10.3 **KEY NATIONAL ADATATION PRIORITY – CLIMATE FINANCE #2.** Line ministries' monitoring, evaluation and performance measures of climate change adaptation and disaster risk management, including budgeting, expenditure, institutional capacity, and internal systems, are strengthened through MFED engagement, as coordination office for climate finance through KCFD to increase Kiribati's access to, and engagement with, various sources of climate finance.
Strategy 11: Maintaining the existing sovereignty and unique identity and cultural heritage of Kiribati	11.1 The rights of Kiribati over its existing EEZ and the resources within it are protected forever for the people of Kiribati. 11.2 The cultural heritage of Kiribati are protected, preserved and promoted.

STRATEGY	RESULTS AND KEY NATIONAL ADAPTATION PRIORITIES (FROM CLIMATE CHANGE POLICY)
Strategy 12: To enhance resilience through strategic partnerships for community participation & engagement, ownership and inclusion of vulnerable groups	12.1 Community partnerships and members of vulnerable groups are increasingly engaged in climate change and disaster risk management initiatives and their needs are addressed. 12.2: Members of communities are proactively committed toward long-term partnership that is based on good governance, sustainability and empowerment. 12.5: Locally driven resilience programmes (in identifying issues, strength and opportunities). 12.5: The community participation and engagement to address climate change and disaster risk management issues is well defined and implemented.

4.4 INSTITUTIONAL ARRANGEMENTS

The newly established KJIP Secretariat under the Office of the Beretitenti will facilitate the coordination, implementation, monitoring and evaluation of the KJIP through the KNEG, guided by the Development Coordination Committee. Figure 10 provides an overview of the institutional arrangements under the KJIP.

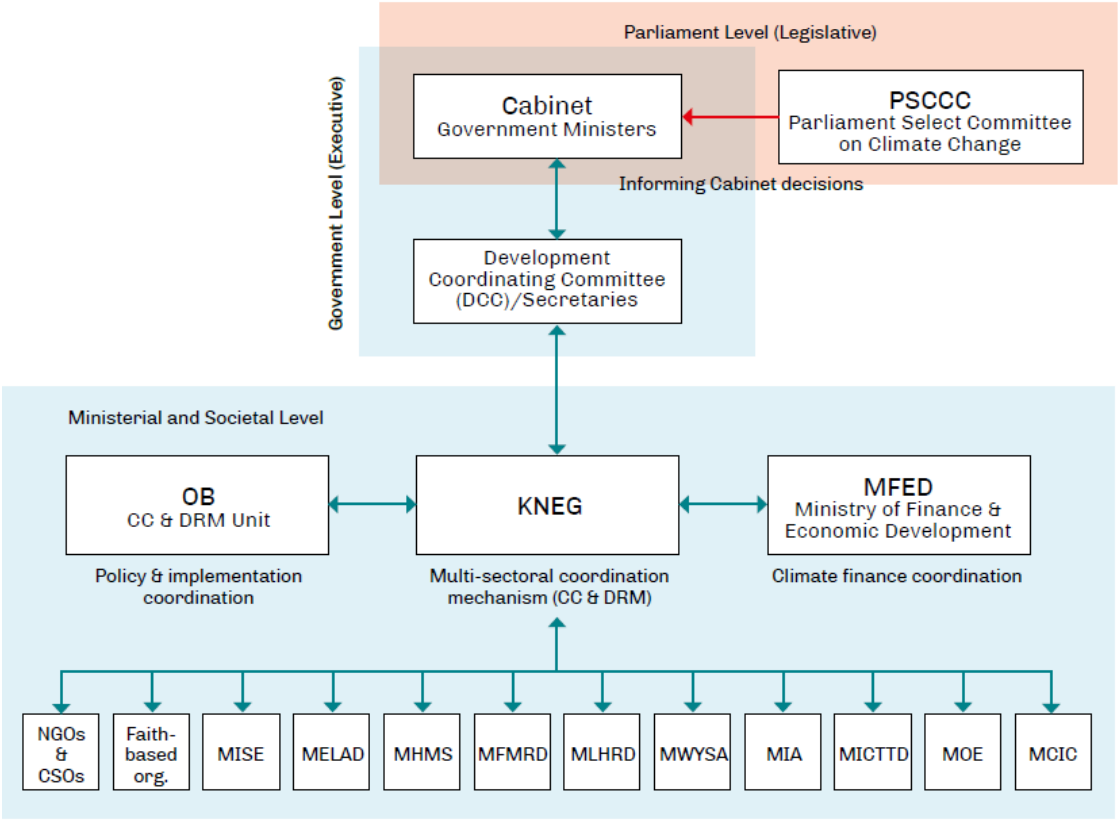

Figure 10. Institutional setup and governance structure for climate change in Kiribati

4.1.1 The KJIP Secretariat

The KJIP Secretariat, hosted by the Office of Te Beretitenti, will be responsible for coordinating the implementation, monitoring and reporting of the KJIP. It will convene and facilitate meetings of the KNEG and ensure that relevant information is shared with all KNEG members, partners, observers and the public. It will be a focal point for new climate change and disaster risk management initiatives and will act as a guiding partner for the KNEG and its members.

The KJIP Secretariat (through the KNEG) will collate priorities and progress reporting to be tabled to the Development Coordinating Committee, for discussion during biannual donor roundtables, and to Parliament as requested.

Before undertaking any new initiatives relating to climate change and disaster risk management, MFAI, MFED, line ministries, NGOs, the private sector, FBOs and development partners are asked to inform the KJIP Secretariat and consult with the KNEG.

The KJIP Secretariat will be housed within the Office of Te Beretitenti and will compile reports to the Development Coordinating Committee. The KJIP Secretariat does not replace the Development Coordinating Committee Secretariat which is hosted in MFED.

4.4.2 The Kiribati National Expert Group (KNEG)

KNEG will act as a coordination mechanism for climate change and disaster risk management initiatives. In particular, it will:

- Ensure any initiatives are aligned with national development and KJIP priorities.
- Ensure holistic, inclusive and strategic approach of all KNEG stakeholders and partners in the consultations and implementation of KJIP actions.
- Guide and coordinate programme implementation and monitoring.
- Develop joint annual work plans on the KJIP and relevant initiatives.
- Provide institutional and advisory support to national agencies, beneficiaries and partners.
- Ensure equitable participation by women and organisations promoting gender equality in KNEG.
- Ensure that women are considered a distinct stakeholder group and gender considerations are included in KJIP actions.
- Help to mobilise current and future resources to support programme implementation.
- Share key results and outcomes annually.
- Exchange information and lessons learned regularly.

KNEG can take an overall steering function for the design, implementation and monitoring of climate change and disaster risk management initiatives and also form sub-steering groups for sector-specific measures or integrated approaches targeting outer islands and the community level (such as the whole-of-island approach [WoI], gender inclusion or KNAPs). It can be an entry point for new initiatives. Specifically, the MWYSSA Women's Development Division (WDD) will be a key coordinating stakeholder in KNEG both in ensuring oversights of gender inclusion in KJIP and supporting dedicated gender-inclusion sub-steering groups.

The KNEG is chaired by the Office of Te Beretitenti and consists of representatives from MFED, MFAI, MIA and all line ministries, the private sector, NGOs and FBOs.

4.4.3 KJIP Implementation Arrangements

The Kiribati Joint Implementation Plan is to be implemented through the existing and newly established mechanisms mentioned above. These are to be aligned with rules and procedures that the Government of the Republic of Kiribati must follow. The main arrangements for the KJIP implementation are summarised in Figure 11.

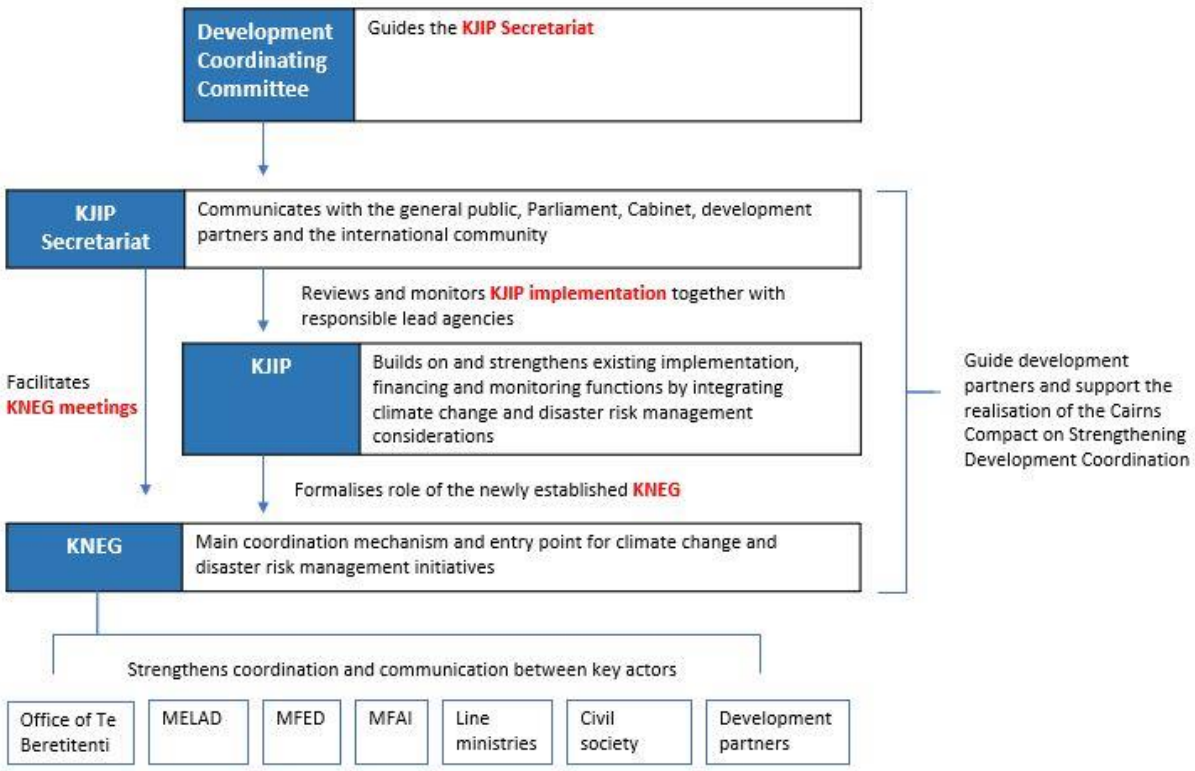

Figure 11. KJIP implementation arrangements

4.5 FINANCING STRATEGY

The implementation of the KJIP is to be financed through already existing strategies ranging from national budgets and other internal sources to overseas development assistance, climate finance from major funds and humanitarian aid.

National budgets are being (and will be) used in all areas where climate change and disaster risks are mainstreamed into the budgets of ministerial plans of operations and corresponding projects across sectors. MFED will have a key role in ensuring climate change and disaster risks and response measures are incorporated into project proposals, budgeting, reporting and monitoring procedures. The KJIP Secretariat and the KNEG meetings will increasingly be maintained through national budgets. The implementation of the KJIP is further enabled through in-kind contributions such as staff time. Furthermore, communities, NGOs and FBOs may contribute by cost sharing for similar activities and fundraising. There is a need to ensure that the allocation of financial resources is gender-equitable and an increasing need for gender-responsive budgeting as the country develops its implementation and financing strategy.

The Kiribati Climate Finance Division (KCFD) in MFED is a central coordinating office for coordinating financial arrangements, particularly with the Green Climate Fund and in establishing financial relationships with implementing entities under other funds such as the Global Environment Facility (GEF). Adaptation Fund and Climate Investment Funds (CIFs).

Development partners are invited to consider supporting KJIP strategies with programmes such as budget support and strategy-wide approaches. The Government of the Republic of Kiribati would like to investigate the feasibility of a National Climate Change Fund. It wishes to acknowledge its partners for their support in enhancing institutional capacities and performance requirements to ensure all ministries have robust management and financial systems in place.

Existing technical and financial assistance mechanisms should be used to support the implementation of the KJIP, including multilateral, international and bilateral development partners, CROP agencies, NGOs and FBOs. Development partners need to consider national priorities and follow national procedures in making decisions on development assistance and also integrate the consideration of climate change and disaster risks into their development aid.

As the KJIP strategies represent both ongoing and new activities, the KJIP Secretariat and the KNEG will work to identify resource gaps to be presented to Kiribati development partners during biannual donor round tables and respective funding and programming cycles of development partners. (This work includes a direct exchange with line ministries.)

4.6 COMMUNICATIONS STRATEGY

All implementing partners will disseminate information about the KJIP and its vision, goals, strategies and results through existing information-sharing networks, media and forums at international, regional, national and local levels.

Tangible outputs such as lessons learned, knowledge products, awareness and education materials, reports, media products will be produced in most KJIP strategies. This information will also be made available to contribute to national and international best practice.

The Climate Change and Climate Risk Communications Strategy (currently being developed by the Office of Te Beretitenti) aims to strengthen awareness, partnerships and practical actions to increase the resilience of I-Kiribati in response to the impacts of climate change. In support of the KJIP, the Strategy outlines clear and targeted communications initiatives aimed to help the government to promote priority actions. It identifies the key messages, channels and tools to reach national and community stakeholders, civil society organisations, agencies and development partners. Part of this work involves a media engagement strategy, products to promote the KJIP, a partnership mechanism to promote and build on existing and future opportunities, and a knowledge-management system. There is also a need to address gender-specific barriers to information access in communication and dissemination strategies. Alongside this is a need to ensure equitable representation of women in communication platforms and networks.

4.7 MONITORING AND EVALUATION

The KJIP will be monitored in alignment with the KDP Monitoring and Evaluation approaches. A comprehensive monitoring and evaluation framework is being developed in 2019 which will guide the development of an ongoing monitoring and evaluation system. This will refine the set of indicators that are ultimately reported against. This will also define the data collection systems and approaches to using that information. Where appropriate, KDP and KV20 indicators have been integrated into the performance indicators of the KJIP against the KNAPs. Selected indicators from major climate funds and indicator frameworks also have been integrated into the KJIP against the KNAPs to harmonise monitoring and reporting structures, while also facilitating the development of climate finance proposals as per KNAP #1: Climate finance.

At the ministerial level, the KJIP strategies are to be monitored through the annual Ministry Strategic Plans, which will have to incorporate relevant KJIP actions and performance indicators. Detailed baselines and targets for the performance indicators will have to be identified by the respective national stakeholder (government or non-government) that has been identified as the responsible lead agency. There is a need to include indicators of gender equality and women's empowerment and to evaluate the differentiated impacts of adaptation actions on women and men. The monitoring and reporting approach and procedures will be detailed in the monitoring and evaluation framework to be developed as an action of this KJIP.

The KJIP Secretariat through the KNEG will compile a biannual KJIP Progress Report. Since the KJIP is a 10-year plan, it will be reviewed in alignment with the KDP period, with the first one due by 2019 that will inform a mid-term evaluation in 2020. Progress reports and reviews have to be approved by the Development Coordinating Committee before being endorsed by cabinet.

The KJIP is understood to be a living document and as such the KNEG can adjust it to meet emerging needs, subject to the approval of the Development Coordinating Committee and cabinet directives.

GLOSSARY

Many of the following definitions are drawn from another source, as acknowledged, with minor revisions for editing purposes.

Adaptation	Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploit beneficial opportunities (UNFCCC, 2019). In simpler terms, adaptation represents the making of changes to reduce the vulnerability of a community, society or system to the negative effects of climate change, or make the most of potential positive effects. It includes building skills and knowledge, as well as making practical changes, such as strengthening coastal infrastructure, adjusting farming systems and improving water management (SPREP, 2012).
Aerosol	A collection of airborne solid or liquid particles, with a typical size of between 0.01 and 10 micrometres (a millionth of a metre), that reside in the atmosphere for at least several hours. Aerosols may be of either natural or anthropogenic origin. Aerosols may influence climate in several ways: directly through scattering and absorbing radiation, and indirectly through acting as cloud condensation nuclei or modifying the optical properties and lifetime of clouds (IPCC, 2007).
Afforestation	Establishment of forests through planting and/or deliberate seeding on land that, until then, was not classified as forest (FAO, 2010).
Anthropogenic	Resulting from or produced by human beings (IPCC, 2013).
Aragonite	A form of calcium carbonate that makes up the shells and skeletons of key organisms in reef ecosystems, including reef-building corals. (Australian Bureau of Meteorology & CSIRO, 2011, Vol.1)
Atmosphere	The gaseous envelope surrounding the Earth. The dry atmosphere consists almost entirely of nitrogen (78.1 per cent volume mixing ratio) and oxygen (20.9 per cent volume mixing ratio), together with a number of trace gases, such as argon (0.93 per cent volume mixing ratio), helium and radiatively active greenhouse gases such as carbon dioxide (0.035 per cent volume mixing ratio) and ozone. In addition, the atmosphere contains the greenhouse gas water vapour, whose amounts are highly variable but typically around 1 per cent volume mixing ratio. The atmosphere also contains clouds and aerosols (IPCC, 2007b).
Biodiversity or Biological Diversity	The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (CBD, 2013).

Carbon cycle	The term used to describe the flow of carbon (in various forms, e.g., as carbon dioxide) through the atmosphere, ocean, terrestrial biosphere and lithosphere (IPCC, 2007b).
Carbon sequestration	The process of removing carbon from the atmosphere and depositing it in a reservoir (UNFCCC, 2019).
Carbon sink	A natural or artificial reservoir that takes up and stores carbon. Trees, plants, oceans, rocks and soils are natural sinks, while landfills are artificial sinks (SPREP, 2012).
Climate	The average weather conditions over a long period of time (usually over at least 30 years), based mainly on measurements of temperature, precipitation and wind (SPREP, 2012).
Climate change	A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forces such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use. Note that the UNFCCC, in its Article 1, defines climate change as “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.” The UNFCCC thus makes a distinction between climate change attributable to human activities altering the atmospheric composition, and climate variability attributable to natural causes (IPCC, 2013). In simpler terms, the term describes changes in the Earth’s climate due to human activities (anthropogenic climate change) or natural processes that are already occurring or predicted to occur. These include increasing air and sea surface temperatures, changing rainfall patterns, sea level rise, ocean acidification, and changes in frequency and intensity of extreme events such as droughts, floods and tropical cyclones. Anthropogenic climate change is expected to happen much more rapidly than natural changes in the climate, posing an enormous challenge to both natural and human systems (SPREP, 2012).
Climate variability	Variations in the mean state and other statistics (such as standard deviations, the occurrence of extremes, etc.) of the climate on all spatial and temporal scales beyond that of individual weather events. Variability may be due to natural internal processes within the climate system (internal variability), or to variations in natural or anthropogenic external forcing (external variability) (IPCC, 2013).

Convergence zone	An area where winds flow from different directions toward each other, thus meeting at one point or along one line (like the ITCZ or SPCZ). Convergence zones could be called “cloud meeting places” (ABM, CSIRO & RCCCC, 2013). Similarly, in oceanography, where water currents flow toward each other and meet. Horizontal convergence usually forces vertical motion to occur, such as convection (BoM & CSIRO, 2011, Vol. 1).
Coral bleaching	The paling in colour which occurs when a coral loses its symbiotic, energy-providing organism (IPCC, 2007b).
Cyclone (also typhoon or hurricane)	A violent rotating windstorm that develops over tropical waters warmer than 26.5°C and located between 5° and 15° latitude.
Deforestation	The conversion of forest to other land use or the long-term reduction of the tree canopy cover below the minimum 10 per cent threshold (FAO, 2010).
Deposition	The process by which sediments, soil, rock and other matter are laid down/added to a landform or landmass such as a soft beach or coast.
Disaster	A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceed the ability of the affected community or society to cope using its own resources (UNDRR, 2009).
Disaster management	Component of the social system that involves the planning, organising, leading and controlling of activities related to the managing of disasters in any of its phases and stages (TAF/OFDA, 2008).
Disaster preparedness	Policy and administrative decisions and operational activities at all levels to ensure preparedness for, response to and recovery from potential disaster events. (Pacific Disaster Net, 2012)
Disaster risk management	The systematic process of using administrative directives, organisations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster (UNISDR, 2009).
Disaster risk reduction	The minimising of vulnerabilities and disaster risks through prevention and mitigation to avoid or reduce the adverse impacts of hazards within the broad context of sustainable development (TAF/OFDA, 2008).

Drought	A period of abnormally dry weather long enough to cause a serious hydrological imbalance. Drought is a relative term, and so any discussion in terms of precipitation deficit must refer to the particular precipitation-related activity that is under discussion. For example, shortage of precipitation during the growing season impinges on crop production or ecosystem function in general (due to soil moisture drought, also termed agricultural drought), and during the runoff and percolation season primarily affects water supplies (hydrological drought). Storage changes in soil moisture and groundwater are also affected by increases in actual evapotranspiration in addition to reductions in precipitation. A period with an abnormal precipitation deficit is defined as a meteorological drought. A megadrought is a very lengthy and pervasive drought, lasting much longer than normal, usually a decade or more (IPCC, 2013). In simpler terms, a drought is a long period with no rain during a time when the rain would be expected. It results in reduced groundwater, and a shortage of water for drinking, sanitation and watering plants. It is a slow-onset phenomenon, which means it does not happen suddenly, caused by one single event like a storm or cyclone, but emerges gradually over time (SPREP, 2012; IFRC, 2013).
Earthquake	A sudden break within the upper layers of the Earth, whether on land or underwater, causing massive vibration. The resulting vibration on land causes liquefaction, cracks in ground surfaces, collapse of buildings and destruction of life. An underwater earthquake causes displacement of huge volume of water and generates tsunami waves that can travel thousands of miles at high speed. There are two scales for measuring the impact of an earthquake: the Richter scale and the Mercalli scale.
Ecosystem	A complex set of relationships of living organisms functioning as a unit and interacting with their physical environment. The boundaries of what could be called an ecosystem are somewhat arbitrary, depending on the focus of interest or study. Thus the extent of an ecosystem may range from very small spatial scales to, ultimately, the entire Earth (IPCC, 2007b). A community of plants and animals, and their relationships and interactions with each other and with their physical environment (SPREP, 2012).
Emergency	A situation generated by the real or imminent occurrence of an event that requires immediate attention. A significant or unusual event requiring the coordinated response of more than one agency (TAF/OFDA, 2008).
Emission	The release of gas into the atmosphere (SPREP, 2012).

ENSO – El Niño–Southern Oscillation	The term El Niño was initially used to describe a warm-water current that periodically flows along the coast of Ecuador and Peru, disrupting the local fishery. It has since become identified with a basin-wide warming of the tropical Pacific Ocean east of the dateline. This oceanic event is associated with a fluctuation of a global-scale tropical and subtropical surface pressure pattern called the Southern Oscillation. This coupled atmosphere-ocean phenomenon, with preferred time scales of two to about seven years, is known as the El Niño–Southern Oscillation (ENSO). It is often measured by the surface pressure anomaly difference between Darwin and Tahiti or the sea surface temperatures in the central and eastern equatorial Pacific. During an ENSO event, the prevailing trade winds weaken, reducing upwelling and altering ocean currents such that sea surface temperatures warm, further weakening the trade winds. This event has a great impact on the wind, sea surface temperature and precipitation patterns in the tropical Pacific. It has climatic effects throughout the Pacific region and in many other parts of the world, through global teleconnections. The cold phase of ENSO is called La Niña (IPCC, 2013).
Epidemic	An unusual increase in the number of cases of infectious disease as a result of changes in climatic conditions or even natural disasters such as tropical storms, floods, earthquakes and droughts. Epidemics may also attack animals.
Erosion	The process by which soil and rock are removed from the Earth's surface by wind or water flow, and then transported and deposited in other locations.
Flood	A significant rise of water level in a river, lake, reservoir or coastal region causing harmful inundation of property and land used by humans (TAF/OFDA, 2008).
Forest	Land spanning more than 0.5 hectares with trees higher than 5 metres and a canopy cover of more than 10 per cent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use (FAO, 2010).
Forest degradation	The reduction of the capacity of a forest to provide goods and services (FAO, 2010).

Fossil fuels	Carbon-based fuels from fossil hydrocarbon deposits, including coal, peat, oil and natural gas (IPCC, 2007b).
Gender	Gender is used to describe the way men and women are raised to take on different responsibilities and social roles. These gender roles vary between cultures and change over time. Gender is not synonymous for women; it refers to the relationship between women and men (i.e., what is happening to women and men in the same context).
Gender equality	Gender equality refers to women and men having equal rights, responsibilities, and opportunities. Gender equality means the interests, needs and priorities of both women and men, and the diversity of the populations within those groups (e.g., old, young, abled-bodied, disabled) are taken into consideration. Gender equality concerns men as well as women. However, gender equality has a particular focus on improving the rights and opportunities of women, due to persistent inequalities and the greater level of disadvantage experienced by women as a group.
Global warming	The increase in average global temperature that has occurred since industrialisation, due to increased levels of greenhouse gases in the atmosphere. Since the early 20th century, the average surface temperature of Earth has increased by 0.8°C, and it is predicted to continue to rise, with the actual amount depending on mitigation measures taken in the coming years (SPREP, 2012).
Greenhouse	A glass house in which plants are grown. It is usually used in colder climates to trap heat and moisture for plants, especially vegetables and flowers, to grow better than they would outside.
Greenhouse effect	The infrared radiative effect of all infrared-absorbing constituents in the atmosphere. Greenhouse gases, clouds and (to a small extent) aerosols absorb terrestrial radiation emitted by the Earth's surface and elsewhere in the atmosphere. These substances emit infrared radiation in all directions but, everything else being equal, the net amount emitted to space is normally less than would have been emitted in the absence of these absorbers because of the decline of temperature with altitude in the troposphere and the consequent weakening of emission. An increase in the concentration of greenhouse gases increases the magnitude of this effect; the difference is sometimes called the enhanced greenhouse effect. The change in a greenhouse gas concentration because of anthropogenic emissions contributes to an instantaneous radiative forcing; surface temperature and troposphere warm in response to this forcing, gradually restoring the radiative balance at the top of the atmosphere (IPCC, 2013). In simpler terms, the greenhouse effect is the heating of the Earth's surface as a result of certain gases in the atmosphere, which radiate heat back to the Earth (SPREP, 2012).

Greenhouse gases	Gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of terrestrial radiation emitted by the Earth's surface, the atmosphere itself and clouds. This property causes the greenhouse effect. Water vapour (H_2O), carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4) and ozone (O_3) are the primary greenhouse gases in the Earth's atmosphere. Moreover, there are a number of entirely human-made greenhouse gases in the atmosphere, such as the halocarbons and other chlorine- and bromine-containing substances, dealt with under the Montreal Protocol. Besides CO_2, N_2O and CH_4, the Kyoto Protocol deals with the greenhouse gases sulphur hexafluoride (SF_6), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) (IPCC, 2013).
Hazard	A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (UNISDR, 2009). In simpler terms, a hazard is the potential for a natural- or human-induced event to occur with negative consequences.
Indicator	Quantitative or qualitative factor or variable that provides a simple and reliable basis for assessing achievement, change or performance in a specific condition (GoK, 2012c).
Intertropical Convergence Zone (ITCZ)	A band of high rainfall that stretches across the Pacific just north of the equator. It is an east–west band of low-level wind convergence near the equator where the southeast trade winds of the southern hemisphere meet the northeast trade winds of the northern hemisphere. The ITCZ is strongest in the northern hemisphere summer and affects most countries on, or north of, the equator (BoM & CSIRO, 2011, Vol. 1).
Kyoto Protocol	The Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1997 in Kyoto, Japan at the Third Session of the Conference of the Parties to the UNFCCC. It contains legally binding commitments in addition to those included in the UNFCCC. Countries included in Annex B of the Protocol (most Organisation for Economic Co-operation and Development countries and countries with economies in transition) agreed to reduce their anthropogenic greenhouse gas emissions (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride) by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012. The Kyoto Protocol entered into force on 16 February 2005 (IPCC, 2013).
Mitigation (of disaster risks)	The lessening or limitation of the adverse impacts of hazards and related disasters (UNISDR, 2009).

Mitigation (of emissions)	A human intervention to reduce the sources or enhance the sinks of greenhouse gases (IPCC, 2013). In simpler terms, mitigation of emissions involves efforts to reduce the levels of greenhouse gases in the atmosphere, either by limiting the sources or by enhancing the sinks. Examples include using fossil fuels more efficiently, switching to renewable energy sources such as solar energy and hydro-power, and expanding forests and other sinks to remove greater amounts of carbon dioxide from the atmosphere (SPREP, 2012).
Objective	A specific statement detailing the desired accomplishments or outcomes of a project at different levels (short to long term) (GoK, 2012c).
Ocean acidification	A reduction in the pH of the ocean over an extended period, typically decades or longer, which is caused primarily by uptake of carbon dioxide from the atmosphere, but can also be caused by other chemical additions or subtractions from the ocean. Anthropogenic ocean acidification refers to the component of pH reduction that is caused by human activity (IPCC, 2011, p. 37). In simpler terms, ocean acidification is an ongoing rise in acidity of ocean and sea waters. This is due to higher levels of dissolved carbon dioxide, which are a direct result of increased levels of carbon dioxide in the atmosphere. Acidification is likely to damage ocean ecosystems (SPREP, 2012). The pH of Earth's oceans is decreasing, caused by the uptake of carbon dioxide from the atmosphere. Lower pH makes the oceans more acidic (BoM & CSIRO, 2011, Vol 1).
Oil spill	Accidental discharge of oil from a ship in the open ocean, with the potential to damage marine life.
Outcome	The result achieved in fulfilling the "purpose" of activities, as identified in the hierarchy of objectives. An outcome can also be a change in conditions, or maintenance of a set of conditions, resulting from the interaction of outputs and external factors, which is described so that the direction and extent of any such change can be assessed (GoK, 2012c).
Output	The product of one or more activities, intended to contribute to the desired outcome, described so that its quantity, quality and time of completion can be verified, and the inputs used in producing it can be identified, measured and cost (GoK, 2012c).
Performance	The degree to which a development intervention or a development partner operates according to specific criteria/standards/guidelines or achieves results in accordance with stated goals or plans (GoK, 2012c).

Preparedness	The knowledge and capacities developed by governments, professional response and recovery organisations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely imminent or current hazard events or conditions (UNISDR, 2009).
Prevention	The outright avoidance of adverse impacts of hazards and related disasters (UNISDR, 2009).
Reforestation	Re-establishment of the forest through planting and/or deliberate seeding on land classified as forest (FAO, 2010).
Rehabilitation	Restoring people's lives back to normal after a disaster, including by beginning to repair the physical, social and economic damage.
Renewable energy	Energy that comes from sources that are not depleted or can be easily replenished; for example, hydroelectric power, solar energy and biofuels.
Resilience	The capacity of a community, society or natural system to maintain its structure and function through stress or change (SPREP, 2012).
Result	The measurable output, outcome or impact (intended or unintended, positive or negative) of a development situation Strategies. The overall direction and approach to be taken in planning and managing activities to achieve the desired result (GoK, 2012c).
Risk	The probability that loss will occur as the result of an adverse event, given the hazard and vulnerability.
Runoff	That part of precipitation that does not evaporate and is not transpired but flows through the ground or over the ground surface and returns to bodies of water (IPCC, 2013).
Saltwater intrusion	Displacement of fresh water by saltwater in coastal areas or estuaries. Saltwater enters the underground freshwater lens as an effect of sea level rise, storm surges, periods of low rainfall and high temperatures and when large quantities of freshwater are removed for human use. Seawater seeps in from the bottom of the lens and eventually mixes with the fresh water to form brackish water, which is unfit for humans to drink and for plants to survive (SPREP, 2012).
Sea surface temperature	The temperature of the ocean surface. It represents the temperature of the upper few metres of the ocean as opposed to the skin temperature, which is the temperature of the upper few centimetres (BoM& CSIRO, 2011, Vol. 1).
Sink	Any process, activity or mechanism that removes a greenhouse gas, an aerosol or a precursor of greenhouse gas from the atmosphere. Forests and other vegetation are considered sinks because they remove carbon dioxide through photosynthesis (UNFCCC, 2019).

South Pacific Convergence Zone (SPCZ)	A band of high rainfall stretching approximately from the Solomon Islands to the east of the Cook Islands. It is a persistent and greatly elongated zone of low-level convergence. It is strongest in the southern hemisphere in summer and affects most countries in the South Pacific. It extends from approximately 140°E near the equator to approximately 120°W at 30°S. The zone is not quite linear but is oriented more west to east near the equator and has a more diagonal orientation (northwest to southeast) at higher latitudes (BoM & CSIRO, 2011, Vol. 1).
Storm surge	A sudden rise of the sea as a result of high winds and low atmospheric pressure; sometimes called a storm tide, storm wave or tidal wave.
Sustainable development	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (UNFCCC, 2019)
Target	A specified objective that indicates the number, timing and location of that which is to be realised (GoK, 2012c).
Thermal expansion	The increase in volume (and decrease in density) that results from warming water (BoM& CSIRO 2011, Vol. 1).
Trade winds	The wind system occupying most of the tropics that blow from the subtropical high-pressure areas toward the equator (BoM& CSIRO, 2011, Vol. 1).
Tsunami	Series of large sea waves generated by sudden displacement of seawater (caused by earthquake, volcanic eruption or submarine landslide); capable of travelling over a long distance.
Vulnerability	The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity, and its adaptive capacity (UNFCCC, 2019); note this definition is in the climate change context only) In simpler terms, and broadened to include disasters as well, vulnerability is the level of susceptibility of an individual, a community, an organisation or a system to adverse conditions, emergencies or disasters; a measure of its ability, or inability, to cope (SPREP, 2012).
Warm pool (West Pacific warm pool)	An extensive pool of the world's warmest water, with temperatures higher than 28–29°C ranging from the central Pacific to the far eastern Indian Ocean (BoM& CSIRO, 2011, Vol. 1, p. 250).

Weather	The effects of atmospheric conditions, at a specific time and place, in terms of variables such as temperature, rainfall and wind (SPREP, 2012). Compared with climate, which is a long-term description, the weather describes the current situation or predictions for the next few days. Apart from daily weather, also seasonal and annual weather patterns are described and sometimes referred to as the 'prevailing climate'.
West Pacific monsoon (WPM)	The West Pacific Monsoon (WPM) moves north to mainland Asia during the northern hemisphere summer and south to Australia in the southern hemisphere summer. The seasonal arrival of the monsoon usually brings a switch from very dry to very wet conditions. It affects countries in the far Western Pacific (BoM& CSIRO 2011, Vol. 1).

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ANNEX 1. KJIP DETAILED ACTION MATRIX

All strategies and actions in the KJIP shall be inclusive of vulnerable groups, considering gender, youth and children, the elderly, and people with disabilities.

STRATEGY 1: STRENGTHENING GOOD GOVERNANCE, STRATEGIES AND LEGISLATION				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators (see note at 4.8)**	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
Result 1.1: All policies, strategies, sector operational plans, ministry annual workplans, ministerial plans of operations, project proposals and monitoring and evaluation systems enable the proactive and inclusive reduction of climate change and disaster risks. [contributes to KEY NATIONAL ADAPTATION PRIORITY – DISASTER RISK MANAGEMENT #2]				
1) Integrate climate change adaptation and disaster risk management considerations in existing and new national sector strategic plans, ministries' policies and strategic plans,[3] Ministerial Plans of Operations (inclusive of vulnerable groups[4]; identified frameworks). a. Seek ministerial approval for the review. b. Engage relevant resource personnel to lead the review. c. Ensure outcomes and lessons learned through DRM/DRR coordination are integrated into sectoral planning. d. Conduct public consultation of the draft policy (six community consultations meetings – three in Outer Gilbert Island, one in Line and Phoenix, two in Tarawa). e. Finalise draft and submit for endorsements.	1. Number of policies introduced or adjusted to address climate change risks 2. Institutional arrangements to lead, coordinate and support the integration of climate change adaptation into relevant policies, plans and associated processes 3. Increased percentage of policies, strategies, legislation, Ministry Strategic Plans (MSP's) and Ministry Operational Plans (MOP's) that have provisions for reducing climate change and disaster risks, inclusive of vulnerable groups and are gender responsive	Responsible ministries	Office of Attorney General, OB, MFED, KNEG, Kiribati Red Cross Society (KRCS)	Australia's Aid Program, New Zealand Aid Programme, USAID, EU, UN organisations, ADB, World Bank, GIZ/ German Development Cooperation, etc.; SPC, SPREP

[3] Agriculture Policy[ii]; Eco-Tourism Policy[ii]; Fisheries Implementation Strategy (based on KNFP) (draft)[ii]; Human Resource Development Policy[i]; Integrated Investment Policy[i]; Labour Mobility Policy (draft)[ii]; Minerals Strategic Plan[ni]; MEHR Strategic Plan (in development)[ii]; National Foreshore Management Plan[ii]; National Pandemic Plan (Draft)[ii]; Private Sector Development Strategy[i] (in review); Tourism Management Plan for Phoenix Islands Protected Area[i]; Urbanisation Policy[ii], Coconut Development Strategy, Investment Policy Framework, National Trade Policy Framework, National Youth Policy, National Disability Policy, National Gender Equality and Women Development Policy, National Cultural Policy (draft)

[4] Include groups that are vulnerable to climate change and disasters among those protected by social security policies.

STRATEGY 1: STRENGTHENING GOOD GOVERNANCE, STRATEGIES AND LEGISLATION				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators (see note at 4.8)**	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
	4. Number of national and sector-wide policies, legal frameworks, plans and processes developed and strengthened to identify, prioritise and integrate adaptation strategies and measures)			
Result 1.2: Appropriate national and sector legislation is providing an enabling environment to enforce climate and disaster risk reduction. [contributes to KEY NATIONAL ADAPTATION PRIORITY – DISASTER RISK MANAGEMENT #2]				
1) Review and develop enabling legislation and enforcement mechanisms to support effective risk reduction, legal responses to impacts (identified legislation[5]) and enhanced coordination between climate change adaptation and disaster risk management legislation. a. Seek ministerial approval for the review. b. Engage relevant resource personnel to lead the review. c. Conduct public consultation of the draft policy (six community consultations meetings – three in Outer Gilbert Island, one in Line and Phoenix, two in Tarawa [the second for MPs]). d. Finalise draft and submit for endorsement to cabinet and then, in case of Bill and Act, to Parliament. e. Formulate model council bylaws related to CCA and DRM as necessary and/or provide authority and resources to councils to enable them to enforce national laws on their islands	*See above* 1. Percentage and number of pieces of legislation reviewed and updated to integrate climate change adaptation and disaster risk management	Respective ministries, Office of Attorney General, MIA/ KiLGA	OB, KNEG, KRCS	Australia's Aid Program, New Zealand Aid Programme, USAID, EU, ADB, WB, UNDP, WHO, WMO, GIZ/German Development Cooperation/BMU; FFA, SPC, SPREP etc.

[5] Biosecurity Act[i]; Biosafety Regulation[i]; Declaration for Water Reserves[i]; Disaster Management Act[i]; Energy Bill[ii]; environmental impact assessment licensing system[i]; Environment General Regulation[ii]; Fisheries Act[i]; Foreshore and Land Reclamation Ordinance[i]; health impact assessment system (policy)[i]; Kiribati Meteorology Bill[ii]; Local Government Act[i]; Marine Pollution Standards[ii] and other marine legislation; MCIC legislation[i]; Minerals Development Act[ii]; Protected Areas Regulation[ii]; Protected Species Regulation[ii]; Public Health Ordinance[i]; Quarantine Ordinance[i]; regulations underpinning levy for local agricultural produce[i]; Tourism Act (including ecotourism)[i].

STRATEGY 1: STRENGTHENING GOOD GOVERNANCE, STRATEGIES AND LEGISLATION				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators (see note at 4.8)**	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
Result 1.3: KEY NATIONAL ADAPTATION PRIORITY – DISASTER RISK MANAGEMENT #2. Enhance coordination between climate change adaptation and disaster risk management programmes and legislation, by government departments, island councils, NGOs, FBOs and the private sector in a collaborative manner across sectors and link these to our development aspirations (Result 1.1 and 1.2 also contributes to this KNAP)				
1) Establish and strengthen mechanisms to coordinate, communicate and collaborate on climate change and disaster risk management programmes and initiatives (KJIP Secretariat, climate change communication plan) and decentralise project development and implementation. a. Establish the KJIP Secretariat (to coordinate the KNEG and climate change and disaster risk management (DRM) programmes and initiatives) with resources and full equipment within the OB. b. Establish mechanisms for the KJIP Secretariat to regularly report on the KJIP implementation to decision makers and the public. c. Establish mechanisms and processes for the KJIP Secretariat to formalise its linkages and communications with KNEG, FBOs, private sector, NGOs and community groups, including through an inclusive KNEG TOR and membership, standard agenda items on partnerships with non-state actors. d. Identify KJIP actions that have an existing monitoring and reporting structure in place to form the core of a KJIP mid-term evaluation report in 2020. e. Coordinate and implement the Communications Strategy on Climate Change and Disaster Risk Management. f. Integration of CCA and DRM issues into island councils' strategic plans and bylaws g. Enhanced dissemination and communication of the KJIP and translate a summary version KJIP into I-Kiribati. h. Build base capacities for sub-national actors to act on climate change adaptation and disaster risk management (CCA & DRM) through supporting interventions prioritised through successful examples of local action in other contexts communicated by good practice guides.	1. Number and level of effective coordination mechanisms 2. Climate change priorities are integrated into national development strategy 3. All ministries, outer island councils, the Kiribati Chamber of Commerce and Industries, NGOs and FBOs have nominated focal points for climate change and disaster risk management by 2014 4. Number of climate change and disaster risk management initiatives the KNEG has taken a steering function with. 5. Number of island councils' strategic plans and bylaws incorporating CCA & DRM issues 6. People with a disability are represented on KNEG. 7. Reports on KJIP implementation are made publicly available and in accessible formats. 8. Accessibility needs are taken into account in communicating KJIP activities and implementation. 9. Number of trainings for Councils' Island Disaster Committees members	OB, KNEG MIA, KiLGA	MFED, private sector, KRCS, NGOs, community and vulnerable groups, FBOs	

STRATEGY 1: STRENGTHENING GOOD GOVERNANCE, STRATEGIES AND LEGISLATION				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators (see note at 4.8)**	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
i. Capacity building and training on specific skills relevant to local priorities and projects. j. Enhancing use and acquisition of English at an island level to support technical skill acquisition. k. Utilise KiLGA monthly newsletter for mayors and clerks and other readers to communicate CCA and DRM information and directives, instructions, training notes.	including Island Project Officers and Assistant Clerks who provide Secretariat work for the IDC 10. Number of Basic English Communication training, related to CCA and DRR, for Mayors & other Councils' officials			
2) Develop and implement a climate change and climate risks communications plan. a. Develop a communications plan based on wide consultations. b. Consult with women's groups, young people and representatives for people with a disability in ensuring communications plans and communications approaches are inclusive, culturally responsive, and reflect known barriers for communication for key population groups. c. Implement the communication plan, including capacity building and potentially equipment.	Consultation reports 11. Number of Communication Plans approved and implemented including for Councils; 12. Number of training on the Communication plan and its implementation	OB BPA, KiLGA	All ministries, KNEG	Australia's Aid Program, EU; SPC (Global Climate Change Alliance), SPREP
3) Establish and enhance formal mechanisms for gender equality in CCA & DRM governance, planning and implementation. a. Equal participation by women at all levels of CCA & DRM governance. b. Establish of a gender and climate risk management position in the MWYSSA WDD to facilitate the linking of climate change and disaster risks to gender equality in development policies, strategies and projects c. Establish gender focal points within KNEG ministries based on a consistent and tailored TOR and capacity-building programme agreed by the WDD and OB. d. Undertake a gender and climate change analysis to develop a more nuanced understanding of gender and climate change	1. % of women on island Council CCA DRM committees 2. % of women in CCA & DRM governance, e.g. KNEG, Parliamentary Climate Change Committee 3. Establishment of gender and climate change positions and focal points by 2020 4. Gender and climate change analysis complete by 2019 5. Capacity-building programme aligned to good practice framework (e.g., GEF Capacity Development Framework)	MWYSSA: Women's Development Division, OB, KiLGA	All ministries, KNEG, KHFA, Red Cross	UN Women, UNDP

STRATEGY 1: STRENGTHENING GOOD GOVERNANCE, STRATEGIES AND LEGISLATION				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators (see note at 4.8)**	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
linkages to inform decision making in climate adaptation planning and implementation. e. Build capacity of AMAK (Aia Mwaea Ainen Kiribati, a women's organisation) and the National Council of Women to take a stronger role on CCA & DRM. f. Build a programme of empowerment and leadership for women's community-based organisations and community services organisations to effect system change and address attitudinal barriers amongst women to taking leadership roles. g. Build alignment between NGOs and government on gender - responsive approaches to disaster risk reduction and climate change project design, implementation and monitoring and evaluation; and adopt consistent approaches to gender mainstreaming across organisations, e.g., around sanitation projects, food security, economic empowerment. h. Expand a successful pilot project establishing island-level MOUs with *unimane*[6] and key CSOs to implement priority gender-inclusion actions. i. Build on KiLGA's recent capacity building for councils' female elected officials and extend it to women leaders in council areas	building developed by 2019 and executed according to timetable 6. Gender-inclusive *unimane* pilot expanded to three additional islands by 2021			
4) Establish and enhance formal mechanisms for partnerships with NGOs. Government and the private sector in KJIP governance, implementation and monitoring. a. Support the development of lead organisations for coordinating NGOs implementing CCA & DRM, including KANGO, Kiribati Communities Health Organisation (KCHO) and others. b. Based on the Implementation Toolkit[7] of the International Framework for CSO Development Effectiveness,[8] design and	1. NGOs doing CCA who meet minimum standards as defined in the International Framework for CSO Development Effectiveness 2. Multistakeholder partnerships including NGOs that mobilise and share knowledge, expertise, technology and	KANGO, OB	MWYSSA	PIANGO,

[6] Older men's village or island-level leaders group.
[7] Bermann-Harms, C & Murad, N. (n.d.). *Putting the Istanbul Principles into Practice: A Companion Toolkit to the Siem Reap Consensus on the International Framework for CSO Development Effectiveness.* Open Forum for CSO Development Effectiveness. Retrieved from http://hellenicplatform.org/wp-content/uploads/2016/09/230111-implementation-toolkit-en-web.pdf
[8] Open Forum for CSO Development Effectiveness (2011) *The Siem Reap CSO Consensus on The International Framework For CSO Development Effectiveness*, Open Forum for CSO Development Effectiveness. Retrieved from https://d2ouvy59p0dg6k.cloudfront.net/downloads/international_framework_open_forum.pdf

STRATEGY 1: STRENGTHENING GOOD GOVERNANCE, STRATEGIES AND LEGISLATION				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators (see note at 4.8)**	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
implement an organisational development support programme for key NGOs working in CCA to meet minimum standards for governance and financial management, c. Establish a framework for partnership arrangements between government and NGOs including with NGOs for people with a disability. d. Prioritise support for NGOs working with and supporting the coordination of women's community and faith-based groups. e. Government to leverage NGO's capacities for community engagement and inclusion in planning processes, e.g., council strategic plans, community-based fisheries management f. Leverage the capabilities of NGOs to more easily broker and develop partnerships with external organisations, including research organisations and international NGOs.	financial resources, to support the achievement of the KJIP goals 3. Evaluation of successful partnership initiatives			

STRATEGY 2: IMPROVING KNOWLEDGE AND INFORMATION GENERATION, MANAGEMENT AND SHARING				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
Result 2.1: An integrated and up-to-date national database providing all relevant information for resilient development is available and accessible for all.				
1) Develop a National Data and Information Centre (including a geographic information system – GIS) to coordinate, share and manage information related to disaster risk, climate change, and loss and damage for improved decision making and increased effectiveness and efficiency (Centre to cover socioeconomic, environmental and species migratory data, GIS and maps). (Also contributes to KNAP – UNAVOIDABLE CLIMATE CHANGE IMPACTS #1). a. Conduct a stocktake of available databases, existing data-sharing mechanisms (e.g., websites, publications), responsibilities and needs. b. Design a concept for data and information management based on the results of the stocktake and develop a national data-sharing protocol for internal decision making and development needs. c. Establish the National Data and Information Centre (potentially under existing National Statistics Office, linked to existing national and regional portals such as Pacific Disaster Net and Pacific Climate Change Portal). d. Enhance the Kiribati Integrated Vulnerability Assessment Database (KIVA.DB) as a key platform for CCA & DRM island and national-level information and implementation coordination, including providing: good practice case studies; localised climate and environmental data; implementation monitoring and M&E tools and presentation methods; sector-level tools and modules; data analysis tools; a climate project database; enhanced policy database; enhanced census data analysis and presentation; an enhanced GIS platform. e. Establish and support a Kiribati National Data and Information-Sharing Group who also undertake regular assessments of KNEG data and decision-making needs. f. Establish a linkage mechanism between outer islands and national data information system (including tools, instruments and training on outer islands). g. Establish a formal communications link between outer island council and MIA and OB including use of IEC materials. h. Recruitment of personnel in MIA and Island councils to act as focal point and to provide and coordinate monitoring and reporting of CC & DRM (potentially reviewing and defining Island Project Officer TOR)	1. A national database is accessible and provides up-to-date information 2. Increase of data availability and frequent updates on climate change and disaster risk indicators on outer islands 3. Increased use of KIVA.DB for policy and KNEG project coordination 4. The number of recruitments for CCA & DRM focal point position on outer islands and in strategic ministries	National Statistics Office (MFED) and OB, MIA, ATHKL	MFMRD, MELAD, MIA, MISE, KMS, MICTTD, MOE (all line ministries), NGOs, FBOs, media, telecommunications, etc.	All development partners, especially SPC (including Statistics), FFA, SPREP, USP and PIFS with existing databases, online portals and research programmes

STRATEGY 2: IMPROVING KNOWLEDGE AND INFORMATION GENERATION, MANAGEMENT AND SHARING				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
Result 2.2: Capacities to communicate science and best practices are strengthened by developing and disseminating effective and relevant information, communication and awareness products for decision making and awareness raising across sectors and at all levels (see also Strategy 7).				
1) Develop and interpret integrated data sets for dissemination to support planning and decision making at all levels (including information and awareness products). (Also contributes to KNAP – UNAVOIDABLE CLIMATE CHANGE IMPACTS #1). a. Analyse data sets based on needs. b. Amend the format of Household Income and Expenditure Surveys to effectively capture data related to climate change and disaster risk management, and loss and damage. c. Develop and disseminate relevant information and awareness products for a range of uses (such as agricultural maps). d. Equip resource centres on outer islands with information products and low-cost means of communication. e. Leverage CCA and DRM integrated into formal education curriculums to enable children and young people to communicate science behind climate change (see also Strategy #7).	1. Needs-based weather and climate information is applied by a range of users in a timely manner.	OB and all ministries, NGOs, FBOs and private sector		As above
2) Build a stronger evidence base of successful and unsuccessful CCA & DRM initiatives for learning and continuous improvement. a. Address barriers posed by government information disclosure protocols to share information more efficiently. b. Create a register of KNEG member activities and Ministerial Strategic Plan actions which is updated on an annual or biannual basis. c. Create a register of climate change projects implemented by development partners and NGOs d. Establish an evaluation framework for Key National Adaptation Priorities (KNAPs). e. Establish a data collection and reporting system for key KJIP actions with gender-inclusion targets f. Collate good practice examples to form a manual or database of successful community-based CCA & DRM projects. g. Establish a yearly competition for the best community-based CCA & DRM projects in key categories.	1. Annually updated database/ register of KNEG and supporting organisation activities 2. Evaluation framework for KNAPs developed and reported 3. Manual and/or database of successful community-based CCA & DRM activities	OB	MELAD ECD, MELAD Agriculture Division	weADAPT, UNDP, SPC

STRATEGY 2: IMPROVING KNOWLEDGE AND INFORMATION GENERATION, MANAGEMENT AND SHARING				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
Result 2.3: Capacities for data collection, assessment, analysis, interpretation, monitoring and reporting are strengthened across sectors.				
1) Strengthen the capacity of the Kiribati Meteorological Service (KMS) to collect and manage data and information on weather and climate variability—especially severe weather and natural hazard events and impacts. a. Modernise data logging for wind, solar, tidal, sea level, sea surface temperature. b. Replace weather and climate services stations with newly established ones. c. Establish a well equipped weather forecasting office. d. Mobilise on-shift staff 24/7 at the main office and outer islands. e. Build capacity with weather forecasting, data analysis and equipment maintenance. f. Enhance outreach and communication networks. g. Set up an effective monitoring system to improve early warnings for all hazards. Research and incorporation of traditional skills on seasonal and weather forecasting. h. Research and on-trial use of seasonal forecast to predict movement of highly migratory species (e.g., tuna).	1. The number of needs-based weather and climate information is applied by a range of users in a timely manner 2. The number of well equipped weather stations established and operational 24/7 3. Number of trained and qualified staff 4. Effective communication network established 5. Availability of special weather bulletin to Fisheries 6. The use of seasonal forecast in predicting the hot spot of highly migratory species (e.g., tuna) starting 2015	KMS (OB)	MISE, MELAD, MFMRD, MHMS, MIA, outer island councils, NGOs, communities, FBOs, media, telecommunications, etc.	Australia's Aid Program (including Bureau of Meteorology, CSIRO, COSPAC), UN Office for the Coordination of Humanitarian Affairs; WMO, SPREP (Finnish–Pacific Project), SPC, USP etc.

STRATEGY 2: IMPROVING KNOWLEDGE AND INFORMATION GENERATION, MANAGEMENT AND SHARING				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
2) Strengthen capacities to collect, analyse, monitor and manage environmental data to establish the state of the environment, the trends and environmental outlook as a basis for decision making and learning in climate change adaptation initiatives. a. Conduct training on collecting and analysing environmental data. b. Ensure the availability of necessary monitoring and assessment equipment c. Set up systems to draw on traditional knowledge of early warning signs of environmental stress, including those observed by women. d. Develop an accessible and regular environmental outlook report. e. Review, update and manage environmental data. f. Review and update the environment outlook report. g. Implementation of the assessment report recommendations through training, procurement of required monitoring equipment, monitoring protocols and programmes	1. Data management and monitoring capacity assessment report available 2. Regular monitoring and review, outlook reports	Environment and Conservation Division (MELAD)	MISE, MELAD, MFMRD, MHMS, MIA, outer island councils, NGOs, communities, FBOs, media, telecommunications, etc.	All development partners, SPREP, USP, international and regional environmental NGOs
3) Strengthen the capacity to collect, assess and analyse relevant agro-meteorological data and impacts on crop yields, diversity and seasonality of local crops, agricultural pests and diseases, invasive species, soil productivity and livestock. a. Conduct training on generating, analysing, interpreting and communicating real time and accurate agro-meteorological data and information. b. Conduct national surveys (including data collection on invasive species present on outer islands, crop yield, diversity and seasonality of crops, agricultural pest and diseases, soil productivity and livestock) with the use of GPS c. Ensure the availability of necessary equipment including global positioning system (GPS), soil health analysis, crop modelling software and weather and climate forecasting equipment as related to agricultural needs. d. Develop GIS that integrate weather/climate and natural disasters information into soil type and productivity, incursions of pests and diseases, crop and livestock diversity, and seasonality production of food crops. e. Conduct research, especially modelling of impacts of climate change on coconut productivity (copra production). f. Develop a self-help service for farmers on climate change and natural disasters information and data relevant for adaptive farming.	1. National surveys published on agro-meteorological data, crop modelling applications 2. 10% of farmers use adaptive farming produces	Agriculture and Livestock Division and Environment and Conservation Division (MELAD)	KMS, Environment and Conservation Division (MELAD), MIA, communities	Kiribati development partners such as Australia's Aid Program, USAID, UNDP, FAO, Taiwan, EU, German Development Cooperation; SPREP, SPC and research institutions such as IFAD

STRATEGY 2: IMPROVING KNOWLEDGE AND INFORMATION GENERATION, MANAGEMENT AND SHARING				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
4) Strengthen the capacity to regularly monitor the salinity, water quality, and thickness of freshwater lenses in locations that are used for water supplies (water reserves) on South Tarawa and the outer islands. a. Acquire monitoring equipment and train monitoring officers on the use of and standard operating procedures for equipment. b. Review and strengthen equipment monitoring. c. Conduct training on analysing of data and provide support for reporting on the monitoring data. d. Develop a water reserves management plan. e. Develop an annual report on status of water lens and water protection zones.	1. Appropriate training programmes and evaluation 2. Number of staff trained and reports on monitoring results presented to cabinet 3. Number of reserves mapped, stocktakes undertaken, management plans in place and implemented	MISE	MHMS	All

STRATEGY 2: IMPROVING KNOWLEDGE AND INFORMATION GENERATION, MANAGEMENT AND SHARING				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
5) Develop a national hub for GIS information to improve decision making on sustainable development in the context of disaster risk reduction and climate change impacts (especially minerals, land-use planning and management, and fisheries planning and management). a. Establish a GIS system for the Mineral Division and Fisheries Division to facilitate access to data. b. Establish 'geodetic benchmarks' on selected islands of Kiribati for monitoring coastal movement land erosion/accretion in relation to climate change and sea level rise—including Kiritimati, Tabuaeran and Kanton (procure global positioning system (GPS) including software and upgrading package with installation system, considering compatibility with existing software and equipment). c. Develop a website and staff to manage these monitoring activities in order to provide government bodies, partners and interested audience with regular updates on mineral, lands and fisheries data and establish a virtual library to improve access to ministry and government e-reports to assist decision making. d. Conduct monitoring surveys using established geodetic control benchmarks on selected islands of Kiribati for monitoring coastal movement—land erosion/accretion in relation to climate change and sea level rise—(procure global navigational satellite system performance system, software and upgrading package, and install system, considering compatibility with existing software and equipment). e. Conduct and develop a Kiribati National Deep Sea Minerals Report. f. Train MFMRD staff on data entry and analysis to support decisions to achieve sustainable development of natural resources. g. Establish a virtual library to improve access to ministry and government e-reports to assist decision making. h. Provide ongoing institutional strengthening and support for staff managing web page to be able to keep up with current relevant software etc. i. Collate reports from different regional organisations, government ministries etc., convert to e-copies and add to the virtual library. j. Collate existing GIS data and place on MD GIS system.	1. Spatial data is made readily available either as web- or server-based applications 2. Benchmarks on islands are in place that could further be utilised to determine the extent of coastal erosion/accretion 3. Number of Deep Sea Minerals reports released 4. Number of relevant staff included in the job training and other relevant trainings and relevant reports released	Minerals Division, Fisheries Division (MFMRD), Lands (MELAD)	National Statistics Office, OB	Kiribati development partners such as USAID, Japan; CROP members such as SPC (SOPAC Division); research institutions

6) Establish and formalise an interdepartmental national monitoring team on coastal changes. a. Undertake national consultation to identify current skills, areas of work and gaps in mapping and monitoring efforts. b. Develop a cabinet paper to seek approval for establishment of national monitoring team. c. Establish a national monitoring team to map coral, seagrass, benthic habitats, water quality, ciguatera etc. d. Examine how well major contributors to reef island sediment such as corals and foraminifera will cope with climate change effects such as increased temperature, salinity and acidity of seawater. e. Conduct surveys and monitoring of marine life and coral bleaching at Phoenix Islands Protected Area[9]and in the Kiribati Islands. f. Establish a natural marine science laboratory in Kanton.[10] g. Establish a monitoring and mapping system for ciguatera sites, and strengthen public awareness of how to identify potential ciguatoxic fish species and locations. h. Provide regular reports to policy advisers to improve decision making. i. Translate science and key adaptation actions into awareness materials in te-Kiribati for the wider I-Kiribati community to increase understanding of the impacts of climate change on marine resources.	1. Number of monitoring surveys on coral bleaching in the Phoenix Islands Protected Area (PIPA) and at least two islands in Kiribati (excluding Abemama) published. 2. Ciguatera outbreak sites are communicated to Island Development Councils and among ministries on a regular basis. 3. Number of ciguatera cases reduced by 10% by 2020. 4. Number of thematic island maps showing unique habitats and ecosystems (e.g., coral reef ecosystem, seagrass, benthic habitats etc.). 5. Scientific report on the impact of ocean temperature, salinity and acidity on corals and foraminifera in Kiribati. 6. All outer islands have access to relevant awareness materials on coastal changes (erosion, marine	Minerals Division, Fisheries Division (MFMRD), Lands; MHMS, MELAD (Phoenix Islands Protected Area Office)	All ministries	Kiribati development partners such as USAID, Japan; CROP members such as, SPREP and SPC (SOPAC Division); research institutions

STRATEGY 2: IMPROVING KNOWLEDGE AND INFORMATION GENERATION, MANAGEMENT AND SHARING				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agencies**	**Support agencies**	**Development partners and CROP members**
	and land-based habitats) in te-Kiribati.			
7) Build technical capacities at national and sub-national levels to undertake broad-based vulnerability assessment. a. Establish and strengthen programme of vulnerability assessment using the Integrated Vulnerability Assessment (IVA). b. Expand pool of trained staff to deliver assessment. c. Build on existing NGO activities to train communities to collect their own baseline data on food and water security. d. Enhance capacity to build linkages between the IVA and project identification, development, planning and design. e. Enhance capacity to build meaningful and global finance linked indicators into vulnerability assessment and into projects	1. Number of national and sub-national staff trained in IVA methods increases 2. Number of strategic plans demonstrating links to IVAs findings 3. Number of Strategic plans using IVA-derived indicators to monitor progress	OB	MFED (KCFD), MELAD: ECD, MFMRD, FSPK, KiriCAN, Red Cross	SPREP

[9] Source: Phoenix Islands Protected Area SAP 2.7 (climate change).
[10] Source: Phoenix Islands Protected Area SAP 1.10 (research & science).

STRATEGY 3: STRENGTHENING AND GREENING THE PRIVATE SECTOR, INCLUDING SMALL TO MEDIUM-SIZED ENTERPRISES				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
Result 3.1: Increased investment by businesses, including small and medium-sized enterprises and women in value-adding marine and agricultural products for the domestic and export niche markets. And benefit women and men equally.				
1) Strengthen and promote "green" and gender-inclusive businesses, particularly small and medium-sized enterprises focusing on value-added agricultural and marine products. a. Identify, cultivate and farm fruit and tree crops, livestock, fish and aquaculture species, including sandfish, that are more resilient to the impacts of climate change. b. Undertake trainings in South Tarawa and outer islands on agricultural and marine value-added products (tuna jerky, virgin coconut oil, coconut sap sugar, banana chips, etc.) and Start Your Business (SYB), Improve Your Business (IYB) and financial literacy targeting key stakeholders and vulnerable groups (women, youth and disabilities). c. Facilitate organic certification of islands in Kiribati based on the Abaiang organic certification. d. Undertake public-private dialogues to enhance domestic and foreign investment in green and resilient businesses. e. Facilitate establishment of green and resilient value-adding industries. f. Encourage women's participation in industry including by breaking down occupational stereotypes.	1. Number of fruit and tree crops identified and, cultivated, as well as livestock, fish and aquaculture species farmed 2. Number of trainings undertaken on agricultural and marine value-added products and SYB, IYB and financial literacy and percentage of participants representation 3. Number of small and medium-sized enterprises involved in greening and value-adding production 4. Number of islands organic certified 5. Number of public-private dialogues undertaken 6. Number of value-adding industries established	MELAD, MFMRD, MCIC, MERH, MYWSSA	MIA, KCCI, private sector, NGOs	Australia's Aid Program, USAID, New Zealand Aid Programme, GIZ/ German Development Cooperation, SPC, international NGOs
2) Strengthen capacities of existing export companies to increase export of locally made products. a. Improve capacities of existing export companies to increase their exports (Kiribati Coconut Development Company Ltd, Kiribati Fish Ltd, and private sector businesses). b. Facilitate and promote establishment of new processing and manufacturing businesses to venture into new and niche products.	1. % increase in volume of exports 2. Number of new processing and	MCIC	MFMRD, MELAD, MEHR	All partners

STRATEGY 3: STRENGTHENING AND GREENING THE PRIVATE SECTOR, INCLUDING SMALL TO MEDIUM-SIZED ENTERPRISES				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
c. Provide support to enhance reliability, productivity and efficiency of key sectors, e.g., construction, transport, etc. to facilitate effective implementation of key climate change adaptation activities.	manufacturing businesses established 3. Number of sectors supported and with the kind of support provided			
3) Support the development of social enterprises and community-based business ventures to diversify local incomes, particularly for women. a. Undertake trainings based on good practice toolkits for social and community-based enterprise development, e.g., ILO Community-Based Enterprise Development (C-BED), as a baseline for encouraging and facilitating enterprises development b. Undertake community awareness on formation of new cooperatives and trainings of existing cooperatives and clusters. c. Identify promising candidate enterprises and build investment readiness and gender inclusion, particularly in priority sectors such as fisheries and tourism. d. Build local and offshore investor networks and relationships and identify joint venture opportunities e. Provide technical assistance to establish and develop the skills of investible social enterprises to access funds. f. Market and promote emerging and successful enterprises in productive sectors (agriculture, fisheries, handicrafts, tourism, etc.).	1. Number of training courses undertaken using good practice tools. 2. Number of cooperative awareness and trainings undertaken, and number of new cooperatives formed 3. Number of investor networking connections made 4. Number of investible enterprises provided with technical assistance and skills development support. 5. Number of marketing and promotion done for successful enterprises	MCIC, MEHR	MELAD (Agriculture and Livestock Division), MWYSSA	DFAT, MFAT,
4) Establish a value chain development project for agricultural production, processing, enterprise development, markets development and marketing. a. Procure agricultural supplies (seeds, tools) for active household farmers. b. Post-harvest training to local farmers and fishers. c. Establish and trial processing and preservation programmes and activities with a focus on women's involvement and social enterprise. d. Establish a marketing trial in Abaiang and in Butaritari to extend to other islands based on evaluation. e. Provide transport support, including loading and unloading facilities for producers to support marketing of goods.	1. Number of integrated markets established in South Tarawa, Betio and Kiritimati 2. Number of agricultural supplies procured and	MCIC, MISE, MLIPD	MELAD Agriculture Division	GGGI

STRATEGY 3: STRENGTHENING AND GREENING THE PRIVATE SECTOR, INCLUDING SMALL TO MEDIUM-SIZED ENTERPRISES				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
f. Establish integrated markets in South Tarawa, Betio and Kiritimati to enhance product development and marketing of agricultural and fisheries produce. g. Include the programme in tourism communications and marketing.	delivered to active household farmers 3. Number of trainings conducted with farmers and staff 4. Number and volume of commodities produced and marketed 5. Support on transportation and related facilitates provided			
Result 3.2: Private sector implements greening and risk management initiatives (in areas such as tourism, trade, transport, import and export).				
1) Explore and implement opportunities of greening import-based private sector (especially in South Tarawa and Kiritimati). a. Consult and raise awareness on green growth (including climate change and disaster risks) with private sector to identify opportunities (e.g. low-impact products, green technologies, minimum energy performance standards and labelling).	1. Increase in number of businesses adopting greening initiatives	KCCI, private sector	MELAD, KNEG	All partners, international NGOs, foreign green businesses
2) Strengthen and achieve ecotourism initiatives that support CCA and DRM (e.g., bonefish tourism) and can encourage investment through climate risk management measures. a. Review and analyse existing and new potential tourism destinations and products (building on existing studies). b. Work with tourism companies and guest houses to develop and promote selected green tourism products (for all islands, including bonefishing on Kiritimati and Nonouti). c. Encourage people to establish ecotourism businesses, and provide guidance on tourist demands as well as greening and marketing tourism projects. d. Support community-based social enterprises for the development of small-scale tourism initiatives that economically empower women. e. Enhance transport and logistics infrastructure to be safer and more climate-resilient to promote outer island tourism.	1. Number of ecotourism businesses (that also support CC adaptation and DRM) 2. Number of selected green tourism products being promoted 3. Increase in number of community-based social enterprises for small-scale tourism 4. Increase in number of tourism operators that have participated in risk education programmes 5. Increase in number of tourism operators that	MICTTD, private sector	MOE, OB, MIA, outer island councils, MELAD and other concerned ministries	All partners, South Pacific Tourism Organisation, SPREP, SPC

STRATEGY 3: STRENGTHENING AND GREENING THE PRIVATE SECTOR, INCLUDING SMALL TO MEDIUM-SIZED ENTERPRISES				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
f. Support the engagement of tourism operators to participate in climate change and disaster risk management programmes, e.g., risk education programmes, equipment and accommodation risk assessment and mitigation approaches.	have undertaken risk assessment activities			
3) Develop and strengthen local businesses and artisanal fisheries to capitalise on the likely increase in skipjack tuna stocks and to better use bycatch for food security. a. Develop Transhipment and Secondary Services Business Plan (for baitfish, local machine shops, salt etc.), covering prohibition and enforcement of all transhipments at sea in EEZ (including longline).[11] b. Identify viable market niches for tuna species of less than 10 kg in weight and concomitantly develop viable products processed from such tuna. c. Establish bait-catching units (Bagans) at relevant locations in lagoonal islands to complement supply of bait for small-scale artisanal fishers to use in their fishing operations targeting skipjack, yellowfin and bigeye tuna species.[12] d. Establish and maintain effective and well-resourced competent authority, with expertise and resources to develop and certify chain of custody processes (important for enabling the export of seafood products to European markets). e. Implement Parties to Nauru Agreement Vessel Day Scheme and other commitments through access/licensing agreements.	1. At least 10 bait-catching-units established on outer islands by 2020 2. A competent authority is fully operational by 2018 3. % of integration of national commitment in compliance to PNA	MFMRD	National tuna fishing associations, fishers' cooperatives (inclusive of women), KCCI and private sector, MCIC, urban councils, and others	Kiribati development partners such as Australia's Aid Program, New Zealand Aid Programme, World Bank, etc.; CROP members such as SPC, FFA; Parties to Nauru Agreement Secretariat
4) Develop Fisheries Management Plans for key commercial species, including: beche-de-mer, aquarium, bonefish (sport fishing and subsistence), arc shells, giant clams, seaweed etc., to strengthen sustainable management and resilience, and ensure the increase of revenue from fisheries, considering the likely effects of climate change and disaster risks on these commercial resources. a. Develop management plans (including consultations). b. Develop regulations (including consultations). c. Gain approval from cabinet. d. Implement Management Plans and enforce regulations.	1. Proportion of fish stocks within their safe biological limits 2. Restoration of 10% of "te bun" stock at selected pilot marine protected area (MPA) sites (such as Teaoraereke- Nanikai and Abaiang) by 2017	MFMRD	MIA, MELAD, Office of Auditor-General, island councils, and other relevant ministries, fishers' association	All partners, SPC, FFA

[11] Source: MFMRD (2013).
[12] Source: MFMRD (2013).

STRATEGY 3: STRENGTHENING AND GREENING THE PRIVATE SECTOR, INCLUDING SMALL TO MEDIUM-SIZED ENTERPRISES				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
e. (Potentially restore the fishery for arc shell (te bun) and other species in Tarawa, including potentially leveraging plankton resource by-products from renewable energy projects)			(including women)	
5) Review aquaculture activities and develop aquaculture development strategy to maximise food security and to benefit livelihoods. a. Review and conduct feasibility study on existing aquaculture context in Kiribati to determine constraints and potential for enhancing economic growth, employment and food security (including existing pond infrastructure of Tarawa and Kiritimati). b. Formulate national aquaculture development strategy. c. Implement the national aquaculture development strategy by 2015.	1. Increase in aquaculture productivity by 20% in 2018	MFMRD	MIA, island councils, Taiwan Technical Mission, Eco-Farm, Kiribati Fish Ltd, fishers' associations (including women), private sectors	Kiribati development partners such as Australia's Aid Program, New Zealand Aid Programme, FAO, Taiwan government, etc.; CROP members such as SPC, FFA; international NGOs such as WorldFish
Result 3.3: Private sector incorporates climate change and disaster risks into its strategic and business plans (and assesses feasibility of insurance).				
1) Incorporate the consideration of risks and responses to climate change and hazards into strategic and business plans and explore options to transfer risks to third parties (micro insurance) to protect local businesses from loss of business and/or profit due to damage caused by fire, inundations, storms, coastal erosion and tsunami. a. Develop guidance on integrating adaptation and risk-reducing measures into business operation plans (as a baseline). b. Conduct a feasibility study on introducing micro insurance schemes (potentially product development, training and promotion through Kiribati Insurance Corporation).	1. Increase in percentage of businesses incorporating climate change and disaster risk in their strategic and business plans including insurance by 2018	MCIC, Kiribati Insurance Corporation	MFED, private sector, KCCI, OB	Reinsurance companies, all partners

STRATEGY 4: INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance Indicator** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
Result 4.1: Communities with island councils manage and implement climate change adaptation and disaster risk reduction measures as an integral part of their development efforts and inclusive of vulnerable groups.				
1) Develop and implement a programme for community-based integrated vulnerability assessment, climate change adaptation and disaster risk management (such as the Whole-of-Island Approach, WoI). a. Develop a national community-based integrated vulnerability assessment framework (indicators, survey approach, planning and costing of actions), building on the government's existing vulnerability assessment framework (2011). b. Pilot new or continue applying existing approaches on selected outer islands. c. Establish local steering function at outer island council level and focal point. d. Establish community-based CCA & DRM committees with gender and people with a disability inclusive membership to input into KJIP implementation, monitoring and evaluation. Leverage NGO capabilities and programmes in support of these committees. e. Conduct integrated and participatory vulnerability assessments to identify adaptation and disaster risk reduction actions, building on existing assessments. f. Develop a local adaptation and DRM plan and/or respectively integrate identified actions into Island Council Strategic Plans and Island Council Operational Plans (annual). Draw on traditional knowledge and innovative engineering solutions in the drafting of key adaptation actions. g. Conduct training on climate change and DRM, targeting extension officers, Councils' elected and appointed officials, NGOs, youth and women, private sector and FBOs' representatives. h. Exchange information on and replicate good practices on further outer islands. i. Monitor and evaluate achievements and review of the Whole-of-Island Approach (WoI) (selection criteria, lessons learned).	1. Kiribati Integrated Vulnerability Framework developed and approved by 2014 2. Number of tools and mechanisms enhanced to support WoI-monitoring, including data gathering, analysis and use 3. Number of plans supporting Island-level strategic planning, WoI-implementation and investment planning and community-based disaster risk management planning based on identified and prioritised vulnerabilities (IVA) 4. Number of communication and knowledge-management materials and events supported 5. KJIP secretariat and KNEG capacity to address CCA and DRM in a WoI-perspective enhanced, based on technical trainings on CCA/DRM mainstreaming, IVA methodology, KIVADB-monitoring and project management	MELAD, MFMRD, MIA, MISE, outer island councils	OB, KNEG MFED, National Statistics Office, Kiribati Local Government Association, NGOs (FSPK, LLEE, KiriCAN, Red Cross), FBOs	Australia's Aid Program, New Zealand Aid Programme, USAID, GIZ/ German Development Cooperation, EU, ADB, WB, UNDP, SPC, SPREP, USP, INGO

STRATEGY 4: INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance Indicator** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
j. Develop a whole-of-country plan for replication of "WoI" k. Incorporate "WoI" elements into KiLGA's Councils Profiles, for islands not covered by WoI projects, and ensure cross-agency coordination to avoid duplication.	6. Increased share of outer island council strategic plans incorporate climate change adaptation and DRM (baseline: in 2013 Abaiang, Teinainano Urban Council and Betio Town Council have strategic plans, with Betio Town Council considering climate change; target to have all outer island councils incorporating climate change adaptation and DRM into their plans by end of 2015) 7. Biosecurity Act is incorporated into the island councils' bylaws on all outer islands by 2023 (baseline 2013: Abaiang is done) 8. Lessons learned and best practices from whole-of-island approach to climate change and DRM are published by 2016			
2) **KEY NATIONAL ADAPTATION PRIORITY – ENVIRONMENTAL SUSTAINABILITY AND RESILIENCE #1[i] & [iii]. Strengthen institutional capacity and the framework for effective conservation and sustainable use of natural resources (KNAP #1[i]) and effective licensing and enforcement systems to protect the environment and enhance the resilience of the people of Kiribati (KNAP #1[iii]).** Develop community-based protected areas and protected species at outer island level. a. Identify required enhancements to the frameworks and institutional capacity to implement community-based protected areas and other natural resource management and licensing and enforcement measures. b. Develop outer island community-based protected areas.	1. The number of community-based protected areas and protected species developed and signed on outer islands 2. The number of controls that have been applied to address the issue on invasive species 3. Invasive species have been generally reduced by 10% by 2020 4. Number of mangroves in the country's coastline increased 5. The number of invasive species network battlers and	Environment and Conservation Division (MELAD)	Kiribati Local Government Association, NGOs, FBOs, Island Councils, ALD,	All development partners, SPREP, international NGOs

STRATEGY 4: INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance Indicator** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
c. Demarcating marine protected areas and conduct monitoring on their status. d. Strengthening community involvement in mangrove replanting and reporting on mangrove and its species health. e. Conduct training and promoting soft/traditional measures and evaluate effectiveness (see also Action 6.3.2) f. Undertake control and eradication measures to combat invasive species. g. Develop networking and outer island counterparts with communities to enhance local participation in maintaining and reporting on the status of invasive species, and impacts on environmental problems affecting community-based protected areas and protected species. h. Identify local counterpart to be trained on environmental issues to carry out invasive alien species monitoring system in outer islands. i. Integrate community-based protected areas and protected species into outer island bylaws and identify supplementary licensing and enforcement actions necessary. j. Conserve island biodiversity through controlling invasive alien species (mynah bird) on all outer islands (starting with Onotoa and Tab North.)	outer island invasive species reporters established 6. The number of trained local counterparts that participated in invasive species monitoring 7. The Island council bylaw integrates the provisions for community-based protected areas and protected species by 2020 8. Invasive alien species (mynah birds) are reduced on Onotoa & Tab North by 10% by 2020			
Result 4.2: Salt-, drought-, rain- & heat-stress resilient crops, fruit, vegetables and livestock breeds are identified and promoted, and communities preserve local food (fruit trees and seafood).				
1) Conduct agricultural research programmes on sustainable and resilient food crop and livestock production systems (including soil–water management techniques in vegetable production, grey water use and wastewater treatment, livestock waste management, pest and disease control, construction, wetlands). a. Upgrade the Agriculture and Livestock Division and its Centre of Excellence research stations and facilities for research related to crops and livestock – Tanaea, Abatao and Butaritari stations (including research and diagnostic equipment for and staff training on field research and analysis). b. Build networks with global specialists to boost the capacity productivity of the Agricultural division and secure technical assistance in priority areas.	1. Increase in household access to fruit trees, roots and tuber crops, vegetables, chicken and cross-breed pigs that are considered resilient to climate extremes and salinity by 2016 and on an ongoing basis (baseline: based on the 2010 National Census, average access to food crops is six crops per household and to livestock (pigs and chickens) is six pigs and/or chickens per household; target is to	Agriculture and Livestock Division (MELAD)	MFED, MFMRD, MIA, Environment and Conservation Division and Lands (MELAD)	Australia's Aid Program, USAID, EU, FAO, UNDP, German Development Cooperation; SPC (Land Resources Division and SOPAC); ACIAR, IFAD, USP

STRATEGY 4: INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance Indicator** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
c. Identify sources and conduct trials and experiments on resilient crops and livestock breeds and evaluate them for their tolerance and resistance to climate change impacts. d. Develop capacity of field and research staff of Agriculture and Livestock Division for conducting agricultural and climate change research. e. Improve diagnostic facilities and personnel of Agriculture and Livestock Division to deal with both crop and livestock pests and diseases. f. Conduct a trial on aquaponic food production system at the Centre of Excellence. g. Establish revolving funds within community-based cooperatives for Agricultural activities	increase these figures by 70%). 2. The number of crop production technologies including hydroponics developed. 3. Crop production and diversity and livestock numbers increased. 4. Agricultural central and outer islands research and major producing stations are well equipped and established with planting materials. 5. Diagnostic and soil mini laboratory upgraded at ALD. 6. ALD staff conducts diagnostics and research on pest and diseases and climate change in relation to crop and livestock. 7. Evaluation report on aquaponic food production system results published. 8. Revolving funds established.			
2) **KEY NATIONAL ADAPTATION PRIORITY – FOOD SECURITY #2, #3 & #4. Strengthen the capability of communities to take practical and sustainable measures to address food and nutrition security (KNAP #2); Increase understanding and community ownership of assets and practices related to food and nutrition security (behavioural change) (KNAP #3); Improve food preservation and storage techniques to avoid food shortages and increase food availability through use of both modern and traditional skills and knowledge (KNAP #4).** (Result 4.3 also contributes to KNAPS #2 & #3; Result 4.4 also contributes to KNAP #4).	1. Number of males and females made aware of (and take ownership of) climate threats to food security and appropriate responses and have capacity to respond. 2. Number of agricultural nurseries and farmers practicing and promoting climate-smart agriculture practices in the areas of crop-diversification, water use, land-	Agriculture and Livestock Division and Environment and Conservation Division (MELAD)	MIA, OB, KMS, Water Engineering Unit (MISE), MFMRD, KNEG, MCIC, MICTTD, NGOs (FSPK, LLEE)	Australia's Aid Program, USAID, EU, FAO, UNDP, German Development Cooperation; SPC (Land Resources Division and SOPAC);

STRATEGY 4: INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance Indicator** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
Design, test, implement and evaluate agriculture production systems and household-level gardening to establish food-secure communities in the face of climate changes and disaster risks at community level. a. Identify and select community pilot sites highly impacted by climate change. b. Establish a multi-sensing and monitoring system for acquiring significant parameters related to agriculture and climate change (e.g., temperature, humidity, solar radiation, soil pH, soil moisture, leaf wetness, pest and disease accounting, carbon dioxide concentration, soil and water salinity). c. Carry out climate change vulnerability assessments and adaptive capacities in agriculture at selected farming communities. d. Document traditional knowledge, among men and women, of cultivation, preparation and preservation techniques for traditional food crops and fruit trees. e. Develop programmes to promote and support food preservation and storage techniques in most climate vulnerable areas. f. Develop community and outer islands awareness programme and demonstration sites to promote nutritionally high-value and climate-resilient crop and livestock production systems (taking into consideration traditional and contemporary knowledge and practices, such as agroforestry, drought/salinity-resilient crops and livestock, sustainable management practices and nutritional value). g. Promotion of leafy plants and nutritious cooking recipes including through radio programmes, newsletters and leaflets and video clips particularly focusing women. h. Develop and promote soil management technologies appropriate for atoll conditions through promoting adoption of planting methods for root crops within local communities and trialling organic compost hydroponic system i. Support implementation and monitoring of existing NGO programmes and leverage government support for training in organic home gardening skills and nutrition in outer islands local communities, with a strong focus on women.	use, compost, and livestock production. 3. Number of food-secure households (in areas/periods at risk of climate change impacts) by male and female-headed households. 4. Number of households reached by food storage and preservation programmes. 5. Increase in the number of households practicing food preservation and storage. 6. Increase in people trained on preservation on food 7. Increase in number of households preserving traditional staple foods 8. Reports, documents, and other awareness and promotional materials on traditional knowledge of food preservation techniques produced and promoted 9. Number of communities and research stations at Ois with multi-sensing and monitoring			ACIAR, IFAD, USP

STRATEGY 4: INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance Indicator** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
j. Support existing NGO and MIA programmes and leverage further support to strengthen replanting schemes for indigenous food crops with cultural significance, e.g. pandanus and breadfruit, including through replanting competitions k. Implement identified actions and monitor progress (such as promotion and enhancement of household agroforestry systems, replanting of traditional and climate-resilient staple food crops (e.g., coconut trees, cassava, sweet potato, etc), upgrading island nurseries, practice of organic and conservation agriculture, composting, mulching and cover crops). l. Evaluate agriculture programmes to identify best practices and lessons learned. m. Replicate good practices on all outer island.	system established and piloted (in collaboration with KMS) 10. Number of extension outreach information resources produced and disseminated. 11. Number of training sessions undertaken and participation by women and men 12. Number of home garden's established 13. Number and % of villages/islands where trainings are offered 14. Number of replanting schemes undertaken 15. Number of local indigenous crops replanted 16. Number and % of villages doing replanting 17. % of coastal areas with beach accretion from protection by vegetation			
3) Improve agriculture services to promote sustainable agriculture management systems and resilient crops and livestock. a. Repair the chicken facility, the feed storage shed and the piggery, and implement water tanks to enhance production. b. Develop and conserve adapted local pig and chicken breeds and feed. c. Improve and promote animal waste management technologies. d. Enhance livestock and crop distribution mechanism to outer islands. e. Develop and distribute livestock and agricultural management guidelines. f. Establish a revolving fund within the Agriculture and Livestock Division to maintain the livestock facility. g. Encourage partner funding and technical assistance for local economic development projects focusing on pork processing, poultry and egg	1. Livestock production is maintained or increases in spite of climate change (within sustainable limits) 2. Increase in number of livestock (pigs and chickens) distributed to Ois (Baseline need to establish by 2014) 3. Increase in number of chicken and pig pens/houses and number of stocks maintained for breeding and improvement	Agriculture and Livestock Division (MELAD)	MIA, OB, KMS, Water Engineering Unit (MISE), MFMRD, KNEG, MCIC, MICTTD, NGOs	USAID, Australia's Aid Program, German Development Cooperation, UNDP, FAO, SPC (SOPAC, Land Resources Division), IFAD

STRATEGY 4: INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance Indicator** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
production, and the production of local feed from local supplies of coconut meat and fish wastes from visiting fishing boats				

STRATEGY 4: INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance Indicator** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
Result 4.3: Communities manage coastal fisheries taking into consideration sustainability of marine resources as well as climate change and disaster risks. [Contributes to KEY NATIONAL ADAPTATION PRIORITIES- FOOD SECURITY #2 & #3.]				
1) Implement Community-Based Fisheries Management (CBFM) in three pilot communities to increase resilience to climate change and make use of potential benefits (such as likely increase of skipjack tuna). a. Identify pilot communities for CBFM. b. Conduct participatory and demand driven fisheries-specific vulnerability and marine resources assessment to plan adaptation activities. c. Document and train women and men on traditional knowledge on fishing, navigation and preservation techniques. d. Develop community and outer islands awareness programme and demonstration sites to promote CBFM (taking into consideration traditional and contemporary knowledge and practices). e. Put in place inclusion targets for women's involvements in CBFM governance and operation. Strengthen technical capacity and skills for coastal ecosystems management and fisheries processing. f. Implement identified actions and monitor progress (such as artificial reefs, preservation of seafood, deployment of nearshore fish aggregating devices [FADs], management plans, establishment of marine protected area, farming of clams, etc.). g. Conduct assessment on fly fishing reserves and extent of beneficiaries. h. Evaluate CBFM programmes to identify best practices and lessons learned. i. Exchange information on and replicate best practices.	1. Increase in household access to oceanic and aquaculture seafood 2. Increased catches as a result of CBFM as demonstrated by at least three vulnerability assessment on fisheries reports published 3. Traditional knowledge and scientific and adaptation messages published as awareness materials and distributed to target communities 4. Adoption of best practices to new identified sites 5. Stock of fisheries maintained (See also indicator 4.2.2.1)	MFMRD	MIA, MELAD, OB, KNEG, island councils, MICTTD	Kiribati development partners such as Australia's Aid Program, World Bank, UNDP, EU, GIZ/German Development Cooperation, UNDP; CROP members such as SPC (Fisheries, Aquaculture and Marine Ecosystems Division and SOPAC), FFA and research institutions such as the Australian National Centre for Ocean Resources and Security (ANCORS), WorldFish, ACIAR

STRATEGY 4: INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance Indicator** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
2) Deploy networks of nearshore FADs to increase access to pelagic fish and reduce pressure on coastal fisheries. a. Identify FAD deployment priority locations and FAD number/budget (i.e., deploy and maintain 50–100 FADs for five years) and ratio of nearshore and deep-water FADs based on a countrywide cost–benefit analysis. b. Identify indicators and develop research plan to monitor FAD impacts/benefits and implement monitoring of catches. c. Identify and secure funding for continuous FAD deployment and maintenance program, with contribution from access agreement condition funding. d. Deploy and maintain FADs, with monitoring of impact indicators. e. Establish awareness programmes and potential regulation on protection and maintenance of FADs in outer island communities to FADs.	1. Increased access of households to oceanic and aquaculture seafood 2. FAD deployed in at least five locations each year 3. Monitoring reports on FADs effects on increasing fish catches and maintenance costs published every second year 4. % of outer island people receiving training on protection and maintenance of FADs 5. Number of penalties issued regarding poor treatment of FADs	MFMRD	MIA, MELAD, island councils, MCIC, OB, KNEG, private sector (such as Kiribati Fish Ltd) and NGOs, fishers (men and women, communities and artisanal fisheries)	Australia's Aid Program, UNDP, EU, GIZ / German Development Cooperation; SPC, FFA, ANCORS, WorldFish, ACIAR
Result 4.4: Communities have constant access to local produce and basic food commodities. [Contributes to KEY NATIONAL ADAPTATION PRIORITY – FOOD SECURITY #4.**]**				
1) Ensure constant and adequate supply of basic food commodities (such as rice, sugar and flour) to increase food security on South Tarawa and outer islands. a. Review current national and island quality and quotas for basic food commodities (rice, flour and sugar) against country and island's needs. b. Conduct weekly monitoring of cargo supplies in all islands with assistance of Council Clerks.	1. Reduction in number of basic food commodities rationing by MCIC 2. Annual review conducted 3. A new Food and Nutrition Security Policy finalised in 2016 4. (See also indicators at 4.2.2)	MCIC, MIA	MOJ, KCCI,	All
2) Enhance domestic trade to strengthen Producer–Market Linkages a. Undertake community awareness and trainings on the production of agricultural and marine local produce for intra-trade, including government support in collaboration with line ministries. b. Establish cooperatives and community-based enterprises focusing on agriculture and marine products.	1. Number of awareness and trainings undertaken 2. Number of agriculture and marine-based cooperatives and community enterprises established	MCIC	MELAD, MFMRD, KCCI	

STRATEGY 4: INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance Indicator** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
3) Ensure timely arrival and distribution of local produce and basic food commodities a. Negotiate a reliable shipping route arrangement with shipping agencies and stakeholders to ensure timely arrival and release of cargo supplies in Kiribati. b. Collaborate with other stakeholders and the private sector to implement a national inter-island transportation framework network to address cost effectiveness and efficiency of collection and transportation of products to and from outer islands.	1. Number of agreements made 2. Regular and consistent order placed from overseas 3. Inter-island transportation framework in place	MCIC, MICTTD	KCCI, shipping lines, private sector (commerce and trade),	
4) **KEY NATIONAL ADAPTATION PRIORITY – FOOD SECURITY #1. Strengthen the institutional and technical capacities of various key sectors for a coordinated whole-of-government approach to improve local food production and address issues with imported food commodities.** a. Review the current framework and sector capacities for coordinating whole-of-government approaches to local food production and imported food commodities. b. Build capacities of various sectors and enhance the framework for, and coordination of action to improve local food production and imported food commodities, in consideration of Action 1.3.1.	1. Key sectors have increased capacity to implement a coordinated approach on local food production and imported food commodities	MELAD: ALD, MCIC	Kiribati Chamber of Commerce, Ministry of Health (Food safety policy), local government, Ministry of Transport (shipping schedule to the outer islands for transporting food items), NGOs (FSP-I, KiriCAN etc.), FBOs	CROP agencies: Secretariat of the Pacific Community (SPC), South Pacific Regional Environment Programme (SPREP), FAO (Asia Pacific Office, Samoa)
Result 4.5: Communities manage their water resources (including during extreme events such as drought, heavy rain and storm surges) (see also Strategy 6).				
1) Develop incentives and strategies for engaging local communities in harvesting and protecting water sources for public water supply and form village water and sanitation committees. a. Conduct cost–benefit analysis for providing free water to the landowners where the reserves are located b. Implement the results of the cost–benefit analysis.	1. Area/number of water catchments and sources protected or rehabilitated 2. Cost–benefit analysis report on providing free water to land owners conducted 3. Number of villages that received awareness	MISE	OB, MFED, MELAD, KiriCAN, FSPK.	All

STRATEGY 4: INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance Indicator** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
c. Leverage capabilities and networks of Kiribati NGOs involved in water catchment management training to implement programmes. d. Develop and conduct education and community awareness programmes on protecting water sources in Kiribati.	materials and/or training from NGOs on the protection of water sources			
2) Strengthen management of water resource during drought. a. Develop drought management plans for all islands of Kiribati. b. Implement drought-response activities for affected islands. c. Develop a water-use Sector Operational Plan during drought for all islands. d. Review drought methodology for South Tarawa. **e.** Support timely response of National Disaster Council and Drought Committee during droughts. * inquire further with Water Division	1. All outer islands have drought-response plans in place by 2016 (baseline 2013: a drought-response plan is in place in South Tarawa) 2. Decrease of reported emergencies caused by droughts. 3. Review carried out on drought methodology for South Tarawa 4. The proportion of water-quality samples with excess WHO standards for parameters such as coliform counts and nitrates is reduced (baselines and targets are parameter-specific and will be established at the National Water Quality Monitoring Committee level)	MISE	National Water Quality Monitoring Committee	All
3) KEY NATIONAL ADAPTATION PRIORITY - WATER SECURITY #4. Strengthening communities' engagement in safeguarding water sources and improving water systems. a. Enhance existing NGO involvement in community education, preparation and capacity building for water infrastructure maintenance and handover, e.g., hand pumps, water tanks. b. Enhance capacity & funds available for community-based water system improvements.	1. Number of water catchments protected under community-based management schemes. 2. Number of water committees established (% of women and men) and implement water system improvement projects	FSPK, KiriCAN, MISE, Red Cross.	MISE, Red Cross	SPC Water and Sanitation Program, Pacific WASH Coalition, WHO, UNICEF,

STRATEGY 4: INCREASING WATER AND FOOD SECURITY WITH INTEGRATED AND SECTOR-SPECIFIC APPROACHES AND PROMOTING HEALTHY AND RESILIENT ECOSYSTEMS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance Indicator** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
c. Enhance coordination between NGOs and MISE in system design and implementation including MISE's capacity to act as technical advisors for community-based water system improvements.	(by number of female-headed households) 3. Number and % of community water system education implemented by NGOs 4. Number and % of involved NGOs meeting minimum standards from the *International Framework on CSO Development Effectiveness*			

STRATEGY 5: STRENGTHENING HEALTH-SERVICE DELIVERY TO ADDRESS CLIMATE CHANGE IMPACTS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
Result 5.1: The public is aware of water safety and proactively reduces the spread of vector-, water- and food-borne diseases.				
1) Develop and provide communities with health information necessary to address health risks of climate change (including specific information targeting young people, people with disabilities, women and men). [contributes to KEY NATIONAL ADAPTATION PRIORITY – HEALTH SECURITY #4] a. Develop and commence implementation of a communication plan b. Prepare communication tools e.g., web portal, brochures, fact sheets, posters c. Develop health-related materials that can be used in the ongoing school curriculum revision d. Develop public/household awareness and education materials e. Develop awareness and education materials that are suited to the diverse needs of I-Kiribati with disabilities	1. An information system for environmental health parameters and disease outbreaks and a reliable system to record and archive environmental health data are in place 2. Universally accessible, multi-format communications tools are developed (See also indicators for 5.2.1 below)	MHMS	MIA, MOE, FBOs, NGOs	EU, WHO, UNICEF, SPC (Global Climate Change Alliance)
Result 5.2: KEY NATIONAL ADAPTATION PRIORITY – HEALTH SECURITY #4: Routine systems for surveillance of environmental health hazards and climate-sensitive diseases are strengthened, and the capacity of national and local health systems, institutions and personnel to manage climate change and disaster-related health risks are enhanced (KNAP #4). (Action 5.1.1 also contributes to this KNAP)**.**				
1) Strengthen routine systems for surveillance of environmental hazards and climate-sensitive diseases. a. Conduct training in environmental health monitoring and data analysis (courses, attachments, on-the-job). b. Establish environmental health information system (under discussion). c. Refurbish and equip environmental health laboratory including equipment, reagents and computers. d. Procure vehicular transportation for environmental health monitoring and response. 2) **KEY NATIONAL ADAPTATION PRIORITY – HEALTH SECURITY #3. Strengthen health intervention programmes for monitoring, surveying and responding to climate-sensitive, climate-induced and disaster-related diseases**	1. Number of functioning early warning systems for water- and vector-borne diseases in priority locations 2. Staff in targeted health institutions with capacity to respond to—and mitigate impacts of—climate-related health impacts is increased 3. 25% increase in outer islands that are engaged in regular environmental health surveillance activities (target and baseline to be established by the end 2015) 4. % decrease in the incidence of climate-related diseases (target	MHMS	MFMRD, MELAD, MISE, MIA	EU, WHO, UNICEF, SPC (Global Climate Change Alliance)

STRATEGY 5: STRENGTHENING HEALTH-SERVICE DELIVERY TO ADDRESS CLIMATE CHANGE IMPACTS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
a. Maintain strong relationship with the Pacific Public Health Surveillance Network, and with MELAD, in outbreak surveillance and response. b. Provide further specialist training to nurses in OI in disease surveillance and how to respond to an outbreak. c. Increase capacity to use data and IT systems for surveillance purposes, including in statistical analysis. d. Strengthen capacity of laboratory so it can provide timely diagnostic responses and review adequacy of equipment and test kits/tools. e. Improve processes for water testing, analysis and reporting of reticulated water supplies and wells, including on outer islands, by ensuring a constant supply of reagents. f. Maintain scheduled water monitoring and, ideally, increase the frequency of testing and monitor a wider range of water sources. g. Undertake initiatives and support multisectoral approaches to climate change adaptation planning, including actively responding to the Disaster Risk Reduction (DRR) measures, and considering both impacts of sea level rise and drought.	and baseline to be established by 2016) (See also indicators for 5.2.1 above)			
Result 5.3: Capacities are enhanced, and equipment provided to the MHMS Central Laboratory and Environmental Health Laboratory to test water and food, conduct vector control activities and analyse results.				
1) Strengthen preparedness for response to outbreaks of climate-sensitive diseases. a. Review and revise processes and procedures of Environmental Health Unit and the Surveillance Committee for responding to disease outbreaks. b. Ensure Environmental Health Unit is equipped with response equipment e.g. vector control kits. c. Establish national outbreak preparedness and response plan. d. Strengthen diagnostic capacity to identify food poisoning cases (ciguatoxins vs food poisoning).	1. A national outbreak preparedness and response plan and a sectoral environmental health plan, which incorporates surveillance and response to climate-sensitive diseases, are in place the end of 2015[13] 2. The EH capacity is strengthened to control vector-related disease outbreaks 3. Data available differentiating specific food poisoning cases 4. Achievement of 7 International Health Regulations core	MHMS	KNEG	EU, WHO, UNICEF, SPC (Global Climate Change Alliance)

[13] Source: Logframe MHMS and SPC Global Climate Change Alliance, 2013.

STRATEGY 5: STRENGTHENING HEALTH-SERVICE DELIVERY TO ADDRESS CLIMATE CHANGE IMPACTS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
e. Build the capacity of CSOs and community umbrella bodies to localise preventive and maintenance work for their own communities' health and welfare.	capacities for surveillance and response			
Result 5.4: I-Kiribati population's general health status is enhanced to be more resilient to climate-related diseases and health impacts.				
1) Reduce incidence of noncommunicable diseases and mental health issues (research and publicise nutrition content of local foods). a. Conduct research on the nutrient content of local foods (mai, babai, kumara). b. Create awareness of the nutritional value of local foods. c. Relate pricing of imported food items to their nutritional values. d. Improve and strengthen coordination between MHMS and its stakeholders including NGOs to address climate change and health-related issues & diseases including mental health and nutrition. e. The public and the health system recognises gender-based violence (GBV) and mental health as a double burden of climate change on health of women. f. Promote and enhance access and awareness of climate change impacts within existing family health clinics. g. Improve evidence base on combined impact of GBV, mental health and climate change on women.	1. Overall health indicators improved using 2004 as a baseline 2. Baseline survey completed 3. The people are aware of the health-related importance of food 4. Increased cost to unhealthy foods and reduced cost of healthy food 5. Number of joint projects 6. Number of family health clinics trained in women's mental health issues, CC and GBV impacts	MHMS	MELAD, MFMRD, MCIC, KCCI. MWYSSA, MOE, KHFA, NGOs, women's community-based organisations	EU, WHO, UNICEF, SPC (Global Climate Change Alliance)
Result 5.5: A national climate change, disaster risk, outbreak preparedness governance framework, response plan and a sectoral environmental health plan, which incorporate surveillance and response to climate-sensitive diseases and disaster risks, are in place.				
1) KEY NATIONAL ADAPTATION PRIORITY - HEALTH SECURITY #1 & #2: Develop a governance framework to guide the health sector's work on climate change and disaster risk reduction (KNAP #1); Improve management, coordination and implementation of health security programmes (KNAP #2).	1. Climate change health security priorities incorporated into the respective agency's governance frameworks 2. Achievement of international health guidance on core	MHMS	NWSCC Members, MELAD: ECD, Red Cross, KHFA, MELAD, ALD	WHO

STRATEGY 5: STRENGTHENING HEALTH-SERVICE DELIVERY TO ADDRESS CLIMATE CHANGE IMPACTS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
a. Scope the development of a governance framework through literature review and advice from external partners to build on global good practice. b. Review existing governance structures to identify gaps and enhancements to integrate climate vulnerability and resilience into strategic goals and operational processes. Use outcomes of the review to integrate climate change vulnerability into management, coordination and implementation of health programmes and services (mainstreaming).	capacities for surveillance and response to climate change 3. Increase in and improvement to level of effectiveness of coordination mechanisms			
2) Strengthen coordination, planning and budgeting mechanism within the health sector. a. Employ two qualified staff to drive and implement the project. b. Prepare a maintenance and financing plan for beyond project life. c. Integrate environmental health information into the MHMS information management system.	1. Increased number of qualified health sector staff as compared with 2011 roster. 2. Environmental health information is captured in the national health database.	MHMS	OB, MFED	EU, WHO, UNICEF, SPC (Global Climate Change Alliance)
Result 5.6: KEY NATIONAL ADAPTATION PRIORITY - HEALTH SECURITY #5. Strengthened support for retrofitting medical facilities and health infrastructure adversely affected by, or susceptible to, the impacts of climate change.				
a. Undertake a vulnerability and/or loss and damage assessment to identify climate change-related impacts and prioritise interventions. b. Develop a comprehensive formal asset maintenance, retrofitting and replacement programme for health infrastructure. Planning and identification of funding for the maintenance and replacement of infrastructure. c. Improve and expand hospitals and clinics to meet the health needs of the community.	1. Number of projects to improve health systems to respond to identified climate risks (to health or infrastructure) implemented according to asset management plan 2. % of hospitals with five specialised services	MHMS	MISE, MFED	EU, WHO, UNICEF, SPC (Global Climate Change Alliance)
Result 5.7: KEY NATIONAL ADAPTATION PRIORITY - HEALTH SECURITY #6. Enhanced Chemical waste management and alternatives to reduce contamination and pollution				
1) Facilitate long-term planning and preparations to respond to the impacts of global climate change in order to build the resilience of the environment through integrated waste management and pollution control programmes undertaken at a national level through MELAD.	1. Area (ha) and natural assets (by type) protected or rehabilitated	Environment and Conservation Division (MELAD)	MHMS	SPREP,

STRATEGY 5: STRENGTHENING HEALTH-SERVICE DELIVERY TO ADDRESS CLIMATE CHANGE IMPACTS				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
a. Build political support for chemical management and institutional and technical capacity to enforce laws. b. Improve chemical infrastructure for identified priority issues, and enhance environmental and chemical monitoring. c. Develop a management plan for landfill and disposal of stored chemicals d. Integrate monitoring of water-borne pollution from poor sanitation into environmental monitoring programmes (from KNAP #5 Water security). e. Enhance regulatory requirements and institutional capacity to generate and share and data. f. Increase awareness and training activities related to chemicals and their management across sectors, key stakeholders, and the wider community. g. Relevant and responsible ministries take initiative in putting in place appropriate evidence-based policies, regulatory regimes and developing action plans for improving the management of chemicals. h. Encourage more participation of private organisations in the planning and implementation of government's development plans, including those related to chemical management activities. i. Mainstream chemical and waste management into national development programmes; and leverage donor support.	from pollution contamination (by source) 2. Number of landfill sites improved 3. Waste recovery facility is managed			

STRATEGY 6: PROMOTING SOUND AND RELIABLE INFRASTRUCTURE DEVELOPMENT AND LAND MANAGEMENT				
Actions, sub-actions and Key National Adaptation Priorities	**Performance indicators** (see note at 4.8)	**Responsible lead agency**	**Support agencies**	**Development partners and CROP members**
Result 6.1: The livelihood of I-Kiribati is improved through public buildings, infrastructure and utilities that are well maintained and resilient to climate change and disasters (climate proofing). [contributes to KEY NATIONAL ADAPTATION PRIORITY – COASTAL PROTECTION AND INFRASTRUCTURE #3]				
1) In alignment with the national programme of school upgrades, retrofit school infrastructure where required to withstand extreme weather events (climate proofing) and relocate if required. a. Assess the vulnerability of the infrastructure of each school in Tarawa and outer islands by end of 2013 (ongoing). b. Develop a plan and implement in stages, starting from northern islands and most vulnerable schools (together with the community where the schools are located). c. Ensure all school retrofit plans apply gender-responsive and universal accessibility design responses, e.g. Red Cross Guidelines (see 6.1.4. below).	1. % of school buildings either relocated or retrofitted after being assessed as at high risk (70% of high-risk school buildings by 2016/17)	MOE	MISE, Lands (MELAD), MIA, MFED	World Bank, EU, ADB, Australia's Aid Program
2) Establish a revolving fund (not the Revenue Equalisation Reserve Fund) to sustain infrastructure projects and their resilience to climate change and hazards. a. Develop an option paper for infrastructure maintenance (linked to the action and sub-actions above), which can be used in discussions to identify the most feasible and sustainable option for approval. b. Consider and develop a cabinet concept paper on the establishment of a revolving fund (linked to the most appropriate option) to present to cabinet (including consultation on scope, fees, types of infrastructure projects, management and operation) for public infrastructures maintenance.	1. % of maintenance costs of public buildings and coastal and water infrastructure covered by the revolving fund (percentage to be established)	MFED	OB, KNEG	PIFS, Australia's Aid Program, EU
3) Retrofit coastal infrastructure (roads, causeways, jetties) to sustain it against threats of climate change and disaster risks. a. Assess the current status of roads, causeways (including the Betio-Bairiki causeway) and jetties in the context of current variability and future trend of climate change and disaster risks. b. Design suitable retrofitting alternatives to strengthen coastal infrastructure that is at high risk. c. Implement pilot retrofitting alternatives to coastal infrastructure that is at high risk.	1. Increase in the % of coastal infrastructure that has been retrofitted after being assessed as vulnerable to climate change and disasters (assessment needs to be carried by 2014)	MISE, MICTTD	To be defined	Any interested partner

d. Plan and implement a maintenance programme for outer island infrastructure ensure existing bridges and causeways remain viable.				
4) Retrofit or relocate public, essential services buildings and emergencies and evacuation centres (including power, fuel and renewable energy installations and facilities). a. Review and assess the building code and/or minimal standards used and status of public and essential services buildings and infrastructure in the context of climate variability and disaster risks. b. Ensure all significant upgrades provide universal accessibility (disability access). c. Employ good practice guidelines for gender-inclusive infrastructure development, e.g., Red Cross Post-disaster Community Infrastructure Rehabilitation and (re)Construction Guidelines. d. Assess and recommend appropriate retrofitting techniques to all public buildings that are under threat from climate change and disaster risks. e. Implement priority recommendations for retrofitting including design, material and techniques to public buildings and infrastructure that are at high risk.	1. Safety standards for infrastructure and construction sectors are adopted by 2020 2. Number of public and community infrastructure in high risks zones assessed and retrofitted/climate-proofed according to safety standards 3. Increase in the number and scale of projects applying gender-inclusive design guidelines	MISE, OB	All ministries, Kiribati Oil Company Ltd, Public Utilities Board, Energy Planning Unit (MISE), MWYSSA	Any interested partner
5) Enhance air transport infrastructure and security to better withstand impacts of climate change and disaster risks. a. Construct runway seawall and runway end safety area to protect runway from sea level rise and erosion and to accommodate relief plane in times of disaster. b. Strengthen navigational capacity through calibration of navigational requirements and installation of navigational aids at every international and domestic airport. c. Improve/rehabilitate all airports (including Canton and Fanning).	1. Kiribati international airport meets basic international standards after rehabilitation 2. Navigational aids installed and being used in 100% of airports nationally	MICTTD	MISE	WB, ADB, any interested partner
6) Enhance sea transport infrastructure to better withstand climate change and disaster risks and provide food and water security. a. Procure and install navigational/radio equipment (including Kiritimati). b. Include risk reduction considerations in rehabilitation of Kiritimati Port. c. Enhance resilience of small-scale wharf, jetty, channel and embarkation infrastructure to enable efficient infrastructure delivery, tourism and provide food security.	3. Navigational/ radio equipment installed in x % of all ships by 2020 4. Disaster risks incorporated into the design of the rehabilitated Kiritimati Port.	MICTTD	MICTTD, MISE, Ministry of Line and Phoenix Development, Office of Attorney General	EU, Any interested partner

Result 6.2: Land and marine planning and management for all islands that provides clear regulations on land development[14] with competent planning authorities strengthened to implement & enforce land and marine use regulatory frameworks and water regulations (see also Strategy 1). [contributes to KEY NATIONAL ADAPTATION PRIORITIES – COASTAL PROTECTION AND INFRASTRUCTURE #2 & 3]				
1) Formulation of land-use plans and development guidelines for all Kiribati islands and strengthen competent land planning authorities at the central and local levels for effective management of contemporary land planning issues considering CC and DRM. a. Strengthen & develop capacity of land planning authority at the central and local levels with relevant trainings, appropriate equipment and software are procured for producing realistic land-use plans. b. Conduct training for all appropriate officers from island councils with formulation of land-use plans and land development guidelines for outer islands. c. Review of existing land-use plans & urban development guidelines incorporating elements of CCA & DRM where necessary. d. Adoption and implementation of land-use plans & land planning development guidelines for all islands in Kiribati. e. Enhance effectiveness and efficiency of development assessment processes for climate-resilient development. f. Urban/rural profiling studies for development of Rural Land Development Plan promoting the Outer Islands Growth Centre Concept ~investigate utilisation of neglected lands at the outer islands to address key issues of food security & decentralisation. g. Designing & implement land planning for resilient communities (urban/rural/highly vulnerable communities) with ability & coping capacity to reduce damages & recover from unpredictable disaster & disturbances.	1. Land-use plans & development guidelines incorporating CCA & DRM have been adopted and training provided in x% of most vulnerable locations 2. Publicly owned land is clearly demarcated by 2019 3. Land-use plans & development guidelines incorporating CCA & DRM are endorsed and implemented for all outer islands by 2018 4. CCA & DRM concerns incorporated into guidelines for the allocation of land for commercial investment 5. Planning authorities are provided with adequate trainings and are fully functional in performing delegated planning roles by 2019 6. Rural Land Development Roadmap is prepared for endorsement by 2015. This Roadmap will complement the Urbanisation Policy (Strategy 1) and outer islands land-use planning 7. Incorporate elements of CCA and DRM in land reclamation plans 8. Communities are better prepared by land-use plans	Lands (MELAD)	MISE, MELAD Agriculture, OB	Any interested partner

	for uncertainties and able to adapt & respond to disasters & changing conditions.			
2) Formulation of marine spatial plans (MSPs) for priority Kiribati waters and strengthen competent marine planning authorities at the central and local levels for effective management of contemporary marine planning issues considering CC and DRM. a. Define and clearly communicate the statutory and planning framework for developing MSPs through inclusive communications in English and I-Kiribati. b. Strengthen & develop capacity of the marine planning authority at the central and local levels with relevant trainings; appropriate equipment and software are procured for producing realistic marine spatial plans. c. Conduct training for all appropriate officers from island councils with formulation of MSPs and accompanying guidelines for outer islands. d. Review of existing marine uses, plans and guidelines incorporating elements of CCA & DRM where necessary. e. Design and deliver training for local island community committees to participate in the development of the MSP. f. Identify overlaps and complementarities with community-based fisheries management plans, community-based mangrove management plans g. Co-design MSPs with affected communities and stakeholders. h. Adoption and implementation of marine spatial plans & guidelines for priority islands in Kiribati in a transparent and inclusive manner.	1. Number of marine spatial plans 2. Number of households in high-, medium- and low-risk zones as defined in marine spatial plans 3. Total hectares of coastal zone protected using national guidelines for marine spatial planning	MFMRD Minerals Division, MFMRD Fisheries Division	MELAD, NGOs	SPREP,
Result 6.3: Building coastal resilience through strategic coastal protection initiatives				
1) KEY NATIONAL ADAPTATION PRIORITIES – COASTAL PROTECTION AND INFRASTRUCTURE #2 & #3: Strengthen national capacity to manage, monitor and protect coastal areas in a coordinated manner (KNAP #2); Develop planning processes and programmes for climate proofing infrastructure throughout Kiribati (KNAP #3). [Results 6.1 and 6.2 also contribute to these KNAPs] a. Development and adoption of a national coastal management policy. b. Conduct coastal vulnerability assessment to identify priority areas, types of intervention required and notification of affected communities (see also action 2.3.5). c. Enhance efficiency, coordination and effectiveness of existing coastline monitoring programmes.	1. Amount of specialised support including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management for coastal protection, including focusing on women, youth and local and marginalised communities. 2. Number of communication and knowledge-	MFMRD, MISE, Environment and Conservation Division (MELAD)	MIA Local Government Division, Island Councils, KiriCAN, FSPK	UNDP, SPREP

d. Preparation of a Strategic Coastline Resilience Plan identifying appropriateness of hard and soft measures at an island and village level and integration with Marine Spatial Plans.
e. Identification of immediately vulnerable areas and preparing a loss and damage assessment for areas at most immediate threat (see also Result 6.5).
f. Integrate outcomes of innovation and pilot projects (from 6.3.3) into Strategic Coastal Resilience Plan and develop appropriate programmes and projects and planning processes.
g. Undertake participatory coastal design, taking into account each community's interaction with the coastline, to develop adaptation options and site-specific interventions.
h. Implementation of coastal protection measures hard measures such as seawalls; artificial beach zone to allow coastal processes to work naturally) and improvement of existing practices.
i. Implementation of coastal protection measures through soft measures such as mangrove planting, beach replenishment, traditional sea walls and coral reef restoration.

management materials and events on shoreline protection and climate proofing infrastructure supported.
3. Increased capacities of regional, national and sub-national institutions to identify, prioritise, implement, monitor and evaluate coastal management and protection strategies and measures.
4. Responsiveness of national stakeholders to evolving coastal protection needs.
5. Specialist/mentor in coastal formation dynamics recruited.
6. National Coastal Management Policy adopted.
7. Strategic Coastline Protection Plan prepared
8. Vulnerable areas identified, loss & damage assessment of areas at most immediate risk conducted
9. Participatory coastal design conducted in four high-risk coastal areas.
10. Participatory coastal design conducted in four high-risk coastal areas.
11. Number of mangroves replanted, km of beach replenished, and coral reefs restored.
12. Number of km of seawall built, artificial beach zone established.
13. Monitoring & evaluation report on coastal management prepared.

	14. Engineering options for coastal management/protection developed and presented to MELAD, MISE, OB/KNEG.			
2) KEY NATIONAL ADAPTATION PRIORITY – COASTAL PROTECTION AND INFRASTRUCTURE #4. Engage communities in becoming active partners in building coastal resilience and reducing hazards and risks related to climate change. a. Build community capacity to participate in coastal resilience monitoring and strategic planning processes and project design. b. Identify entry points for community-level involvement in project implementation and maintenance and associated capacity-building needs. c. Leverage existing NGO capacity to support the development of a network of communities adopting Community-Based Mangrove Management Plans with a constitution recognised by MWYSSA and who adopt traditional seawall construction approaches. d. Investigate approaches to building community ownership of mangrove management plan implementation and traditional seawall construction and identify appropriate support structures, including through island disaster committees.	1. Number of community or island development plans with capacity building on technicalities of coastal resilience. 2. Number of projects developed by island-level actors for coastal resilience.	MIA Local Government Division	NGOs (KiriCAN, FSPK)	UNDP
3) KEY NATIONAL ADAPTATION PRIORITY – COASTAL PROTECTION AND INFRASTRUCTURE #1) Develop bold and innovative engineering solutions to address coastal management issues (coastal protection) and long-term measures to build up our islands through collaborative efforts with potential partners) a. Build relationships with potential partners through the planning process to support innovations in the coastal engineering solutions. b. Strengthen technical capacity within relevant government departments on coastal formation dynamics, coastline vulnerabilities and range of possible interventions and practical solutions that are contextualised to national needs and local circumstances. c. Evaluation of existing measures in selected locations and development of a tool for evaluating likely effectiveness of hard and soft measures in different classes of coastal contexts. d. Development of a set of engineering and project implementation options for coastal management and protection and dissemination in the public domain.	1. Number of new coastal protection initiatives completed 2. Size of new reclaimed and raised land area 3. Coverage/scale of coastal ecosystems protected and strengthened in response to climate variability and change 4. Number and value of physical coastal protection assets made more resilient to climate variability and change 5. Number of technologies and innovative solutions transferred or licensed to promote coastal resilience	MISE	MIA	UNDP (via GCF Coastline Protection Project), SPREP

e. Pilot projects of alternative solutions in coastal management and protection and integrate outcomes into planning and programme design (6.3.1 above).				
Result 6.4: Water reserves are protected, and communities have access to sufficient and adequate fresh water at all times (including during extreme events such as drought, heavy rain and storm surges; see also Strategy 4) and to improved sanitation facilities.				
1) KEY NATIONAL ADAPTATION PRIORITY – WATER SECURITY #1. Strengthen national water governance so all key stakeholders are enabled to perform their allocated functions in a coordinated manner to address all water issues, including the impacts of climate change, climate variability and natural disasters. a. Convene the National Water and Sanitation Coordination Committee (NWSCC) as the key body charged with implementation of KJIP Key National Adaptation Priorities for water security. b. Undertake stocktake of actions and gap analysis of the National Water Resources Policy and Implementation Plan with respect to the KJIP and develop annual workplans and reporting against the KJIP. c. Identify capacity needs and projects to further strengthen sector governance.	1. National Water and Sanitation Coordination Committee regularly reports collective progress on implementation of the KJIP water security KNAPs.	MISE	MIA, MHMS, MELAD: ECD, Betio Town Council, Teinanano Urban Council, KiriCAN, FSPK, KANGO, MFEP	EU, Australia's Aid Program, ADB, UNICEF, SPC (SOPAC)
2) Identify and assess potential groundwater sources (and capacity), taking into consideration current variability and climate change projects on all islands.[15] a. Conduct water reserve assessments on all the islands of Kiribati including Line and Phoenix Groups (including sustainable yield estimation of major groundwater resources). b. Provide training on the application of inundation models developed for the Bonriki water reserve and its applicability to other similar water reserves or water protection zones. c. Establish and provide training on GIS and database applications for water resource management and monitoring of water quality, infrastructure standards, water systems and potential yield of groundwater resources on all islands. d. Link infrastructure level of service assessments to project identification, and development and budget processes. e. Develop water maps that integrate seasonal climate predictions and water availability f. Implement appropriate water sources in 18 pilot sites. g. Conduct education campaign to explain the results of assessments and dangers of over-pumping to communities.	1. Water reserve assessments conducted and data on sustainable yield available for all islands 2. GIS being used for water resource management and monitoring 3. Water maps developed with integrated seasonal climate predictions and water availability 4. The number of communities made aware of dangers of over-pumping	MISE, MIA	MOE, MHMS, MELAD, FBOs (e.g., Mormons)	EU, Australia's Aid Program, ADB, UNICEF, SPC (SOPAC)

[15] Ongoing with KIRIWATSAN, USSKAP, and past work of KAPII (North Tarawa, Tab North and Tamana).

3) KEY NATIONAL ADAPTATION PRIORITY – WATER SECURITY #2 & #3: Enhanced support and enforcement of regulations for water security and safety issues (KNAP #3) and Provide efficient harvesting systems and innovative solutions to water availability issues (water availability, quality and quantity) (KNAP #2). Identify and implement most appropriate technological and sustainable management measures to increase water safety (quality and quantity) at village level based on assessments of groundwater resources (see action above) and assessment of rainwater catchment capacity on outer islands (private households, public buildings such as schools, government offices, health centres, churches and Maneaba). a. Identify most appropriate water sources and technological actions such as infiltration galleries; protection of household wells from wave overtopping, contamination and heavy rain; rainwater harvesting; desalination plants. b. Conduct cost–benefit analysis for the different options to select the most appropriate approach. c. Education and awareness for Councils and communities to support, assist and provide oversight over rain harvesting projects, including offering own tools, resources and labour to speed up projects; d. Implement appropriate selected actions, including but not exclusively the following: – Establish a selection of guidelines and asset management plans for the delivery and maintenance of rainwater harvesting schemes to every household. – Identify suitable regulatory responses and enforcement approaches to enhance water security and safety, e.g., managing unsuitable settlement, land-use planning, building code compliance for rainwater harvesting. – Provide rainwater harvesting facility to households in compliance with the building code through loans scheme. – Install infiltration galleries at village level on outer islands. – Implement appropriate water sources in 18 pilot sites.	1. Number of staff trained to respond to—and mitigate impacts of—climate-related events where water supplies are affected 2. Number of new tanks for rain water harvesting installed (KDP indicator) 3. Number of males and females with year-round access to reliable and safe water supply despite climate shocks and stresses 4. Number of hand pumps installed (KDP indicator) 5. % of household accessing potable water 6. Increased coverage of: water and sanitation 7. The number of water sources and technologies identified 8. Cost–benefit analysis report produced 9. 15% increase in the number of households and public buildings with rainwater catchments by 2013 and a 30% increase by 2018 10. 50% increase in number of households and community systems that are connected to the public water supply by 2018 11. % of household accessing portable water	MISE	MHMS, KiriCAN, FSPK	Any interested donors, World Bank
4) As part of the South Tarawa Drought-Response Plan, reduce water wastage and losses and rehabilitate and increase the coverage of reticulated water supply on South Tarawa (including protection and refurbishment of the Bonriki Water Reserve). a. Provide training and equipment to Public Utilities Board in leakage detection.	12. Training and equipment provided for leakage detection 13. % of detected and repaired losses in transmission and distribution lines	Public Utilities Board	Betio Town Council, MISE, MOE, KIT and private sector	Australia's Aid Program, EU, World Bank, ADB, UN, any interested partners, SPC

b. Detect and repair losses in transmission and distribution lines. c. Deploy water meters on all connections to encourage water conservation. d. Replace pumps at existing infiltration galleries and install additional infiltration gallery at Bonriki, treat chlorine gases with powered chlorine system, and aerate and rehabilitate chambers. e. Integrate rainfall monitoring by KMS into the plan. f. Implement regular water quality and supply monitoring and reporting.	14. % of water metre connections coverage 15. % of pumps replaced			
5) **KEY NATIONAL ADAPTATION PRIORITY – WATER SECURITY #5 Ensure access to improved sanitation facilities, including monitoring the impacts of pollution sources.** Develop sanitation and an open defecation-free environment for improved health in support of adaptation initiatives. (SMEC project) a. Rehabilitate existing sanitation infrastructure on South Tarawa (including outfalls, pumping stations, saltwater supply system). b. Develop appropriate, acceptable and affordable on-site sanitation designs for non-sewered water supply systems for South Tarawa and outer islands. c. Incorporate on-site sanitation designs in the building code and implement inspection and monitoring of impacts. (See also Action 5.7.1) d. Implement initiatives to eliminate open defecation on both South Tarawa and outer islands and support island councils in this task. e. Construct and support community and school toilets and hand wash facilities.	1. Percentage of households with suitable toilet facilities 2. Indicators of sanitation markedly improved from a 2004 baseline 3. Baseline survey completed using improved national indicators 4. Sanitation infrastructure rehabilitated 5. Appropriate sanitation designs developed and incorporated in building codes 6. % of outer islands adopting the elimination of open defecation initiatives (Kiribati to be ODF [Open Defecation Free] by 2015) 7. Number and percentage of communities and schools with hand wash and toilet facilities	MISE, MIA	MHMS, MELAD	Any interested partners
6) Develop and implement asset management plans for water and sanitation resources a. Gather data for development of asset management plans. b. Develop asset management plans c. Conduct capacity building (training) on implementation of plans. d. Establish and support revolving fund for ongoing maintenance of community water and sanitation systems.	1. Asset management plans are in place for all community and government infrastructure by 2018 (baseline 2013: number of government assets with asset management plans)	MISE, MIA	MHMS, MELAD	Any interested partners
Result 6.5 KEY NATIONAL ADAPTATION PRIORITY – UNAVOIDABLE CLIMATE CHANGE IMPACTS #2. Establish financial mechanisms to address the risks facing community and public assets (with a focus on climate risk insurance and building on existing initiatives and programmes) (See also Actions 10.2.3 and 10.3 that contributes to this KNAP)**.**				

1) Identify private and public lands and property at risk of reduction/ disappearance due to climate change impact a. Conduct a technical cadastral survey of risk areas to identify individual land parcels therein and respective owners/users b. Include notation on the records of such parcels in the Land Registry to indicate the risk of reduction/disappearance due to climate change c. Notify owners, tenants and other stakeholders of assessed risks	1. Increase in application of appropriate adaptation responses for land and property loss as a result of climate impacts 2. Responsiveness of national stakeholders to evolving loss and damage scenarios and needs 3. Number of technologies and innovative solutions transferred or licensed to mitigate loss and damage 4. General land-use plan for government owned land 5. Cadastral survey of coastal lands conducted 6. Land records updated to indicate risks related to climate change impact 7. Owners/tenants notified	MELAD Lands Division, MELAD Town Planning Division.	MFMRD, MWYSSA	Global Land Tools Network, UN Habitat, UNDP, International Organisation for Migration (IOM), national development partners (MFAT, DFAT, JICA, KOICA, GIZ)
2) Develop policy options for compensating landowners for loss of property due to climate change impact a. Conduct land valuation of parcels deemed at risk b. Identify and conduct valuation of pool of state-owned lands (not at risk) for potential compensation in the form of land swap. c. Develop a proposal for monetary compensation criteria and a mechanism for landowners affected by climate change	1. Land valuation of lands at risk conducted 2. Proposal for compensation mechanism for landowners affected by climate change developed	MELAD Lands Division, MELAD Town Planning Division.	MFMRD, MWYSSA	Global Land Tools Network, UN Habitat, UNDP, International Organisation for Migration (IOM), national development partners (MFAT, DFAT, JICA, KOICA, GIZ).

Actions, sub-actions and Key National Adaptation Priorities	Performance indicators (see note at 4.8)	Responsible lead agency	Support agencies	Development partners and CROP members	**Result 7.1: Students and professionals have capacities to take action on adaptation, and risk reduction and coping strategies before, during and after disasters and emission mitigation.**
1) Define, specify and monitor climate change and disaster risk management learning outcomes and content in the national curriculum for formal primary and secondary education, including agriculture and livestock, fisheries, water, environment and health (based on Education for Sustainable Development principles – ongoing). a. Targeted outcomes for teachers and students on CCA and DRM reflected in the strategic plan and education policies of the MOE. b. **KEY NATIONAL ADAPTATION PRIORITY – CAPACITY BUILDING AND EDUCATION #1: Update and provide accurate and contextualised materials and information on climate change and disaster risk for use in conjunction with Kiribati's national curriculums** c. Incorporate relevant topics, learning outcomes and content on climate change and DRM, along with other areas, into syllabi of Years 3–6, Years 7–9 and Years 10–12 based on consultation outcomes and framework (including quality assurance). d. Consult on the national curriculum in the Gilbert and Line Groups (Kiritimati).	1. Number & % of teachers trained in CCA/DRM. 2. Improved student outcomes in CCA/DRM 3. Climate change and disaster risk management elements are integrated into the national curriculum for primary schools, junior secondary schools by 2017 4. Integrate emerging developments in ICT into curriculum and school operations to include priority technologies for climate change adaptation, e.g. data analysis, qualitative research capture, asset management. 5. Increase in number of extra-curricular activities on climate change and disaster risk	MOE (Curriculum Development and Resource Centre)	MELAD, OB, MFMRD, MISE, MHMS, MEHR, KNEG, Sandwatch Network, FSPKI, other NGOs	Australia's Aid Program, German Development Cooperation, UNESCO, UNICEF, SPC, SPREP, international NGOs such as Plan International

e. Develop teaching materials and incorporate relevant content and methods, in English and Kiribati, into teacher guides (including quality assurance). 2) Incorporate climate change, DRM and other related areas such as ICT, agriculture, livestock, environment, fisheries, water and health into KTC's pre-service primary, junior secondary and senior secondary school (JSS & SSS) teacher training programme and teacher professional development training (in-service programmes – ongoing). a. Pre-service and teacher professional training materials are developed for TVET programmes that integrate CCA & DRM for JSS level. b. JSS teachers in charge of TVET programmes that integrate CCA & DRM have been trained on how to deliver the program. c. Train KTC lecturers on the curriculum content on climate change, DRM and related areas and on TVET teaching and delivery approaches and strategies to these subjects. d. Write pre-service and TPD courses, training materials and facilitator guides. e. Conduct teacher professional development trainings for all in-service teachers in South Tarawa and on all outer islands, including on disability inclusive teaching methods. f. Train student teachers at KTC based on revised courses in line with the new curriculum including climate change, DRM, waste management, pollution control and related areas (pre-service).16 g. Provision of resources to support the delivery of CC, DRM and related areas for Pre-service and in-service programmes. h. Train KTC lecturers, teacher trainees on the use of ICT as a delivery approach to training programmes on CCA & DRM.	management conducted by schools (target and baseline to be established by 2015) 1. KTC lecturers have incorporated knowledge gained in Professional Development (PD) trainings on climate change, DRM and related areas into teacher guides by end of term 2 of 2014 2. Pre-service and TPD training materials and facilitators guides writing on CC DRM and related areas for different year levels completed by end of term 3 2018 3. Kiribati teachers have incorporated knowledge gained in PD workshops on climate change, DRM and related areas and on delivery approaches and strategies into lesson plans for: Year 1, 2, & 3 by end of term 3 2019. Year 4, 5 & 6 by end of term 3 2020. Year 7, 8 & 9 by end of term 3 2022 4. New pre-service courses in delivering CC, DRM and related areas developed: Teaching Primary by 2018. Teaching JSS by 2020 5. Student and teacher resources are available in English and Kiribati for the different year levels: Year 1, 2 & 3 by end of term 3 2019. Year 4, 5 & 6 by end of term	MOE (KTC)	MELAD, OB, MFMRD, MISE, MHMS, MEHR, KNEG, Sandwatch Network, FSPKI, other NGOs	Australia's Aid Program, German Development Cooperation, UNESCO, UNICEF, SPC, SPREP, USP; international NGOs such as Plan International

[16] Based on the national curriculum, national teaching materials and teacher guides and the picture-based teaching resource *Learning about Climate Change the Pacific Way' (SPC/GIZ 2013), the Kiribati Climate Change Framework for primary, junior secondary and senior secondary levels (*UNESCO, 2012) and other resources.

	3 2020. Year 7, 8 & 9 by end of term 3 2022			
3) Integrate relevant climate change and disaster risk management content and skills into Technical and Vocational Education and Training. a. TVET programmes that integrate CCA & DRM are incorporated at a policy level. Integrate TVET for CCA & DRM at the policy level MOE, Education Sector Strategic Plan (ESSP), and Education Policy. Integrate TVET for CCA & DRM at the senior secondary school (SSS) and Tertiary education level. Conduct awareness campaign for new TVET policy (partly ongoing). Integrate already identified competencies and learning outcomes into existing training programmes of Fisheries Training Centre, Marine Training Centre, School of Nursing and Kiribati Police Service. Conduct training need analyses with relevant TVET training providers. Train lecturers on strategies for teaching about climate change and DRM. Develop and/or provide sector-specific and generic training materials on climate change and DRM.	1. Climate change and disaster risk management elements are integrated into the TVET syllabus by 2019 2. Assessment results show that students achieve competencies for climate change and disaster risk management 3. Increased number of people with disabilities are participating in vocational and employment programmes	MEHR (KIT, FTC, MTC), MHMS (School of Nurses), Kiribati Police Service	Apprenticeship Board, MTC, FTC, KIT, regional TVET bodies	Australia's Aid Program, New Zealand Aid Programme, German Development Cooperation, UNESCO, SPC, SPREP, USP
4) Develop and implement a human resource development plan to support long-term climate change adaptation and DRM. a. Assess capacity gaps and needs for climate change adaptation and DRM. Identify training programmes and resource needs, and align to pre-service and public service training programmes on climate change adaptation and disaster risk management skills (water engineers, coastal engineers, ocean modellers, climatologists, meteorologists, entomologists, psychologists). Develop new human resource development policy for NSA procedures, along with a training manual. Facilitate the breaking down of occupational gender stereotypes to enhance women's involvement in key sectors. Include gender inclusion and gender responsive as learning modules in key agencies' internal organisational learning and development programmes.	1. Increase in the number of I-Kiribati with qualifications related to climate change and disaster risk management by 2020 (tertiary qualifications, professional on-the-job training certificates, attachment certificates; target and baseline to be established by 2018)	Public Service Office	OB, KNEG	Any interested partners
Result 7.2: The I-Kiribati population is well informed, and all stakeholders have access to up-to-date and accurate, contemporary and traditional information on climate change and disaster risk management (see also Strategy 2) and communities take voluntary action to reduce climate change and disaster risks.				
1) **KEY NATIONAL ADAPTATION PRIORITY – CAPACITY BUILDING AND EDUCATION #2. Increase formal and informal capacity-building programmes, which will contribute to awareness and resilience building for Kiribati. These may include competencies, skills and expertise that**	1. Increase in number of CCA and DRM capacity-building	OB, MOE	KRCS,	

are needed to support climate change adaptation, mitigation and disaster risk reduction a. Review the scope, relevance, and reach of existing climate change and disaster risk management capacity-building programmes nationally and internationally with input of development partners. b. Adapt and/or develop capacity-building programmes on climate change and disaster risk management to raise awareness and build resilience for I-Kiribati c. Implement climate change and disaster risk management capacity-building programmes in line with the priority areas identified in this Plan (See Actions 1.3.1, 2.2, 4.1.1, 5.1, 7.2.1, 7.2.2, 8.1.2, 12.1.3).	programmes (formal and informal) 2. Number of people participating in CCA and DRM capacity-building programmes annually (disaggregated by gender and disability status)			
2) Strengthen the capacity of community-based organisations to provide training and awareness on climate change and disaster risk management to communities (churches, NGOs, etc.). a. Train NGO staff with training-of-trainers approach on community-based climate change and DRM (including integration of climate change and DRM in the design, implementation and evaluation of projects with communities). Conduct awareness workshop in villages (outreach). Improve planning to make programmes sustainable by developing NGO Action Plan with long-term objectives and providing grant-writing training to long-term projects. Build advocacy skills on climate change and DRM among community-based organisations. Teachers in primary and secondary schools have been trained to link what is taught in the classroom to CCA & DRM activities happening in the community. Teachers and students are involved in awareness community-based awareness programmes and focus on inclusion of vulnerable groups. Mainstreaming CCA & DRM in ESSP and basic SSS curriculum reform.	1. Increase in number of community-based organisations providing training to communities on climate change and disaster risk management initiatives (target and baseline to be established 2019) 2. All new climate change and disaster risk management awareness, education and training materials include up-to-date and accurate, locally relevant, contemporary and traditional knowledge	NGOs such as KiriCAN, Pacific Calling Partnership, Caritas, EcoCare, FSPKI, Sandwatch Network, Te ToaMatoa, MIA	KNEG, KRCS	Australia's Aid Program, German Development Cooperation, UNESCO, UNICEF, New Zealand Aid Programme; SPC, SPREP, USP; international NGOs such as Plan International
3) Strengthen capacities of media outlets, government departments, NGOs and FBOs to deliver messages on climate change and DRM. a. Messages follow the Kiribati CC and DRM Communications Strategy currently being finalised. The Strategy is implemented according to the activities outlined in the workplan. Develop a media programme to convey climate change and DRM issues based on the Strategy in radio, newspaper and television. Develop plays or dramas on climate change and DRM based on the key messages outlined in the Strategy.	1. Media outlets, government departments, NGOs and FBOs use common key messages for CC and DRM communications in Kiribati 2. The Kiribati CC and DRM Communications Strategy is implemented	OB, KJIP Secretariat Environment and Conservation Division (MELAD), Kiribati Broadcasting,	MIA	Australia's Aid Programme, EU, UNESCO, UNICEF, New Zealand Aid Programme, German Development Cooperation, SPC (Global

Ensure communications programmes include key gender-responsive messages to encourage attitudinal and behaviour change amongst: men to discourage gender-based violence, and amongst women to taken on leadership roles and around environmental management.		Youth Group Caritas		Climate Change Alliance), SPREP, USP; international NGOs
Result 7.3: The I-Kiribati population (inclusive of vulnerable groups) are well qualified with formal and TVET forms of qualification to improve employability in-country and outside of Kiribati.				
1) Generate further employment opportunities in international markets. a. Form a task force across key ministries, training institutions and the private sector. b. Conduct a tracer survey for Kiribati people with significant vocational qualifications. c. Analyse skill gaps for international labour market requirements against existing vocational training. d. Redesign vocational courses with assistance from local technical experts. e. Make a marketing/promotional visit to Australian employers for employment opportunities in accommodation, cotton, sugar cane and aquaculture industries. f. Negotiate with Technical and Further Education South Australia for future employment opportunities for KIT graduates. g. Integrate labour mobility goals into trade agreements and strengthen MCIC in negotiations. h. Undertake labour marketing/promotion in overseas markets.	1. Increase in remittances from this overseas employment (target to be established) 2. Increase in number of I-Kiribati employed overseas (target to be established)	MEHR, MCIC, MFAI	OB, KNEG, MOE, MHMS, MTC, Kiribati Australia Nursing Initiative, KIT, FTC, KCCI, MHMS, Apprenticeship Board, private sector	Australia's Aid Program, New Zealand Aid Programme, UNESCO, SPC, USP, South Pacific Tourism Organisation, FFA, Fiji National University
STRATEGY 8: INCREASING EFFECTIVENESS AND EFFICIENCY OF EARLY WARNINGS AND DISASTER AND EMERGENCY MANAGEMENT				

Actions, sub-actions and Key National Adaptation Priorities	Performance indicators (see note at 4.8)	Responsible lead agency	Support agencies	Development partners and CROP members
Result 8.1: KEY NATIONAL ACTION PRIORITY – DISASTER RISK MANAGEMENT #1: Strengthening disaster risk preparedness (through innovative technology), response and recovery across all sectors including, importantly, at the island and at the community level to reduce loss of life, injuries, damage to infrastructure and properties.				
1) Enhance governance institutional arrangements for disaster management at national and local levels (National Disaster Management Office; Island Disaster Committee). a. Formalise a policy for the National Disaster Council to provide a quarterly report to the Development Coordination Committee meetings. b. Establish the National Disaster Management Office with full-time staff and resources within government structure. c. Establish Island Disaster Committee within island councils' legal framework and authority. d. Establishment and activation of island DRM committees with equal representation of women and with representation of people with a disability. e. Develop community disaster plans in pilot villages to guide community response in disasters. f. Ensure island-level DRM plans are prepared with the advice CSOs representing people with a disability. g. Equip and build capacity of island disaster committees with the relevant technology and early warning systems they may need to prepare and respond.	1. Number of community outreach awareness-raising programmes on climate change and disaster risk management carried out and population reached (% female & people with a disability) 2. Effectiveness of disaster preparedness and response and recovery programmes and services is increased. 3. Number of males and females made aware through culturally appropriate communications methods of short-term (emergency) and long-term climate threats and related appropriate and realistic responses 4. Increase in number of island and town council Strategic Plans that incorporate climate change and disaster risk	OB, National Economic Planning Office, KRCS, FSPK	MIA, outer island councils, MOE, FBOs, MHMS, NGOs, Kiribati Police Service	EU, World Bank, SPC, SPREP, any interested partners
2) Strengthen effective preparedness, response and recovery arrangements by reviewing the airport and other communication; developing Sector Operational Plans, hazard support plans, training and awareness campaigns; and establishing stock distribution centres, emergency evacuation plans and trialling them. a. Construct a permanent National Disaster Risk Management Office with all appropriate equipment.		OB, Kiribati Police Service, all ministries, KRCS, Kiribati Customs and Quarantine.	MIA, Outer Island Councils, MOE, FBOs, MHMS, NGOs, OB, MICTTD	EU, World Bank, SPC, SPREP, any interested partners (NZ Navy, Australian Navy

b. Review airports/airstrips and ensure they are functioning with relief support and communication equipment in the outer islands that can be used to issue early warning and disaster response.
c. Support the implementation of Strategic Roadmap for Emergency Management (SREM)
d. Develop and consistently test Standard Operating Procedures for the National Emergency Operation Centre.
e. Develop hazard support plans and models of key hazards that pose threats (drought, fire, loss at sea, tsunami, and storm surges) and integrate DRM issues identified in sector-specific assessments.
f. Develop models that can better assist in understanding hazards (tsunami, storm surges).
g. Conduct capacity-building programmes to enhance staff performance in disaster risk management.
h. Conduct community awareness campaigns and training for community leaders, women, youth and other groups (considering community roles of women and men) on all hazards, in local languages.
i. Establish and stock distribution centres of non-food items in collaboration with Red Cross
j. Develop a strong disaster information system that can enhance information sharing between National Emergency Operation Centre and outer islands in Gilbert, Line and Phoenix Groups.
k. Develop and test emergency evacuation plans for businesses, offices, schools, hotels, guest houses and hospitals for fast-onset hazards (fire and tsunami) and establish annual drill programmes in all sectors.
l. Strengthen interoperability of emergency services (Police, Health and National Disaster Management Office).
m. Review the capacity of the Police Service and implement fire-fighting priorities.
n. Facilitate process for Kiribati Fire Service to become member of Pacific Islands Fire Services Association.
o. Work with community policing and develop community awareness of fire safety.
p. Conduct in-country training on search and rescue for both maritime and land-based rescues.
q. Improve the skills of the Police Maritime Unit to include management and leadership training.
r. Upgrade equipment to perform search and rescue, including communications equipment for all operations of the patrol boat.

management considerations by 2015
5. Number and % of island DRM committee established and activated
6. % of islands with DRM
7. Island DRM and CCA plans developed and implemented verified by meeting reports
8. Number of programmes to mitigate against climate change and number of programmes to assist with adaptation to climate change
9. Infrastructure losses due to disasters are reduced by 2023
10. Reported cases of injuries and fatalities due to disasters are reduced (baseline to be established, to be disaggregated by sex, age and people with disabilities)
11. Biosecurity Bill developed and adopted.
12. Number of sector plans reviewed, and actions implemented to respond to objectives of the Biosecurity Bill.

for the Police Maritime Unit)

s. Distribute material support at a community level in the form of buckets, kits, reconstruction tools, to be available to support with disasters. **KEY NATIONAL ADAPTATION PRIORITY – ENVIRONMENTAL SUSTAINABILITY AND RESILIENCE #1[iv]: Effective enforcement at Kiribati's ports of entry to safeguard its fragile environment from external threats.** t. Identify pest and disease problems, develop and promote control methods, strengthen capacity to respond to pest problems including enhanced border security and develop the Biosecurity Bill in response. u. Review customs and quarantine sector and operational plans to identify required enhancements to the frameworks and institutional capacity to implement biosecurity enforcement measures. v. Implement identified measures in accordance with the sector plans and Biosecurity Bill.				
3) Increase the capacity of services to address the specific needs of people with disabilities and other vulnerable people during times of emergency (training, shelter availability, disability mainstreamed in disaster action plan). a. Provide training for carers, families and teachers on first aid (including men and women) ensuring information and communications methods are appropriate. b. Provide training for emergency personnel on mobilising people with disabilities (including gender considerations). c. Designate a safe space where people with disabilities can go in disasters (including gender considerations). d. Develop an island-specific disaster plan in consultation with people with disabilities, including provision of rations, water, blankets and emergency equipment as required, taking into account traditional protocols and governing systems). e. Maintain a register of vulnerable people at council level with the specific support needs of each vulnerable person registered for emergency management purposes. f. Ensure that engagement methods for DRM training are sensitive to barriers to participation that vulnerable people and socially isolated women may experience.		MHMS, Kiribati Police Service, MIA, OB	KRCS, Marine Training Centre, FTC, Kiribati Rehabilitation Centre, churches, businesses, village councils	EU, World Bank, UNICEF, SPC, SPREP, any interested partners
4) Ensure all emergency and disaster management initiatives are responsive to gender. a. Develop and deliver gender sensitivity training for all emergency and disaster management personnel.		MIA, MWYSSA	OB, KRCS	EU, World Bank, UNICEF, SPC, SPREP, any interested partners

5) **KEY NATIONAL ADAPTATION PRIORITY – DISASTER RISK MANAGEMENT #3. Enshrine principles of "humanitarian assistance" and "building back better" when responding to, or recovering from the impact of disasters and ensure that these efforts take into consideration the risks associated with climate change.** a. Review disaster risk management-related policies, plans, legislation, programmes and initiatives for alignment with and incorporation of "humanitarian assistance" and "building back better" principles. b. Incorporate principles of "humanitarian assistance" and "building back better" into new and existing disaster risk management-related policies, plans, legislation, programmes and initiatives as required. c. Ensure objectives of social inclusion are reflected in relevant plans, policies and legislation, including post-disaster needs assessment and response.	1. Percentage of disaster risk management-related policies, plans, legislation, programmes and initiatives reviewed and updated	MIA, MWYSSA	OB, KRCS	UNISDR, EU, World Bank, UNICEF, SPC, SPREP, any interested partners
6) **KEY NATIONAL ADAPTATION PRIORITY – UNAVOIDABLE CLIMATE CHANGE IMPACTS #1. Enhance understanding of loss and damage (through data collection and vulnerability analysis) to better position Kiribati to engage with and receive support from regional and international initiatives that will address national priorities and concerns.** (Actions 2.1.1 and 2.2.1 also contribute to this KNAP). Create awareness (international and national) on disappearance of islets and immediate needs of the country. a. Monitor the disappearance of islets, undertake vulnerability analysis and identify areas of the country at immediate risk from climate change-related phenomena, and collect other loss and damage information. b. Compile damage/loss and risk findings into a high-profile report to be distributed to national and international audiences. c. Design and implement a periodic international public information and awareness campaign to rekindle the debate on Kiribati's climate change vulnerabilities and needs.	1. Risk and vulnerability assessments, and other relevant scientific and technical assessments carried out and updated. 2. Number of early warning systems on land disappearance established, disseminated and communicated. 3. Climate information on land disappearance used in decision making by governments and key stakeholders. 4. Data on disappearance of islets and areas at risk compiled 5. Climate Change impact Report produced and distributed 6. PIA campaign commissioned and implemented.	MELAD	OB, KNEG, MFAI, MFMRD	SPREP,

Result 9.1: KEY NATIONAL ADAPTATION PRIORITY – ENERGY SECURITY #1: Promote and enhance the transition towards renewable energy sources.

1) Maintain grid stability with high solar penetration a. Develop standards and guidelines for future solar photovoltaic grid-connected systems. b. Build capacity to manage high levels of grid-connected solar installations. c. Automate diesel gensets and provide appropriate storage technology to power utilities. d. Investigate options of connecting more renewable energy to the grid in Tarawa and Kiritimati. e. Investigate the appropriateness of privately owned solar photovoltaic grid-connected systems, including feed-in-tariff and/or net-metering. f. Develop best practice regulations and standards for the safe and reliable supply, generation, transmission and distribution of power in urban and rural institutions.	1. Increase in level of output from renewable energy sources (Kw) 2. Increased share of grid-connected renewable energy. Baseline: 0% solar energy intermittent in 2013; target 60% by 2025) 3. Best practices, standards and regulations understood and put into practice for electrical supply and distribution in urban and rural areas 4. Intermittent renewable energy reaches parity with standard grid power 5. Power utilities functioning at a higher efficiency due to automation and storage technology 6. Policy established and implemented for encouraging feed-in-tariff and/or net-metering	MISE (Energy Planning Unit), Public Utilities Board	Environment and Conservation Division (MELAD), MFED, MIA	Australia's Aid Program, EU, ADB, New Zealand Aid Programme, German Development Cooperation; SPC, PIFS; SPREP, International Renewable Energy Agency

	Electricity Act approved and enforced. 7. New solar PV systems in South Tarawa fully operational			
2) Strengthen coconut oil (CNO) capacity for biofuels a. Develop a coconut oil implementation plan for Kiribati to determine the specific actions and sub-actions and timelines necessary to develop coconut oil as an acceptable diesel fuel replacement. b. Establish fuel standards and a testing facility for coconut oil-based biofuel to be used for power generation and transport c. Develop a mobile copra mill for Biodiesel production and refining for use on outer islands. d. Conduct a feasibility study on the use of small-scale, mobile crushing mills for the preparation of adequate quality CNO for biofuel on outer islands e. Develop industry scale CNO biodiesel plant for Kiritimati and Tarawa. f. Support the Power utilities to procure a genset designed for use with CBI for base load generation.	1. Roadmap developed for substituting diesel fuel with coconut oil biofuel for power generation and transportation 2. Testing facility established and CNO Biofuel meets required standard 3. Feasibility study report provided 4. Establishment of industry scale CNO biodiesel plant. 5. Dual fuel gensets installed 6. Increase in usage of biofuel as compared to diesel fuel in Kiribati	MISE (Energy Planning Unit), Public Utilities Board, Kiribati Copra Mill Company Limited, MELAD	Finance, MCIC	Australia's Aid Program, EU, ADB, New Zealand Aid Programme; SPC, PIFS; SPREP, International Renewable Energy Agency
3) Increase use of and enhance funding for renewable energy for off-grid electrification on all outer islands a. Solar Kits for lighting in all rural households. b. Outer Island Council PV- mini grid system c. Mereang Tabwai Secondary School PV-mini grid d. PV-mini grid system for Southern Kiribati Hospital e. Junior secondary school solar system f. Outer Island Fish Centre PV-grid g. Desalination plant for vulnerable rural community h. Outer island Police station solar water system rehabilitation i. Coconut husk rocket stoves	1. Increased number of households connected to solar energy 2. Rural electrification roadmap developed for	MISE (Energy Planning Unit)	MFED, Ministry of Line and Phoenix Development, MIA, Kiribati Solar Energy Company All Ministry stakeholders	Australia's Aid Program, EU, ADB, New Zealand Aid Programme, German Development Cooperation; SPC, PIFS; SPREP, International Renewable Energy Agency

j. Outer island clinic solar system rehabilitation k. Provide resources and policy framework for the OTEC power system to commence operating from Bikenibeu with expansion based on successful results to other islands with acute water shortages	utilising renewable energy sources 3. Rural household access to clean and adequate lighting reaches 100% 4. All island councils utilise PV-grid systems 5. MTSS fuel reduction 6. SKH fuel reduction 7. All rural JSS utilise solar power for office duties and study venue at night 8. All OI Fish Centres achieve significant fuel reduction. 9. All vulnerable communities have access to potable water 10. All OI Police post solar systems rehabilitated 11. All OI clinics solar systems rehabilitated 12. OTEC as a power source that is renewable is trialled in Tarawa			
Result 9.2: KEY NATIONAL ADAPTATION PRIORITY – ENERGY SECURITY #3: Increase energy conservation and energy efficiency on both the supply and demand sides.				
1) Promote energy efficiency and conservation. a. Develop a policy to guide and enforce the efficient use of energy and infrastructure upgrading in the transport sector and power sector. b. Introduce regulations on minimum standards for energy efficiency. c. Develop a policy to minimise the importation of second-hand vehicles that are not environmentally friendly and fuel efficient. d. Develop a financing mechanism for energy efficiency (energy efficiency revolving fund).	1. Minimum energy efficiency standards and energy labelling regulations adopted 2. Legislation for minimum energy performance	MISE (Energy Planning Unit), Public Utilities Board	MFED, MICTTD, MOE, NGOs	Australia's Aid Program, EU, ADB, New Zealand Aid Programme; SPC, PIFS; SPREP, International Renewable Energy Agency

e. Install a pre-paid meter system to conserve energy. f. Establish standards and labelling for minimum energy performance of electrical appliances. g. Develop best practice guidelines for supply side management. h. Develop and implement public awareness and educational programmes for: good transport management; electricity use; energy efficiency and conservation, and use of active transport (bicycles, walking), particularly in villages.	standards and labelling approved 3. Decrease in number of imported used and inefficient vehicles by 2020 4. Revolving fund established 5. Number of pre-payment meters installed in residential and commercial grid customers. 6. Standards and labelling guidelines developed and enforced 7. Reduction in intensity of conventional energy used 6690kJ/GDP in 2012.			
Result 9.3: Renewable energy and energy efficiency are supported by appropriate policy, legislation and regulation.				
1) Strengthen energy governance through review and creation of appropriate policies and regulations. a. Establish a Kiribati National Energy Coordinating Committee (KNECC). b. Ensure the Government of Kiribati Investment Plan reflects renewable energy project priorities as far as is feasible. c. Review existing incentives, regulations, institutional mechanisms and policies relating to energy and energy financing and propose changes where there are disincentives or inefficiencies for renewable energy projects. d. Review the Kiribati Solar Energy Company business model. e. Establish a carbon offsetting project on outer islands. f. Provide incentives for private companies to engage in, bring in and start renewable energy systems, to complement the Kiribati Solar Company to enhance overall sector competitiveness.	1. KNECC formalised and established 2. Related energy Acts reviewed to be conducive to renewable energy transition 3. KSEC performing and competing in the local market	MISE (Energy Planning Unit), Public Utilities Board	MFED, MICTTD, MOE, NGOs	Australia's Aid Program, EU, ADB, New Zealand Aid Program; SPC, PIFS, SPREP, International Renewable Energy Agency

2) KEY NATIONAL ADAPTATION PRIORITY – ENERGY SECURITY #2: Strengthen the technical and institutional capacities of the energy sector using the most innovative technologies available a. Review human resources and technical capacity needed in the energy sector. b. Address the technical capacity and professional development needs identified by the review to strengthen the technical and institutional capacities of the energy sector.	1. Increase in number of professionally trained staff by gender in the energy sector	MISE (Energy Planning Unit), Public Utilities Board	MFED, MICTTD, MOE, NGOs	Australia's Aid Program, EU, ADB, New Zealand Aid Program; SPC, PIFS, SPREP, International Renewable Energy Agency

STRATEGY 10: STRENGTHENING CAPACITY TO ACCESS FINANCE, MONITOR EXPENDITURES AND MAINTAIN STRONG PARTNERSHIPS				
Result 10.1: KEY NATIONAL ADAPTATION PRIORITY – CLIMATE FINANCE #3. Strengthened coordination and collaboration in-country on climate finance and climate change and disaster risk management initiatives.				
1) All national CC and DRR policies, plans and strategies linked to KCFD climate finance strategic framework and country programme (SF&CP) to enhance access to climate finance. a. Include national CC and DRM projects and programmes in the National Economic Planning Office's (NEPO) National Development Strategy. b. Develop an interministerial climate finance coordination mechanism, e.g. sector-specific taskforces, to assess each ministry's funding needs for CC and DRM projects and ensure support and alignment. c. Establish a system to monitor climate change adaptation-related expenditures across all ministries. d. Create a consolidated CCA-related expenditures report to be distributed to international funding partners.	1. Number and level of effectiveness of coordination mechanisms for linking sectoral policies to the KCFD SF & CP 2. CC and DRM programmes and projects included in NEPO's strategy 3. Interministerial climate finance coordination mechanism established 4. Consolidated report on CCA-related expenditures across all ministries produced	MFED (KCFD)	OB, KNEG, all ministries	Kiribati development partners such as EU, World Bank, ADB, Australia's Aid Program, UN/UNDP, New Zealand Aid Programme

STRATEGY 10: STRENGTHENING CAPACITY TO ACCESS FINANCE, MONITOR EXPENDITURES AND MAINTAIN STRONG PARTNERSHIPS

2) Capacity of existing coordination and approval mechanisms strengthened through KCFD engagement a. Include climate change and DRM in the implementation of the public finance and fiscal reform programme (MFED Strategic Plan, Action 7) to facilitate budget support and to monitor expenditure on climate change and DRM. b. Integrate or respond to, and report on, the recommendations from the Kiribati Climate Change and Disaster Risk Finance Assessment report into national and sectoral climate finance activities. c. Adapt and strengthen existing database to include climate change and DRM (e.g., coding). d. Include climate change and DRM in improvement of reporting systems (actions, result indicators, expenditure). e. Strengthen communication mechanism between OB and MFED so both are aware of key donors for climate change and disaster risk management. f. Train MFED staff on climate change and DRM.	1. All sectoral and corporate plans and annual budgets explicitly reflect climate change and DRM considerations 2. Increase in expenditure on climate change adaptation and disaster risk management as an achievable percentage of GDP 3. Increase in funds sourced from successful resource mobilisation with a focus on climate change adaptation (KDP KPA 4)	MFED (KCFD)	OB, KNEG, all ministries	Kiribati development partners such as EU, World Bank, ADB, Australia's Aid Program, UN/UNDP, New Zealand Aid Program
3) Review of financial project management arrangements in line ministries, SOEs, the private sector and CSOs through NEPO and KCFD engagement. a. Develop coherent accounting procedures and standards across ministries, consistent with funding agencies and implementing partners involved in CCA programming. b. Strengthen capacity within line ministries on financial project management through trainings and mentoring programmes. c. Identify and assign responsibility over financial project management to specific officials within ministries. d. Develop and provide training on compliance protocols to ministerial staff involved in financial management of CCA & DRM projects.	4. Accounting procedures and standards developed 5. Training on financial project management conducted at MFED and four other ministries involved in CCA 6. Financial project management focal point for CCA appointed in all relevant ministries	MFED (KCFD)	MFAI, MIA, NGOs, OB (KNEG)	Australia's Aid Program, New Zealand Aid Program, EU, ADB, World Bank, USAID, German Development Cooperation, UN, PIFS, SPC, SPREP, FFA, USP, South Pacific Tourism Organisation

STRATEGY 10: STRENGTHENING CAPACITY TO ACCESS FINANCE, MONITOR EXPENDITURES AND MAINTAIN STRONG PARTNERSHIPS				
4) Consistent awareness and information sharing between KCFD and its external audiences, thus, uplifting climate finance portfolio and enhance multilateral partnerships. a. Improve aid coordination and donor harmonisation for climate change adaptation and DRM. b. Table climate change and DRM KJIP reports and resource gaps during biannual donor roundtables. c. Establish a coordination mechanism for international NGOs and development partners based on the climate change activities register (see Strategy 1). d. **KEY NATIONAL ADAPTATION PRIORITY – CLIMATE FINANCE #4 & #5.** Strengthen the Climate Finance Unit and broader national capacity, including NGOs, to further engage with key multilateral sources and climate finance mechanisms to provide efficient and directed support for CCA, mitigation and DRM activities. e. Gain affiliation as a National Designated Authority for the Green Climate Fund and access Readiness Funds. f. Identification of and engagement with accredited entities for climate finance and identification of eligibility for access via these channels.	1. Effective and efficient financing modality for external climate change adaptation and DRM fund. 2. Coordination platform established for all climate change partners and projects based on activity register. 3. Increased Climate Finance Unit and NGO engagement with multilateral sources on CCA and DRM initiatives. (See also 10.1.3 above and Strategy 1)	MFED, MFAI, MIA, NGOs	OB (KNEG), international NGOs	Australia's Aid Program, New Zealand Aid Program, EU, ADB, World Bank, USAID, German Development Cooperation, UN, PIFS, SPC, SPREP, FFA, USP, South Pacific Tourism Organisation
Result 10.2: KEY NATIONAL ADAPTATION PRIORITY – CLIMATE FINANCE #1 Increase efforts to mobilise and scale up various sources of financing to implement climate change adaptation, mitigation and disaster risk management needs and priorities				

STRATEGY 10: STRENGTHENING CAPACITY TO ACCESS FINANCE, MONITOR EXPENDITURES AND MAINTAIN STRONG PARTNERSHIPS

1) Integrate access to climate financing into training for relevant ministries a. Include capacity building on access to climate financing into existing agreements with key institutional financing sources, such as the World Bank, DFAT, MFAT, UNFCCC, IFC, etc. b. Develop a national training and recruitment programme on access to climate financing for civil servants of relevant ministries to ensure staff capacity meets needs. c. Engage with funding sources to access support for climate finance readiness programmes, such as the UNFCCC's Green Climate Fund and the Adaptation Fund d. Develop national capacity for promotion, consideration and facilitation of funding proposals e. Develop a country programme that identifies strategic priorities for engagement with funding institutions f. Identify programmes and projects that advance national priorities and align them with the results framework of the funding institutions g. Support a diversity of national actors to access climate finance readiness funds for project development. h. Identify opportunities for and undertake South-South engagement and information sharing on overcoming barriers for access to climate finance i. Take steps to enhance involvement of NGOs and private sector in designing and implementing major climate finance projects/activities to build capacity for future involvement.	1. Number of organisations accessing climate finance readiness funds for proposal development and implementation. 2. Country strategies/MOUs with key donors updated to include reference to training on access to climate financing. 3. Two trainings on access to climate finance conducted at MFED 4. Applications for readiness programmes submitted to at least two institutions 5. At least one readiness programme accessed per year	MFED (KCFD), MFAI	OB	Kiribati development partners such as EU, World Bank, IFC, ADB, MFAT, DFAT, UN, JICA, etc.

STRATEGY 10: STRENGTHENING CAPACITY TO ACCESS FINANCE, MONITOR EXPENDITURES AND MAINTAIN STRONG PARTNERSHIPS				
2) **Institutional strengthening (finance sector)** a. Establish a programme of capacity building and institutional strengthening of our financial systems b. Establish a mechanism to coordinate all in-coming climate change assistance to make clear distinctions between ODA and Climate Finance though multilateral sources. c. Strengthen national institutions and capacity to allow access and accreditation to enable direct support.	1. Effectiveness score of institutional arrangements to lead, coordinate and support the integration of climate change adaptation into relevant financial sector management processes (according to internationally recognised effectiveness rating) 2. Reviews established to contribute to better public financial management	MFED (KCFD), MFED NEPO.	OB, KRCS	Kiribati development partners such as EU, World Bank, IFC, ADB, MFAT, DFAT, UN, JICA, etc.
3) KEY NATIONAL ADAPTATION PRIORTY – UNAVOIDABLE CLIMATE CHANGE IMPACTS #2: Establish financial mechanisms to address the risks facing community and public assets (with a focus on climate risk insurance and building on existing initiatives and programmes) (See also Result 6.5) a. Develop a policy options paper and undertake relevant background research (e.g., on asset vulnerability) investigating the feasibility of various models available for establishing a financial mechanism to address climate change and disaster risks with financial inclusiveness is a key consideration. b. Conduct consultations on the proposed mechanisms. c. Finalise the proposal and submit for endorsement along with preferred implementation arrangements.	1. Proposal for climate change and disaster risk financial mechanism developed and endorsed.	MFED (KCFD), MCIC	MFED NEPO, OB,	Kiribati development partners such as EU, World Bank, IFC, ADB, MFAT, DFAT, UN, JICA, etc.

STRATEGY 10: STRENGTHENING CAPACITY TO ACCESS FINANCE, MONITOR EXPENDITURES AND MAINTAIN STRONG PARTNERSHIPS

Result 10.3: KEY NATIONAL ADATATION PRIORITY - CLIMATE FINANCE #2. Line ministries' monitoring, evaluation and performance measures of climate change adaptation and disaster risk management, including budgeting, expenditure, institutional capacity, and internal systems, are strengthened through MFED engagement, as coordination office for climate finance through KCFD to increase Kiribati's access to, and engagement with, various sources of climate finance.				
1) Strengthen the integration of climate change and DRM into monitoring and evaluation at national and local levels within MFED, line ministries, MIA and KJIP Secretariat. a. Incorporate climate change and DRM considerations into MFED Strategic Action 10 to improve management for development results through capacity development for monitoring and evaluation and results-based management. b. Assess capacity needs broadly to monitor and evaluate climate change and DRM initiatives. c. Train identified government, outer island and NGO staff. d. Develop and integrate climate change DRM indicators for monitoring and evaluating across sectors, local government programmes and MFED project proposal templates. e. Establish a centralised system for tracking climate activities and finance across government (see also Action 10.1.2). f. Link monitoring and evaluating of climate change and DRM indicators to the National Data Centre and respective sector-specific data monitoring systems (see Strategy 2). g. Conduct mid-term and final review and evaluation of KJIP (KJIP Secretariat).	1. The monitoring and evaluation system under MFED provides regular reports against KJIP outcome Performance Indicators and sector-level performance Indicators that relate to the KJIP.	MFED, MIA	OB, all Line Ministries, KNEG, National Statistics Office, NGOs	Australia's Aid Program, New Zealand Aid Program, EU, ADB, World Bank, USAID, German Development Cooperation, UN, PIFS, SPC, SPREP, FFA, USP, South Pacific Tourism Organisation

Actions, sub-actions and Key National Adaptation Priorities	Performance indicators (see note at 4.8)	Responsible lead agency	Support agencies	Development partners and CROP members
Result 11.1: The rights of Kiribati over its existing EEZ and the resources within it are protected forever for the people of Kiribati.				
1) Safeguard Kiribati sovereignty (EEZ) on impacts of sea level rise, a. Develop project to conduct research on the impacts of sea level rise as a result of climate change on Kiribati EEZ base points. b. Assess the UNCLOS and its implications on Kiribati EEZ in the context of climate change impacts (sea level rise). c. Review existing Kiribati Constitution and relevant legislation affecting the EEZ and the provisions of the UNCLOS and provide recommendations to government on how to protect Kiribati sovereignty and extend current EEZ. d. Seek other low-lying countries that would be affected by this issue to gain support on issue in the international arena. e. Submit national report on issues to UNCLOS Secretariat. f. Amend national constitution and legislation as appropriate to safeguard Kiribati sovereignty.	1. Research and policy review completed with recommendations for the EEZ as related to climate change 2. An internationally recognised agreement between UNCLOS members to safeguard Kiribati's EEZ	MFMRD, Office of Attorney General, OB, MFAI		EU, World Bank, ADB, Australia's Aid Program, UN/UNDP, New Zealand Aid Programme; PIFS
Result 11.2: The cultural heritage of Kiribati are protected, preserved and promoted.				

To conserve and promote I-Kiribati cultural heritage and practices the following will be undertaken: a. Assess the Kiribati museum capacity needs in the face of climate change and disaster risks. b. Collecting, developing and recording data on underwater cultural heritage. c. Collecting, updating and recording data on intangible cultural heritage. d. To increase the capacity of I-Kiribati people on the contribution of their intangible and tangible cultural heritage in improving the resilience of the country and the people against the impacts of climate change and disasters. e. Assess legislation needs for Kiribati as appropriate to protect, preserve and conserve the cultural heritage and important artefacts of Kiribati. f. Education and awareness on food security and cultural industry in the face of climate change and natural disasters (see also 4.2.2.). g. Theory and practical training on traditional cultivation methods (see also 4.2.2)	1. Increase in number of both transnational and domestic trainings that are well-aligned with climate change and disaster risks 2. Museum capacity increased 3. Kiribati underwater cultural heritages identified and recorded 4. Databank on intangible cultural heritage produced 5. Increase in public engagement awareness programme that motivates cultural stakeholders to transmit their tangible and intangible cultural heritages 6. Legislation needs identified to preserve, protect and conserve tangible and intangible cultural heritages and museum artefacts 7. Coverage of awareness on food security and cultural industry in the face of climate change and natural disasters 8. Number of trainings on traditional cultivation method conducted		

STRATEGY 12: TO ENHANCE RESILIENCE THROUGH STRATEGIC PARTNERSHIPS FOR COMMUNITY PARTICIPATION, OWNERSHIP AND INCLUSION OF VULNERABLE GROUPS

Actions, Sub-actions and Key National Adaptation Priorities	Performance indicators (see note at 4.8)	Responsible lead agency	Support agencies	Development partners and CROP members
Result 12.1: Communities are active partners in building resilience and members of vulnerable groups are increasingly engaged in climate change and disaster risk management initiatives and their needs are addressed.				

STRATEGY 12: TO ENHANCE RESILIENCE THROUGH STRATEGIC PARTNERSHIPS FOR COMMUNITY PARTICIPATION, OWNERSHIP AND INCLUSION OF VULNERABLE GROUPS

Actions, Sub-actions and Key National Adaptation Priorities	Performance indicators (see note at 4.8)	Responsible lead agency	Support agencies	Development partners and CROP members
1) Facilitate the participation of children and young people (girls and boys) in climate change adaptation and disaster risk management initiatives and conduct youth empowerment. a. Train young people (girls and boys), using training-of-trainers method, on climate change adaptation and DRM to deliver child- and youth-friendly information and training, including in outer islands. b. Establish youth representation (girls and boys) on climate change working groups and committees in order to facilitate youth-to-youth communication and integrate into climate change adaptation and DRM planning. c. Deliver support to youth- and child-led adaptation projects, with a focus on youth-to-youth and child-to-child knowledge sharing and capacity building. d. Develop communication strategies with the involvement of both young men and young women. Communications strategies should involve the delivery of messages through the school curricula, extra-curricular activities, advisory/support services in schools as well as through community-based and non- governmental organisations (KNYP 3.2). e. Develop and implement strategies with young people to promote mental health for young people (KNYP 3.3) and address anxiety about uncertain future related to climate change. f. Explore opportunities to develop markets and provide livelihoods and training for young people based on Kiribati cultures and traditions, in order to build resilience to climate change (KNYP 2.3).	1. Increase in number of vulnerable groups effectively engaged in climate change and disaster risk initiatives 2. Sector Disaster Risk Reduction plans consider the needs of vulnerable groups	MIA – Youth Division, MELAD, MOE, KRCS	Pacific Youth Council, Kiribati National Youth Council, FSPKI, 350.org, KiriCAN	UNICEF, all partners; SPC, SPREP; USP; international NGOs

STRATEGY 12: TO ENHANCE RESILIENCE THROUGH STRATEGIC PARTNERSHIPS FOR COMMUNITY PARTICIPATION, OWNERSHIP AND INCLUSION OF VULNERABLE GROUPS

Actions, Sub-actions and Key National Adaptation Priorities	Performance indicators (see note at 4.8)	Responsible lead agency	Support agencies	Development partners and CROP members
2) Promote the equal participation and influence of women and men in climate change and DRM initiatives. a. Develop a gender sensitivity indicator/ measure/ toolkit. b. Leverage the value of island council women's and youth development officers to enhance participation by women and young people in CCA & DRM activities. c. Deliver targeted and ongoing awareness-raising activities for and with people with a disability. d. Support and resource people with disabilities to initiate and run adaptation projects.	1. Gender-responsive toolkit produced and being applied 2. Communication strategies are multi-formatted and accessible 3. % of women and men involved in planning and implementing CCA/DRM projects	MWYSSA WDD, KRCS	KNEG, island councils, KiriCAN, MIA	UNICEF, UNDP, all partners; SPC, SPREP; USP; international NGOs
3) Develop and conduct climate change and disaster risk management training and awareness programmes targeting communities and tailored to the specific needs and priorities of women and men, youth, people with disabilities, on with a specific focus on safety, security and livelihoods issues. a. Develop culturally sensitive and needs-conscious engagement methods for women and vulnerable people for DRM and CCA projects. b. Integrate engagement approaches into activities of KNEG members planning implementation	1. Engagement resources developed with input from diverse advisors by 2020 3 x relevant KNEG members planning and implementation processes	MWYSSA: Disability Unit, KRCS	Pacific Youth Council, Kiribati National Youth Council, FSPKI, 350.org, KiriCAN, MIA – Youth Division, priority KNEG members	UNICEF, UNDP, all partners; SPC, SPREP; USP; international NGOs
4) Increase knowledge and awareness of climate change and DRM among people with disabilities in CC and DRM initiatives: a. Deliver disaster preparedness training for people with disabilities and those that are supporting them	1. Training package developed and piloted by 2020	MWYSSA, KRCS	Ministry of Education/MIA, To toa matoa, School and centre for children with special needs Kiribati	UNICEF, UNDP, all partners; SPC, SPREP; USP; international NGOs

STRATEGY 12: TO ENHANCE RESILIENCE THROUGH STRATEGIC PARTNERSHIPS FOR COMMUNITY PARTICIPATION, OWNERSHIP AND INCLUSION OF VULNERABLE GROUPS

Actions, Sub-actions and Key National Adaptation Priorities	Performance indicators (see note at 4.8)	Responsible lead agency	Support agencies	Development partners and CROP members
5) Build successful community mobilisation approaches into a national approach for strategic community partnerships: a. Undertake a stocktake of community partnership projects b. Develop an action research approach to assessing barriers and enablers for successful and unsuccessful community mobilisation approaches that are sustainable and sustained. c. Implement a systematic investigation/research into community mobilisation projects and partnerships and consolidate lessons learned. d. Develop a guidance note on strategic community partnerships to inform planning and implementation. e. Pilot test application of guidance on 1-3 projects, and revised guidance based on findings.	1. Community mobilisation and partnership project stocktake complete 2. Community mobilisation and partnership research report completed 3. Guidance note developed and tested on up to three new projects	MWYSSA	Pacific Youth Council, Kiribati National Youth Council, FSPKI, 350.org, KiriCAN, MIA – Youth Division, priority KNEG members	UNICEF, UNDP, all partners; SPC, SPREP; USP; international NGOs
6) Developing community ownership and accountability system over climate change and disaster risks related projects to ensure the effectiveness and sustainability of these projects a. Conduct workshops with communities to identify and prioritise 1-2 needs or issues of the community related to the impact of climate change and disaster risks. b. Identify community strength and capacity to address issues that are related to climate change and disaster risks. c. Developed Memorandum of Understanding (MOU) between government and the communities on climate change and disaster risks related projects. d. Ensure that community could voluntarily report back on any project assets (tangible and intangible).	1. Needs or issues related to climate change and disaster risks are identified 2. MOU developed 3. Community accountability is achieved	MWYSSA	Pacific Youth Council, Kiribati National Youth Council, FSPKI, 350.org, KiriCAN, MIA – Youth Division, priority KNEG members	UNICEF, UNDP, all partners; SPC, SPREP; USP; international NGOs

ANNEX 2: NATIONAL AND SECTORAL POLICY ALIGNMENTS TO THE KJIP

Table 16. Alignment between KJIP Strategies and key national and sectoral policies

Shading indicates primary* alignment

Key national and sectoral policy / KJIP Strategies	1: Strengthening good governance, strategies and legislation	2: Improving knowledge and information generation, management and sharing	3: Strengthening and greening the private sector, including small to medium-sized enterprises	4: Increasing water and food security with integrated and sector-specific approaches and promoting healthy and resilient ecosystems	5: Strengthening health-service delivery to address climate change impacts	6: Promoting sound and reliable infrastructure development and land management	7. Delivering appropriate education, training and awareness programmes	8: Increasing effectiveness and efficiency of early warnings and disaster and emergency management	9: Promoting the use of sustainable renewable sources of energy and energy efficiency	10: Strengthening capacity to access finance, monitor expenditures and maintain strong	11: Maintaining the existing sovereignty and unique identity of Kiribati	12: Enhancing the participation and resilience of vulnerable groups
Kiribati 20 Year Vision 2018–2038 (KV20)	■	■	■	■	■	■	■		■	■		
Kiribati Development Plan 2016–2019	■	■	■	■	■	■	■				■	
Kiribati Climate Change Policy	■			■	■	■	■	■	■	■		
DRAFT Long Term Coastal Security Strategy (LTCSS) for Kiribati				■		■						
Kiribati National Fisheries Policy 2013 2025				■							■	
National Water Resources Policy and Implementation Plan				■		■						
Draft National Urban Policy			■									
Kiribati Integrated Environment Policy	■			■								■
Kiribati Integrated Energy Road Map (2017–2025)			■	■	■		■		■			

KJIP Strategies / Key national and sectoral policy	1: Strengthening good governance, strategies and legislation	2: Improving knowledge and information generation, management and sharing	3: Strengthening and greening the private sector, including small to medium-sized enterprises	4: Increasing water and food security with integrated and sector-specific approaches and promoting healthy and resilient ecosystems	5: Strengthening health-service delivery to address climate change impacts	6: Promoting sound and reliable infrastructure development and land management	7. Delivering appropriate education, training and awareness programmes	8: Increasing effectiveness and efficiency of early warnings and disaster and emergency management	9: Promoting the use of sustainable renewable sources of energy and energy efficiency	10: Strengthening capacity to access finance, monitor expenditures and maintain strong	11: Maintaining the existing sovereignty and unique identity of Kiribati	12: Enhancing the participation and resilience of vulnerable groups
National Determined Contributions	■	■	■	■	■	■	■	■	■	■	■	■
Kiribati Gender Equality and Women's Development Policy	■		■	■								■
Kiribati Integrated Environmental Plan (KIEP)		■		■								
Community-based Mangrove and Natural Resources Co-Management Plan & Constitution	■			■							■	■
Phoenix Island Protected Areas Plan	■	■	■	■	■	■	■	■	■	■	■	■
Food Safety Policy/Act				■	■							
Island Council Strategic Plans	■											
Inclusive Education Policy							■					■
National Cultural Policy (draft)	■	■		■			■				■	■
Climate Change and Health Action Plan					■							
Ministerial Strategic and Operational Plans (MSPs and MOPs)												
MHMS Strategic Plan 2016 to 2019					■							
MELAD: Lands Management Division: Ministerial Strategic Plan						■						

KJIP Strategies / Key national and sectoral policy	1: Strengthening good governance, strategies and legislation	2: Improving knowledge and information generation, management and sharing	3: Strengthening and greening the private sector, including small to medium-sized enterprises	4: Increasing water and food security with integrated and sector-specific approaches and promoting healthy and resilient ecosystems	5: Strengthening health-service delivery to address climate change impacts	6: Promoting sound and reliable infrastructure development and land management	7. Delivering appropriate education, training and awareness programmes	8: Increasing effectiveness and efficiency of early warnings and disaster and emergency management	9: Promoting the use of sustainable renewable sources of energy and energy efficiency	10: Strengthening capacity to access finance, monitor expenditures and maintain strong	11: Maintaining the existing sovereignty and unique identity of Kiribati	12: Enhancing the participation and resilience of vulnerable groups
MELAD Agriculture and Livestock Division (ALD) Strategic Plan: 2013-2016				■								
MELAD: Environment and Conservation Division	■	■	■	■	■	■	■	■	■	■	■	■
MICTTD: Information, Printing services		■					■	■				
MHMS: Public Health,		■		■	■		■					
MFMRD: Coastal Fisheries,	■		■	■			■				■	
MFMRD: Marine Resources	■			■			■				■	
MWYSSA: Women/Youth	■						■					■
MWYSSA: Disability/Communities	■						■					■
MISE: Water				■								
MISE: Infrastructure						■						
MISE: Renewable Energy									■			
MIA: Local Government	■											■
MIA: Culture Division				■								
MFED: Climate Finance Division										■		

KJIP Strategies / Key national and sectoral policy	1: Strengthening good governance, strategies and legislation	2: Improving knowledge and information generation, management and sharing	3: Strengthening and greening the private sector, including small to medium-sized enterprises	4: Increasing water and food security with integrated and sector-specific approaches and promoting healthy and resilient ecosystems	5: Strengthening health-service delivery to address climate change impacts	6: Promoting sound and reliable infrastructure development and land management	7. Delivering appropriate education, training and awareness programmes	8: Increasing effectiveness and efficiency of early warnings and disaster and emergency management	9: Promoting the use of sustainable renewable sources of energy and energy efficiency	10: Strengthening capacity to access finance, monitor expenditures and maintain strong	11: Maintaining the existing sovereignty and unique identity of Kiribati	12: Enhancing the participation and resilience of vulnerable groups
MCICD: Cooperatives Division				■								
Ministry of Justice (MOJ)	■											
MOE							■					
MLPID: Line and Phoenix Islands Sustainable Integrated Development Strategy 2016 2036	■		■			■						

*There are multiple second and third order downstream linkages between sectoral policies and the KJIP, as such this table shows only the “primary” alignment.

TE MAURI TE RAOI AO TE TABOMOA