



Kiribati Integrated Environment Policy [KIEP] and Strategic Environment Plan [SEP] 2021–2036







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COORDINATED BY THE ENVIRONMENT AND CONSERVATION DIVISION,
MINISTRY OF ENVIRONMENT, LANDS AND AGRICULTURAL DEVELOPMENT

SUPPORTED BY THE SECRETARIAT OF THE PACIFIC REGIONAL ENVIRONMENT PROGRAMME



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SPREP's vision. *The Pacific environment, sustaining our livelihoods and natural heritage in harmony with our cultures.*

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ACRONYMS

AAP	Adaptation Action Plan	GDP	Gross Domestic Product
ALD	Agriculture and Livestock Division	GCF	Green Climate Fund
BCU	Biodiversity and Conservation Unit	GEF	Global Environment Facility
BD	Biodiversity	GEO	Global Environment Outlook
BDAMP	Integrated Biodiversity Assessment and Monitoring Program	GESIP	Gender Equity and Social Inclusion Plan
BOM	Australian Bureau of Meteorology	GHG	Green House Gas
BOSS	Big Ocean Sustainable State	GIZ	German Agency for International Cooperation
CBD	Convention on Biological diversity	GMP	Gross Marine Product
CC	Climate Change	GoK	Government of Kiribati
CCU	Climate Change Unit (of ECD)	GVP	Gross Value Product
CIA	Cumulative Impact Assessment	HNS	International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea
CITES	Convention on International Trade in Endangered Species	IAP	Island Adaptation Plan
CLC	International Convention on Civil Liability for Oil Pollution Damage	IC	International Consultant
CRC	Cobalt Rich Crusts	ICTTD-MSP	Ministry of Information, Communication, Transport and Tourism Development – Ministry Strategic Plan
CSO	Community Support Organisation	IMO	International Maritime Organization
DSM	Deep seabed mining	IOM	Integrated Ocean Management
EBM	Ecosystem Base Management	INDC	Intended Nationally Determined Contributions
ECA	Environmental education, communication and awareness	IUCN	International Union for Conservation of Nature
ECD	Environment and Conservation Division (of MELAD)	IVA	Integrated Vulnerability Assessment
EIDM	Environmental Information and Data Management	IWRMP	UNDP-GEF Pacific Integrated Water Resources Management Programme (IWRMP) 2009–2014
EECA	Environmental Education, Communication and Awareness	JIP	Joint Implementation Plan for Climate Change and Disaster Risk Management
EEZ	Exclusive Economic Zone	KAP-Survey	Knowledge, Attitudes and Practice (KAP) Survey
EG	Environmental Governance	KAS	Kiribati Agricultural Strategy
EIA	Environmental Impact Assessment	KCCP	Kiribati Climate Change Policy
ESD	Ecologically Sustainable Development	KDP	Kiribati Development Plan (adopted every four years)
ESIA	Environmental and Social Impact Assessment		
FBO	Faith-based Organisation		
FRP	Financing and Resourcing Plan		
FYG	Four-Year Goal		

KIEP	Kiribati Integrated Environment Policy	MFMRD	Ministry of Fisheries and Marine Resources Development
KIER	Kiribati Integrated Energy Roadmap	MIA	Ministry of Internal Affairs
KJIP	Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management	MICTTD	Ministry of Information, Communication, Transport and Tourism Development
KLTA	Kiribati Land Transport Authority	MISE	Ministry of Infrastructure and Sustainable Energy
KMS	Kiribati Meteorological Service	MLPID	Ministry of Line and Phoenix Islands Development
KNAP-CLD	Kiribati National Action Plan to Combat Land Degradation and Mitigate the Effect of Drought (2017–2022).	MoJ	Ministry of Justice
KNFP	Kiribati National Fisheries Policy	MoU	Memorandum of Understanding
KPA	Key Policy Area (of the KDP)	MPA	Marine Protected Area
KPA	Police to Kiribati Police Service	MSP	Ministry Strategic Plan
KTPF	Trade Policy Framework	NAPA	National Adaptation Program of Action
KV20	Kiribati 20-year Vision	NBPC	National Biodiversity Planning Committee
KWMRRS	Kiribati Waste Management and Resource Recovery Strategy	NBSAP	National Biodiversity Strategy and Action Plan
LDC	Least Developed Country	NCCP	National Climate Change Policy
LDN	Land Degradation Neutrality	NCES	National Circular Economy Strategy
LFA	Logical Framework Analysis	NEAB	National Environmental Advisory Board
LNG	Liquefied Natural Gas	NEPO	National Economic Planning Office
LogFrame	Logical Framework	NFA	National Focal Area
LTG	Long-Term Goal	NGO	Non-government organisation
MACBIO	Marine and Coastal Biodiversity in Pacific Island Countries	NIPPOPS	National Implementation Plan for Persistent Organic Pollutants
MDG	Millennium Development Goals (which preceded the UN SDGs 2015-30)	NIPS	National Intellectual Property Strategy
MEA	Multilateral Environmental Agreement	NISSAP	National Invasive Species Strategy and Action Plan
MEL	Monitoring, evaluation and learning	NNR	Non-living Natural Resources
MELAD	Ministry of Environment, Land and Agricultural Development	NWRIP	National Water Resources Implementation Plan
MELAD-ADC	Ministry of Environment, Land and Agricultural Development-Agricultural Development Division	OAG	Office of the Attorney General
MELAD-LMD	Ministry of Environment, Land and Agricultural Development-Land Management Division	OB	Office of Te Beretitenti (President)
MELP	Monitoring, Evaluation and Learning Plan	OECD	Organisation for Economic Co-operation and Development
MFED	Ministry of Finance and Economic Development	OHSBE	Ocean Health and Sustainable Blue Economy
		OPRC	International Convention on Oil Pollution Preparedness, Response and Cooperation

OPRC-HNS	Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances	SMART	Specific, Measurable, Achievable, Relevant and Time-bound
PACPOL	Pacific Ocean Pollution Prevention Programme	SMEs	Small to Medium Enterprises
PAN	Protected Area Network	SMS	Seafloor Massive Sulphides
PIF	Pacific Islands Forum	SOE	State of the environment
PIPA	Phoenix Islands Protected Area	SPREP	Secretariat of the Pacific Regional Environment Programme
PMN	Polymetallic nodules	STAR	System for Transparent Allocation of Resources
PNG	Papua New Guinea	SVA	Sector Vulnerability Assessment
POP	Persistent Organic Pollutants	TA	Thematic Area
POPSNIP	Persistent Organic Pollutants National Implementation Plan	TAK	Tourism Authority of Kiribati
PoWPA	Kiribati Programme of Work for Protected Areas	TEKSOL	Traditional Ecological Knowledge for Sustainable Ocean Livelihoods
PSC	Port State Control	TEV	Total Economic Value
PSR	Pressure-State-Response (framework for SOE assessment and reporting)	TWG	Thematic Working Group
PWUSP	Public Works and Utilities Strategic Plan	UNCCD	United Nations Convention to Combat Desertification
SAP	Sector Adaptation Plan	UNCLOS	United Nations Convention on the Law of the Sea
SDG	Sustainable Development Goals (of the UN 2015–2030 sustainability agenda)	UNFCCC	United Nations Framework Convention on Climate Change
SEA	Strategic Environmental Assessment	VA	Vulnerability Assessment
SEP	Strategic Environment Plan 2012–2015 (within the KIEP 2013)	WCU	Wildlife Conservation Unit
SIDS	Small Island Developing State	WMPP	Waste management and pollution prevention
SLU	Sustainable Land-use		

MAPS OF KIRIBATI

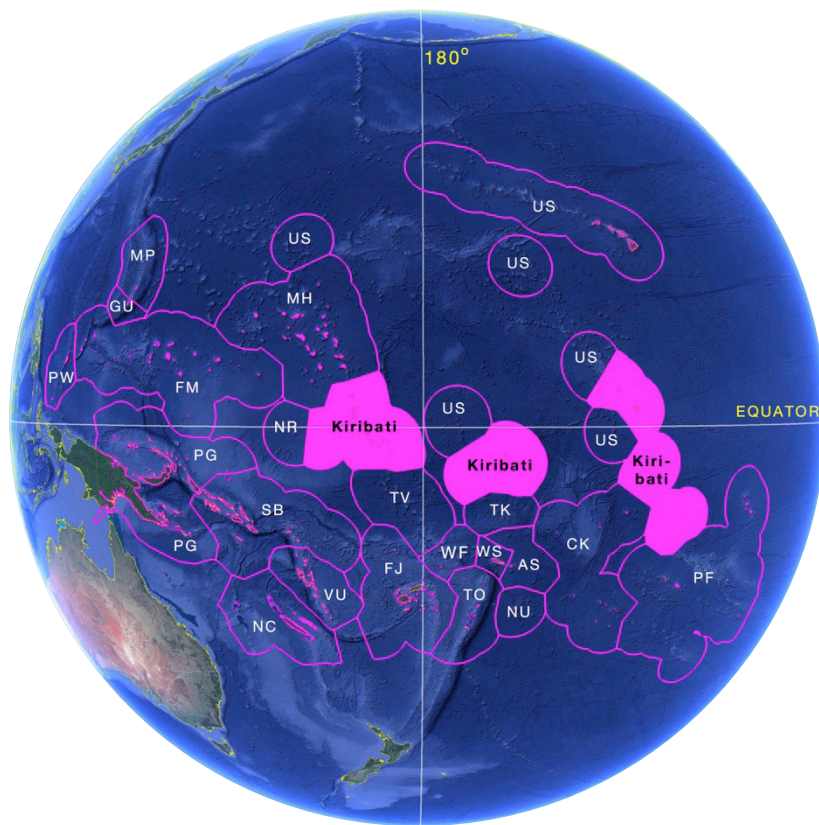


FIGURE 1: Overview map of Republic of Kiribati EEZ. Total EEZ = 3.5M km².
ISO 3166 Country Codes eco-strategic.com / Google Earth

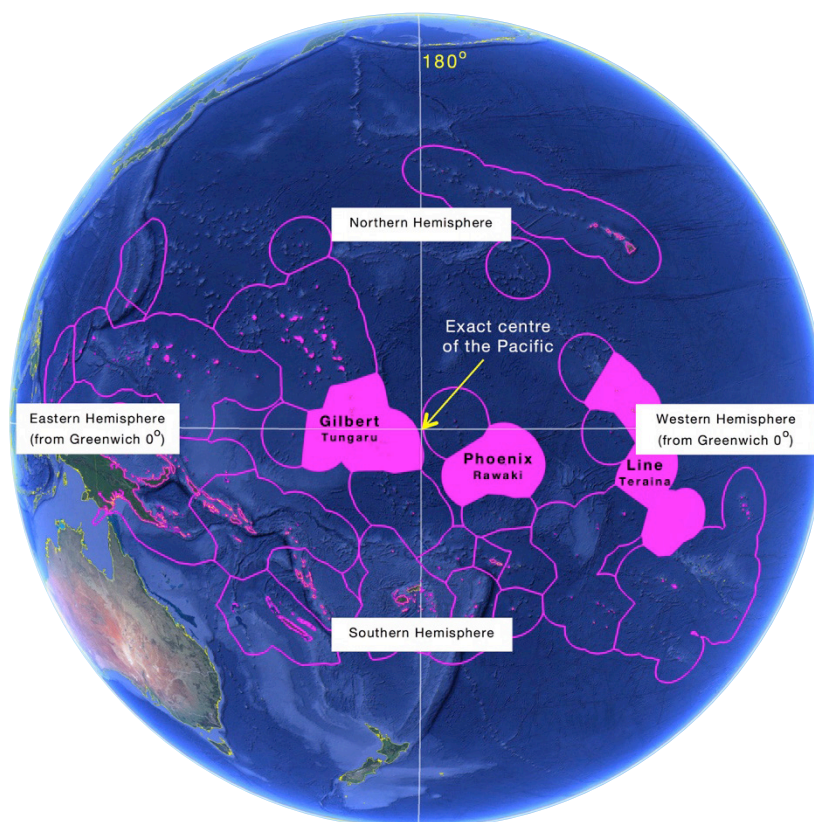


FIGURE 2: Kiribati Island Groups (across all four hemispheres).
eco-strategic.com / Google Earth

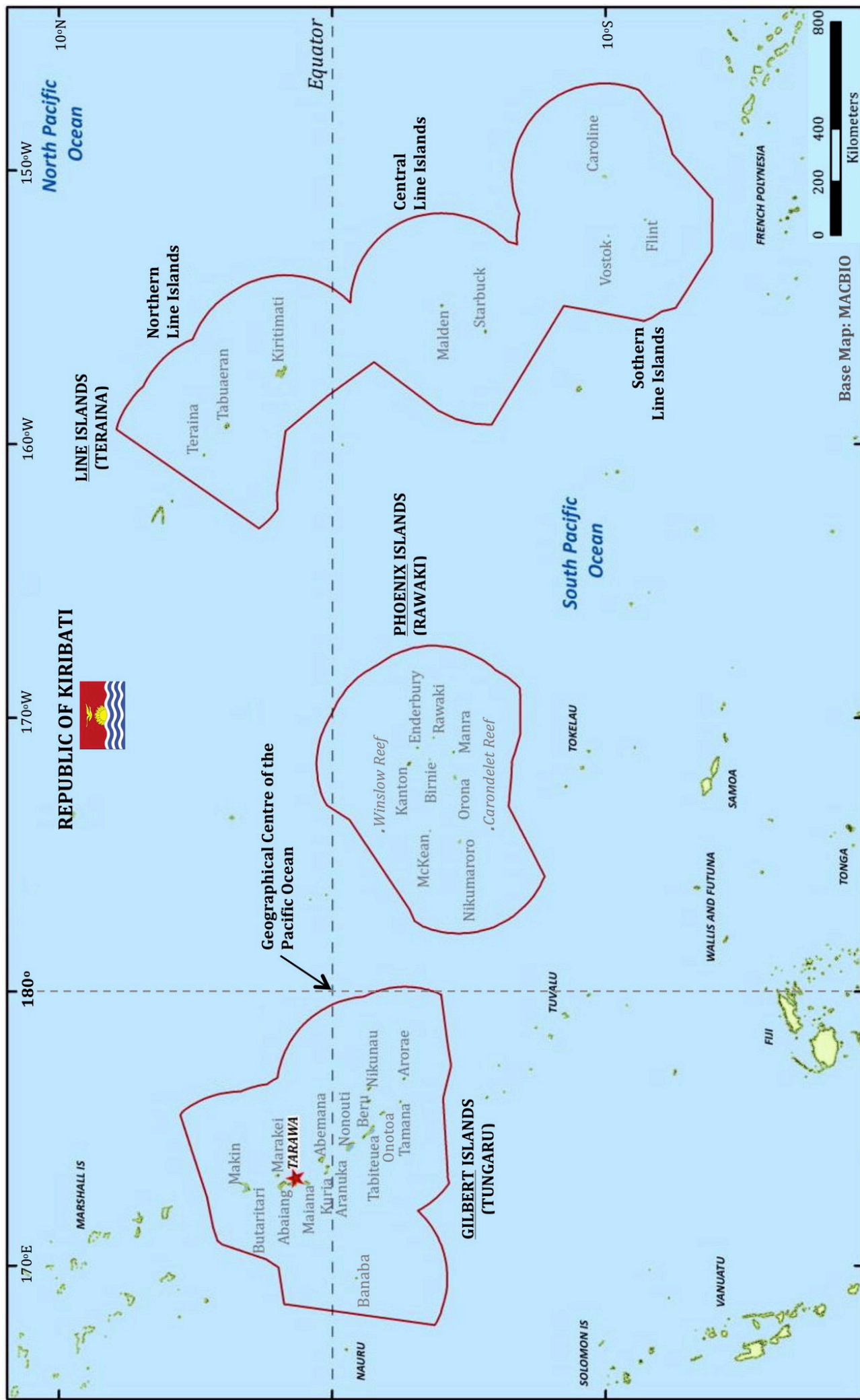


FIGURE 3: Overview map of Republic of Kiribati (basemap source: MACBIO)

FOREWORD BY THE HON. MINISTER

As island people, inhabiting a total of only 800 km² of land spread across nearly 3.5 million km² of the vast Pacific Ocean, the 120,000 people of the Republic of Kiribati are astutely aware, through ancient traditional knowledge and experience, of the principles of ecological sustainability. Over thousands of years the Micronesian people, along with our Polynesian and Melanesian brothers and sisters, navigated ocean-going sailing canoes, guided only by the stars at night and the clouds during the day, and by our own unwavering faith, commitment and courage, to seek and settle new lands and to establish the largest-ever ocean empire in the history of humankind.



For our voyaging Pacific ancestors, striking the right balance between resource use and the inherent, natural limits of islands and surrounding seas was fundamental to survival and prosperity. Over time our ancestors developed complex and sophisticated systems of natural resource management based on traditional ecological knowledge, guided by the wisdom of the elders and passed down the generations through the great oral traditions of the Pacific. Traditional approaches to ecologically sustainable use of island and ocean resources, based on an in-depth understanding of natural ecological systems, biological productivity, seasonality and other factors, allowed island-peoples to live in harmony with Mother Nature.

Yet today, having adopted more industrialised, consumption-based lifestyles that are inextricably linked to the globalised world economy, dependent on the importation of large volumes of external inputs including petroleum, machinery, cars, materials and manufactured goods and even basic foodstuffs, and which also generate harmful pollution and wastes, the ongoing sustainability and liveability of our island societies are increasingly at risk.

As an atoll-nation Kiribati is on the front line of global climate change. Sea-level rise is already impacting our low-lying islands and climate change impacts are a very real, existential threat to the very existence of our nation – a threat that is not caused by us but by the relentless greenhouse gas emissions from major industrial economies located far across the sea from our vulnerable island homes.

To address these major challenges, in 2012 the Government of Kiribati became one of the first in the Pacific region to move towards a more holistic, integrated, approach to environmental planning, linking environmental policy to broader national development planning, and mainstreaming environmental sustainability into all socioeconomic sectors. This was initiated through the formulation of the Kiribati Integrated Environment Policy (KIEP) 2013, linked to the Kiribati Development Plan (KDP) 2012–2015, which for the first time included a specific Key Policy Area on environmental sustainability. The development of the KIEP 2013 was supported by our long-term and most valued partners at the Secretariat of the Pacific Regional Environment Programme – SPREP.

While the KIEP 2013 served us well, and according to a recent consultant's review was largely successful, times have moved on and in 2020 we need a revised and updated KIEP, taking a longer-term (16 year) approach, with four-year sub-plans linked to our four-year KDPs. That is the very purpose of this document – the new KIEP 2021–2036.

The KIEP 2021–2036 continues our drive away from the old sector-based approaches and towards more integrated, ‘source-to-sea’ and ‘island-to-island’ approach to environmental management; mainstreaming all of the principles of ecological sustainability; ensuring greater equity in the sharing of environmental benefits; resurrecting, restoring and applying the ancient wisdom of traditional ecological knowledge, and seeking to build a more sustainable, circular, green-blue economy.

I would like to take this opportunity to thank all of those who have been involved in the development of this KIEP 2021–2036, and also to SPREP and its donors for their financial support. I commend the KIEP 2021–2036 to all relevant parties in Kiribati and commit my Ministry to supporting its full implementation, as the roadmap and voyage-plan towards our common sustainable future.

Te Mauri, Te Raoi ao Te Tabomoa iaora ni bane.

Ruateki Tekaiara

Honourable Minister, Ministry of Environment, Lands and Agricultural Development



MESSAGE FROM THE DIRECTOR GENERAL, SPREP

Sustainability is a core priority for atoll-nations like Kiribati, which has extremely limited land area and land-based resources, where population densities on some islands can be extremely high, and which is highly dependent on environmental resources for economic survival, including fisheries, other marine resources, and ecotourism. Like other atoll-nations around the world, Kiribati is on the front line of climate change, and the very existence and long-term sustainability of the nation are threatened by sea-level rise and other climate change impacts.



In 2021, SPREP worked with the Government of Kiribati through the Ministry of Environment, Lands and Agricultural Development to develop the Kiribati Integrated Environment Policy and the Strategic Environment Plan 2021–2036 which is endorsed by the Government in 2022. The KIEP 2021–2036 is to ensure that the environmental sustainability is achieved in Kiribati by Mainstreaming environment and sustainability considerations into all socioeconomic sectors and supporting the commitments by the Government of Kiribati (GoK) to achieve national environment targets as required under the Sustainable Development Goals (SDGs), Multilateral Environment Agreements (MEAs) and existing Pacific Regional Frameworks such as the SAMOA Pathway.

The KIEP will guide the whole of government cooperation and coordination of all relevant government ministries and divisions that have roles and responsibilities in relation to environment protection, ecologically sustainable development and the use of Kiribati's environment and natural resources.

I acknowledge the financial support of the European Union Capacity Building related to Multilateral Environment Agreements (MEAs) in African, Caribbean and Pacific (ACP) Countries (ACP MEAs) Project Phase 3 and the UNEP INFORM Project, SPREP the Environmental Monitoring and Governance Division of SPREP supports SPREP Members with the development of their National Environment Management Member Strategies (NEMS). The ACP MEAs Project phase 3 and the INFORM projects has supported and contributed substantively in improving the capacity of SPREP Member countries through targeted planning intervention such as this.

Sefanaia Nawadra

Director General, Secretariat of the Pacific Regional Environmental Programme



1 KIEP PURPOSE, VISION AND MISSION

1.1 Purpose of the KIEP 2021–2036

- The purpose of the KIEP 2021–2036 is to provide the overarching, national, long-term (16 year) strategy and framework for:
- Integrating environment and sustainability considerations into all aspects of national development, through the four-year Kiribati Development Plans (KDPs) and individual ministry plans.
- Mainstreaming environment and sustainability considerations into all socioeconomic sectors.
- Enabling and facilitating the Environment and Conservation Division (ECD) as the central authority for coordinating environment and sustainability issues across government ministries under an integrated, whole-of-government approach.
- Supporting the commitments by the Government of Kiribati (GoK) to achieve national environment targets as required under the Sustainable Development Goals (SDGs), Multilateral Environment Agreements (MEAs) and Regional Frameworks such as the SAMOA Pathway.

1.2 Long-term Vision of the KIEP 2021–2036

The People of Kiribati continue to live in and benefit from a safe and healthy environment that is resilient to local and national impacts and to the impacts of global change, including climate change, and which supports livelihoods, human health, sustainable development and heritage.

1.3 Mission of the KIEP 2021–2036

The mission of the KIEP 2021–2036 is to ensure that the long-term vision is achieved, by coordinating all relevant government ministries and divisions that have roles and responsibilities in relation to environment protection, ecologically sustainable development and the use of Kiribati's environment and natural resources, through whole-of-government cooperation and coordination.



2 INTRODUCTION AND BACKGROUND

Sustainability is a core priority for atoll-nations like Kiribati, which has extremely limited land area and land-based resources, where population densities on some islands can be extremely high, and which is highly dependent on environmental resources for economic survival, including fisheries, other marine resources, and ecotourism. Like other atoll-nations around the world, Kiribati is on the front line of climate change, and the very existence and long-term sustainability of the nation are threatened by sea-level rise and other climate change impacts.

The people of Kiribati have lived in harmony with nature for millennia, based on traditional sustainable lifestyles that respect the natural limits of their islands and surrounding seas. However, the modern shift to more industrialised, consumption-based lifestyles, dependent on the importation of large volumes of external inputs, and the associated generation of wastes and pollutants, threatens the ongoing sustainability and liveability of the island communities of Kiribati.

Increasing demands for economic development, including proposals for large scale dredging and land reclamation, development of major seaport facilities, increasing pressures on island and ocean resources, and new and emerging industries such as deep seabed mining, highlight the need for Kiribati to have strong and effective mechanisms in place to assess, prevent, reduce, mitigate, regulate, manage and monitor environmental impacts.

In order to address these challenges, in 2012 the Government of Kiribati began taking an holistic, integrated, approach to environmental planning, linking environmental policy to broader national development planning, and mainstreaming environmental sustainability into all economic sectors.

This approach was initiated through the *Kiribati Integrated Environment Policy (KIEP) 2013*, developed by the Environment and Conservation Division (ECD) of the Kiribati Ministry of Environment, Lands and Agricultural Development (MELAD), with technical and financial support from the Secretariat of the Pacific Regional Environment Programme (SPREP), and adopted by the Cabinet of the Government of Kiribati in June 2013, aligned with the *Kiribati Development Plan (KDP) 2012–2015*.

Since independence Kiribati has managed national socioeconomic development through the four-year *Kiribati Development Plans (KDPs)*. For the first time, the *KDP 2008–2011* identified environmental sustainability as one of its six Key Policy Areas (KPA) (KPA no. 4). Linkages between national development and environmental sustainability were further strengthened when the *KIEP 2013* was developed to contribute to the revised environmental targets and activities of the *KDP 2012–2015*. The *KIEP 2013* was designed to:

- a. Assist long-term planning towards building and enhancing the resilience of Kiribati, its local communities and people to respond to the impacts of global climate change.
- b. Provide a comprehensive roadmap for addressing national priority problems that affect the overall health and integrity of the atoll environment (land, sea and air) and its sustainable use at the national level.
- c. Serve as a guide to ECD as the Environment Authority in Kiribati, towards long-term preparations and planning to respond to the impacts of global changes including global climate change and subsequently enhance the resilience of the atolls' environment.

Seven years after the *KIEP 2013* was adopted, in 2020 the ECD undertook a review of the *KIEP 2013*, as reported in Raaymakers (2020). The review found that implementation of the *KIEP 2013* was largely successful; however significant further work is still required to address ongoing environmental issues

and also the new and emerging environmental issues in Kiribati. The review also found that while there has been good progress on some issues on the main atoll of Tarawa and at other pilot sites, there remains a need to continue the rollout of environmental initiatives to other islands and communities.

Given these review findings, and given that times have moved on since 2013, in 2020 there is need for a new, updated KIEP, taking a longer-term (16 year) approach, with four-year sub-plans linked to the four-year KDPs. That is the very purpose of this document – the new KIEP 2021–2036.

Consistent with the findings of the review of the KIEP 2013, as reported in Raaymakers (2020), this new KIEP 2021–2036 seeks to build on the excellent foundational work provided by the previous KIEP, but with a number of significant evolutions, including:

- a. Stronger linkages to the international environmental framework, including the Multilateral Environmental Agreements (MEAs) that Kiribati is a party to, and the United Nations (UN) Sustainable Development Goals (SDGs) 2015–2030.
- b. Stronger linkages to the Pacific regional framework including the *Framework for Pacific Regionalism* adopted by the Pacific Islands Forum (PIF) leaders in 2014, and the ‘*Blue Pacific*’ concept of a single, united, ocean-based ‘*Blue Continent*’ articulated at the 48th PIF Leaders Meeting in September 2017: ‘*To act as one Blue Continent and to reinforce our shared stewardship of the Pacific Ocean and reaffirm the connections of Pacific peoples with their natural resources, environment, culture and livelihoods*’.
- c. Stronger linkages to the regional conventions, strategies, frameworks and action plans administered by the Secretariat of the Pacific Regional Environment Programme (SPREP).
- d. The elevation of Environmental Governance as the highest priority thematic area.
- e. The inclusion of new thematic areas on:
 - Ocean Health and Sustainable Blue Economy (OHSBE).
 - Environmental Information and Data Management (EIDM).
 - Environmental Education, Communication and Awareness (EECA).
- f. The inclusion of new technical focus on:
 - Spatial planning as a tool for environmental management.
 - Strategic Environmental Assessment (SEA).
 - State of the Environment (SOE) reporting.
 - Valuation of ecosystem services.
 - Deep Seabed Mining (DSM) and other emerging issues.
- g. The inclusion of more fully developed components on:
 - Logical Framework Analysis (LFA).
 - Monitoring, Evaluation and Learning Plan (MELP).
 - Gender Equity and Social Inclusion Plan (GESIP).
 - Financing and Resourcing Plan (FRP).

All of these are reflected in this new KIEP 2021–2036.

3 NATIONAL ENVIRONMENTAL SETTING

3.1 Geography and population

As shown in Figures 1 to 3, the Republic of Kiribati is located at the true geographic centre of the vast Pacific Ocean, straddling both the Equator and the 180° meridian of longitude. It is the only country in the world to span all four hemispheres of the Earth – north, south, west and east. The total distance from the western-most island of Banaba to the eastern-most island of Caroline is ~4,000 km, and from the northern-most island of Teraina to the southern-most island of Flint is ~1,800 km.

The islands of Kiribati have a combined total landmass of 800 km² and a population of ~110,000. As such, along with its many Pacific island neighbours, Kiribati is often referred to as a Small Island Developing State (SIDS). Kiribati is also a Least Developed Country (LDC) under the United Nations definition. However, with an Exclusive Economic Zone (EEZ) that spans 3.5 million km² of ocean, almost half the size of the Australian continent and traditional island- and marine-based livelihoods that have been ecologically sustainable for millennia, the people of Kiribati and other Pacific island countries are increasingly referring to their nations as Big Ocean Sustainable States (BOSS). With a sea to land ratio of 5,000 to 1, the ocean is the most significant feature of the geography of Kiribati. As shown in Figures 1 to 3, the EEZs of each of the three island groups that comprise Kiribati (see below) are geographically separated by areas of international waters (high seas). This is unique for Pacific island countries.

There are a total of 33 separate islands in Kiribati, although those islands that are atolls may comprise a number of smaller 'islets' as part of the overall atoll, which is considered as a single 'unitary island'. Most references state that Kiribati consists of 32 atolls and one raised coral island – Banaba. However, geologically and geographically this is not strictly correct. As shown in Table 1 and detailed further in the Island Profiles in Annex 1, there are actually five island types (Figure 4), as follows:

- a. In addition to Banaba in the west, Teraina Island in the east is also a 'raised coral island'.
- b. Eight of the 33 islands are 'complete atolls' (with a typical atoll lagoon encircled by a ring-reef and islets).
- c. Eight of the 33 islands are 'submerging atolls' (with one side of the atoll – always the western side in Kiribati – largely open to the ocean, with the reef submerged due to tectonic subsidence).
- d. Two of the 33 islands are 'atoll extensions' (islands which sit atop the same seamount as a closely neighbouring atoll).
- e. Thirteen of the 33 islands are 'emergent seamount islands' (the summits of seamounts that emerge above the sea surface and do not have the typical atoll structure of an inner lagoon encircled by a reef and small islets, but instead comprise a single unitary island with a very narrow fringing reef).

As shown in Figures 1 to 3, the islands of Kiribati are divided into three distinct groups:

- a. The Gilbert group is located in the west, comprising the western outlier of Banaba and 16 other islands including the capital of South Tarawa on Tarawa Atoll. All the islands of the Gilbert group are inhabited. Over 50% of the nation's population live on Tarawa (~63,000 people of a national population of circa 110,000), and a further 30% of the national population (~36,600) is spread across the other islands in the Gilbert Group, with Abaiang Atoll having the second largest population in the Gilbert group at over 5,500. Kiritimati Atoll in the Line group has the second largest population nationally at over 6,500.

- b.** The Phoenix group is located centrally, comprising eight islands and hosting the world's first large-scale marine protected area – the World Heritage listed Phoenix Islands Protected Area (PIPA). There is a small community of circa 20 people on Kanton Atoll and the other seven islands of the Phoenix group are uninhabited. The Phoenix group also contains two large, submerged reefs – Winslow Reef in the north and Carondelet Reef in the south. These reefs have developed atop sunken seamounts and rise to within a few metres of the ocean surface, but do not break the surface even at low tide.
- c.** The Line group is located in the east, comprising eight islands, with distinct northern, central and southern groupings comprising three, two and three islands respectively. Only three of the Line Islands, Teraina, Tabuaeran and Kiritimati, all in the north of the Line group, are inhabited, with populations of approximately 1,700, 2,300 and 6,500 respectively. Kiritimati is the de-facto 'eastern capital' of Kiribati, has the largest land-area of any atoll in the world, accounts for ~70% of the total land mass of the whole of Kiribati, and is a significant biodiversity conservation site for seabirds and marine eco-tourism destination.

In terms of population it is important to consider demographics as part of any environmental strategy, as it is people who cause environmental impacts, it is people who suffer from environmental impacts, and it is people and not the environment that need to be managed in order to prevent, reduce and mitigate environmental impacts and shift to more sustainable lifestyles. As per the population data described above and presented in Table 1, Kiribati has some unusual demographic patterns which have significant implications for environmental impacts and environmental management, as follows (refer also to Figures 5 to 7):

- a.** Over 50% of the national population of ~110,000 lives on just one island – Tarawa Atoll, and within Tarawa the vast majority (~56,000 out of ~63,000) are very densely concentrated on South Tarawa, which has a population density of >3,500/km². This creates a wide range of environmental problems relating to urban over-crowding, unsustainable land-use, land contamination, waste management, sanitation, water security, pollution of groundwater and coastal marine waters and loss of biodiversity.
- b.** The second-most populated island – Kiritimati Atoll in the Line group in the east – only has around 5,500 people, but they are very highly concentrated in the main settlement of London, which is beginning to experience similar environmental problems relating to urban overcrowding as South Tarawa.
- c.** Most of the Gilbert group other than South Tarawa have populations of between 1,000 and 3,000, except for Abaiang Atoll which has ~5,500. Despite these low numbers, small land areas mean that population densities and thus pressures on the environment and natural resources can still be high.
- d.** Apart from a small community of only around 20 people on Kanton Atoll, the other seven islands of the Phoenix group are uninhabited (and largely uninhabitable), which helps to protect them from direct human impacts. However, they are still subject to other impacts including climate change and invasive species, and due to their extreme remoteness are difficult to protect and manage.
- e.** Similarly, apart from the three northern Line Islands of Teraina, Tabuaeran and Kiritimati, the five other islands in the Line group are uninhabited (and largely uninhabitable), which also helps to protect them from direct human impacts, although they also suffer from the same issues as the remote Phoenix Islands as mentioned above.

These widely differing population patterns across Kiribati mean that environmental issues also differ widely across the islands, from issues relating to high-density urbanisation to issues and challenges associated with extremely remote, uninhabited islands. These differences dictate that this KIEP-SEP needs to embrace a wide range of strategies and management actions that are tailored to each island's setting and circumstances.

TABLE 1: Summary of the islands of Kiribati.
(Refer Annex 1 – Island Profiles – for details of each island)
(Islands are listed north to south in each group)

GILBERT GROUP

NAME	ISLAND TYPE	POPN (2015 CENSUS)
MAKIN Island	Atoll Extension (linked to Butaritari)	1,990
BUTARITARI Atoll	Submerging Atoll	3,224
MARAKEI Atoll	Complete Atoll	2,799
ABAIANG Atoll	Submerging Atoll	5,568
TARAWA Atoll	Submerging Atoll	63,017
MAIANA Atoll	Submerging Atoll	1,982
ABEMAMA Atoll	Complete Atoll	3,262
KURIA Island	Atoll Extension (linked to Aranuka)	1,046
ARANUKA Atoll	Complete Atoll	1,125
NONOUTI Atoll	Submerging Atoll	2,743
BANABA Island*	Raised Coral Island	268
TABITEUEA Atoll	Submerging Atoll	5,261
BERU Island	Emergent Seamount Island with reef	2,051
NIKUNAU Island	Emergent Seamount Island	1,789
ONOTOA Atoll	Submerging Atoll	1,393
TAMANA Island	Emergent Seamount Island	1,104
ARORAE Island	Emergent Seamount Island	1,011
Total population		99,633

* Geographically Banaba is a western outlier but is included in the Gilbert group for this table.

PHOENIX GROUP

NAME	ISLAND TYPE	POPN (2015 CENSUS)
KANTON Atoll	Complete Atoll	20
ENDERBURY Island	Emergent Seamount Island	0
BIRNIE Island	Emergent Seamount Island	0
RAWAKI Island	Emergent Seamount Island	0
McKEAN Island	Emergent Seamount Island	0
MANRA Island	Emergent Seamount Island	0
ORONA Atoll	Complete Atoll	0
NIKUMARORO Atoll	Complete Atoll	0
Total population		20

LINE GROUP

NAME	ISLAND TYPE	POPN (2015 CENSUS)
TERAINA Island	Raised Coral island	1,712
TABUAERAN Atoll	Complete Atoll	2,315
KIRITIMATI Atoll	Submerging Atoll	6,456
MALDEN Island	Emergent Seamount Island	0
STARBUCK Island	Emergent Seamount Island	0
CAROLINE Atoll	Complete Atoll	0
VOSTOCK Island	Emergent Seamount Island	0
FLINT Island	Emergent Seamount Island	0
Total population		10,483

SUMMARY DATA

	GILBERT GROUP	PHOENIX GROUP	LINE GROUP	KIRIBATI TOTAL
No. of Complete Atolls	3	3	2	8
No. of Submerging Atolls	7	0	1	8
No. of Atoll Extensions	2	0	0	2
No. of Raised Coral Islands	1	0	1	2
No. of Emergent Seamount Islands	4	5	4	13
Total No. of Islands	17	8	8	33
No. of Inhabited Islands	17/17	1/8	3/8	21/33
No. of Uninhabited Islands	0/17	7/8	5/8	12/33
Total population	92,900	20	10,482	110,136



Island Type 1 – Complete Atoll (Marakei)



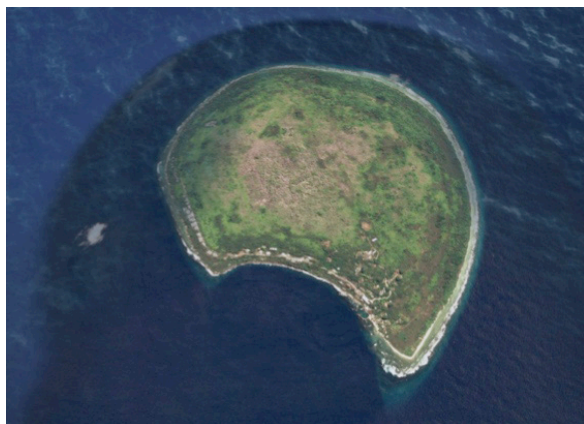
Island Type 1 – Complete Atoll (Kanton)



Island Type 2 – Submerging Atoll (Tarawa)



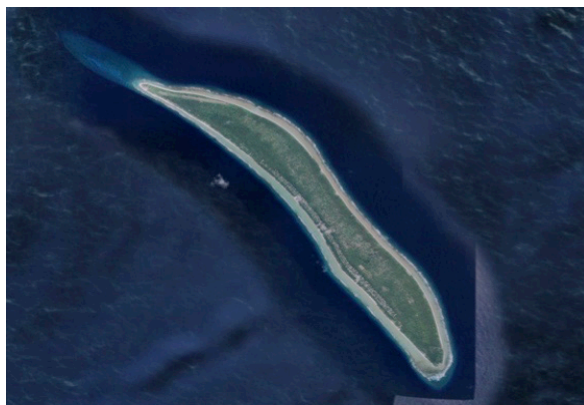
Island Type 2 – Submerging Atoll (Butaritari) and
Island Type 3 – Atoll Extension (Makin – Top Right)



Island Type 4 – Raised Coral Island (Banaba)



Island Type 4 – Raised Coral Island (Teraina)



Island Type 5 – Emergent Seamount Island (Arorae)



Island Type 5 – Emergent Seamount Island (Malden)

FIGURE 4: Examples of the five island types of Kiribati (scales are not relative: refer Annex 1) (Google Earth)

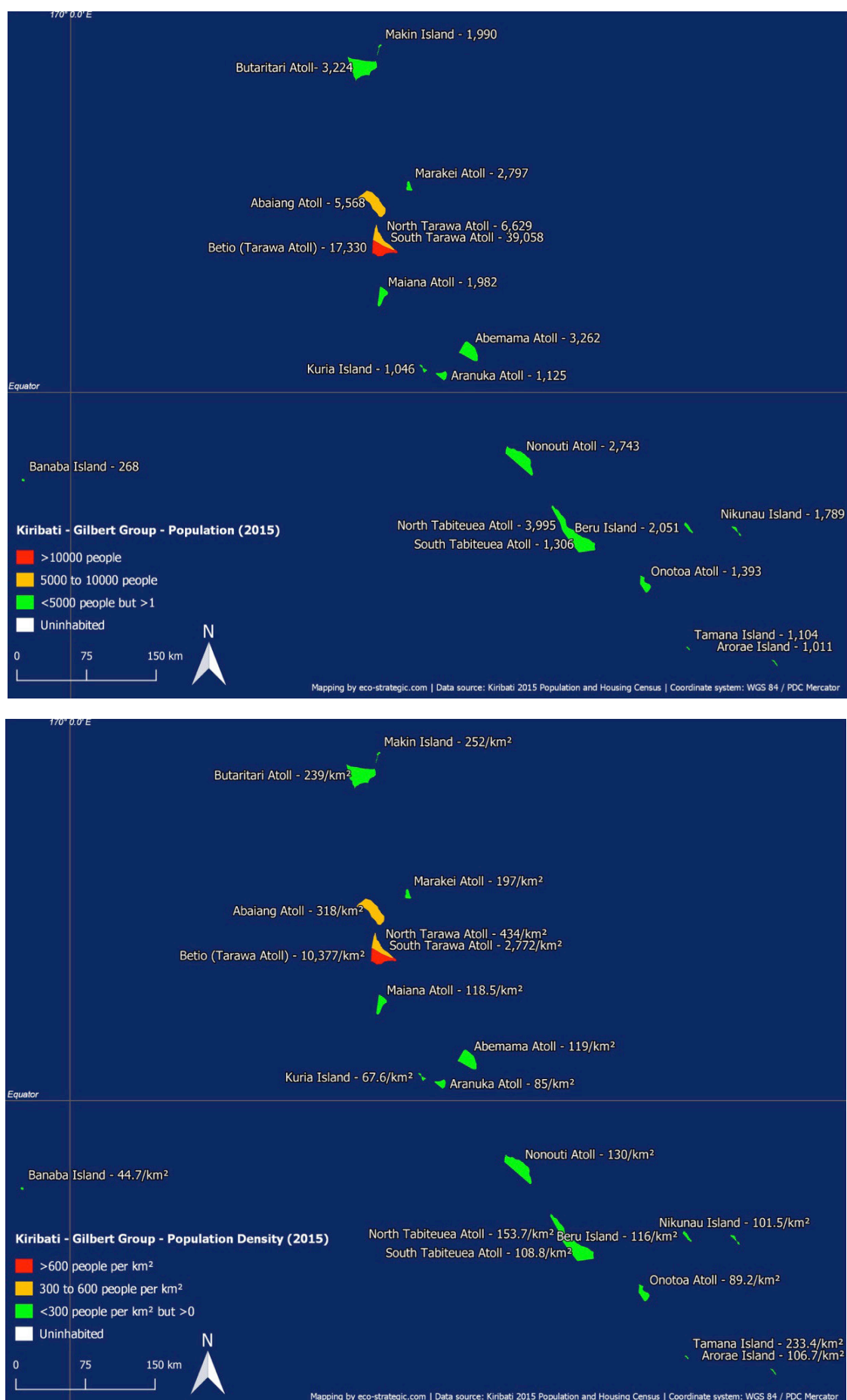


FIGURE 5: Total population (top) and population density (bottom) for the Gilbert Islands group



FIGURE 6: Total population (top) and population density (bottom) for the Phoenix Islands group

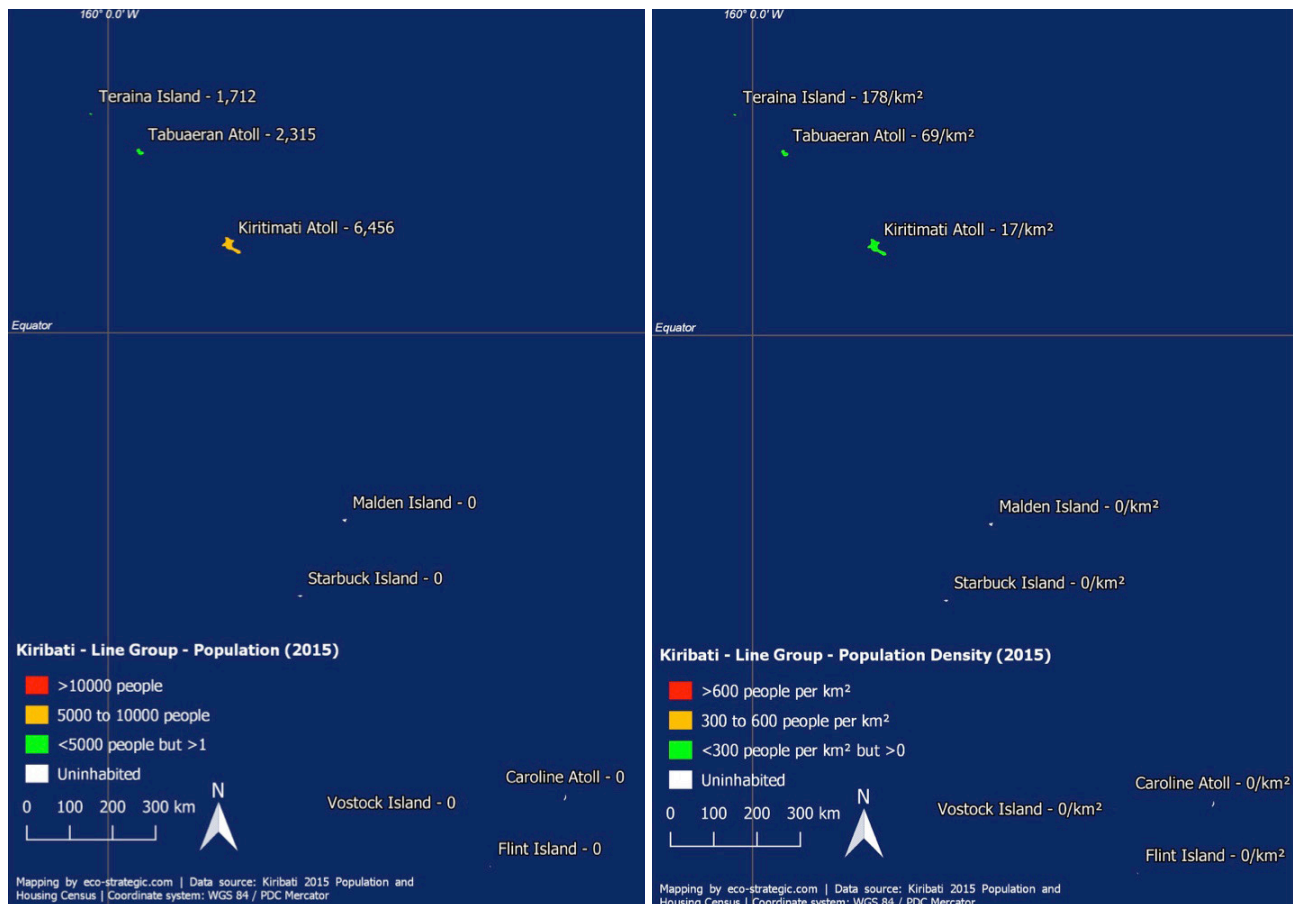


FIGURE 7: Total population (left) and population density (right) for the Line Islands group

3.2 Economic value of Kiribati's ecosystem services

When considering the national environmental setting of a country, in order to inform a long-term, integrated national environmental policy and strategy such as this KIEP, it is important to not only assess the environmental and ecological resources of the country in scientific and technical terms, but also in terms of their economic value (Costanza et al. 1998). Including an assessment of economic value is also extremely useful in putting environmental and ecological issues into context relative to national economic development plans and objectives. This is especially important in the case of this KIEP, which seeks to integrate and mainstream environmental issues into all aspects of national development planning. Environmental and ecological issues are more relevant to national development planners if they have an associated economic value – which can be assessed by placing a monetary value on ecosystem services (Marre & Billé 2019).

To date in the Pacific islands region, most studies on the value of ecosystem services have focussed on coastal and marine environments, with very little work on terrestrial ecosystem services. However, an assessment of the economic value of coastal and marine ecosystem services will provide a very strong indication of the overall national value for a country like Kiribati, with a national area that is over 99% ocean.

The coastal and marine economy encompasses not only conventional industries such as fishing, shipping, offshore oil and gas, offshore wind, coastal and marine tourism, marine biotechnology and others, but also the natural assets and ecosystem services, such as fish, coastal protection by reefs, shipping lanes, CO₂ absorption (blue carbon) and the like. As the two are inextricably linked, valuation of the ocean economy should not only include the value of human economic activity, production and industry but also the value of the ecosystem services, natural resources and natural capital provided by oceans (OECD 2016).

At the global level, according to the OECD in their report *The Ocean Economy in 2030* the global ocean economy, measured in terms of the ocean-based industries' contribution to economic output and employment, is significant. Preliminary calculations based on the OECD's Ocean Economy Database value the global ocean economy's output in 2010 at US\$1.5 trillion, or approximately 2.5% of world gross value added (GVA). The OECD report does not include a valuation of the full range of ocean ecosystem services.

A report by WWF in collaboration with business consultancy the Boston Consulting Group, *Reviving the Ocean Economy – The Case for Action 2015* (WWF 2015), estimates that the global economic value of coastal and oceanic environments is conservatively US\$2.5 trillion per year, almost double the purely economic value estimated by OECD (2016). The WWF report further states that the overall value of the ocean as an asset is 10 times US\$2.5 trillion.

While it is beyond the scope of this KIEP to verify the bases, reliability and veracity of these estimates, they do serve to illustrate the extremely significant value of both the global ocean economy and ocean ecosystem services, as well as natural capital. Within the Pacific islands region, three initiatives relating to the assessment of ocean wealth have been implemented in recent years:

- a. The 2010 IUCN report *Economic Value of the Pacific Ocean to Pacific Island Countries & Territories* (Seidel and Lal 2010).
- b. The 2016 WWF report *Reviving Melanesia's Marine Economy – the Case for Action* (Hoegh-Guldberg et al. 2016).

- c. The 2013 to 2018 MACBIO project, *Marine & Coastal Biodiversity in Pacific Island Countries* (<http://macbio-pacific.info/>), funded by the German aid agency GIZ and implemented by SPREP and IUCN, which amongst other activities undertook marine ecosystem service valuations and marine bioregion mapping in Fiji, Kiribati, Solomon Islands, Tonga and Vanuatu.

The 2010 IUCN report (Seidel and Lal 2010) appears to be the first and only integrated, multi-sector assessment of ocean economic values for all Pacific island countries and territories. The report presents economic arguments as a policy and advocacy tool to demonstrate society's dependence on healthy oceans, the economic consequences of degradation of ocean health, and the need for policy and management reforms and interventions to address these, including through IOM. Some of the main findings are:

- a. Reliable baseline data about the economic values of key ocean sectors is not readily available, let alone data on the value of ocean ecosystem services and natural capital, or on the cost of losses to ecosystem services and natural capital under 'business as usual' scenarios.
- b. Coastal and marine environments in the Pacific islands not only provide economic livelihoods and food security for millions of islanders, but also provide highly significant benefits for overseas societies and economies, for example by providing much sought-after island holiday destinations for the rest of the world, and exporting over 90% of their tuna fisheries production to feed global markets. As with the impacts of global climate change, the global community owes a debt to Pacific island societies for the benefits that they gain from Pacific island coastal and marine resources and environments.
- c. Without considering ecosystem services values, tourism is the most valuable coastal-and-marine dependent economic sector at US\$2.27 billion GVP per year, representing 7.2% of regional GDP, followed by fisheries (both coastal and offshore) at US\$1.04 billion GVP per year, representing 3.3% of regional GDP, with a combined value of US\$3.32 billion GVP, or 10.5% of regional GDP. These are not large percentages in terms of the broader regional economy.
- d. The percentage that the ocean economy makes to the broader regional economy is even less if employment figures are considered, with tourism employing 188,000 people across the region at the time of the report (2010), representing only 5.8% of total employment across the region, and fishing employing only 49,000 people, or 1.5% of total employment across the region.
- e. These relatively low percentages indicate that either ocean-based economies are not as valuable in the Pacific islands region as might be thought, or that there is still significant untapped potential that can be developed, or that the data sets are not reliable.
- f. The Total Economic Value (TEV) of ecosystem services for coral reefs and mangroves is estimated to be about US\$3.8 billion and US\$3.9 billion per year respectively for the entire Pacific island and territory region, giving a combined total of US\$7.7 billion, or twice the value of the combined economic value of tourism and fisheries. This illustrates the vital importance of considering the value of ecosystem services and natural capital in addition to pure economic value.

The 2016 WWF report (Hoegh-Guldberg et al. 2016) adopted the concept of Gross Marine Product (GMP), ostensibly analogous to a country's annual gross domestic product (GDP) but considering the ocean-based components of GDP. The report finds that:

- a. The annual GMP of the Melanesian region (Fiji, New Caledonia, Papua New Guinea, Solomon Islands and Vanuatu) is at least US\$5.4 billion, which is broadly equivalent to the combined GDPs of Fiji and Solomon Islands, making the combined marine economy the third largest economy in the region (after PNG and New Caledonia).
- b. The total 'ocean asset base' of the Melanesian region at a minimum of US\$548 billion, composed of primary assets (e.g., marine fisheries, coral reefs, mangroves, seagrass) and adjacent or ancillary assets, including productive coastlines and carbon absorption.

For Kiribati, the MACBIO project calculated a marine ecosystem service valuation of >AU\$400 million in 2013, or double the national GDP, which was AU\$216 million in 2014 (Figure 8). The MACBIO project included the ecosystem service values of subsistence and commercial fisheries, mariculture (seaweed, clams etc.), sand and aggregate mining, coastal and marine tourism, carbon sequestration (blue carbon), coastal protection (by reefs and mangroves), research, education, management, and cultural values. If the terrestrial ecosystem services of Kiribati were also included the value would be higher.

Clearly, if the economic value of ecosystem services is double the national GDP, the need to protect ecosystem services and to integrate and mainstream environmental issues into all aspects of national development planning becomes much more politically relevant and compelling.



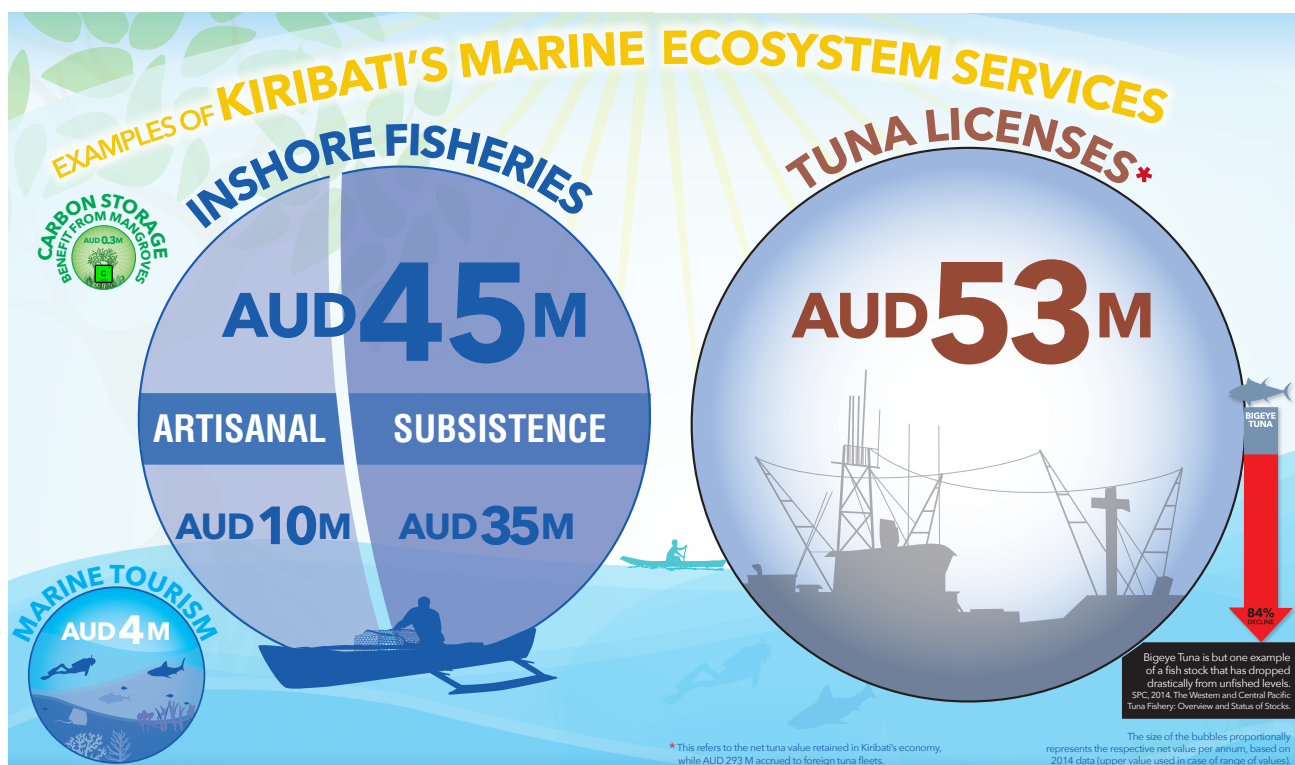
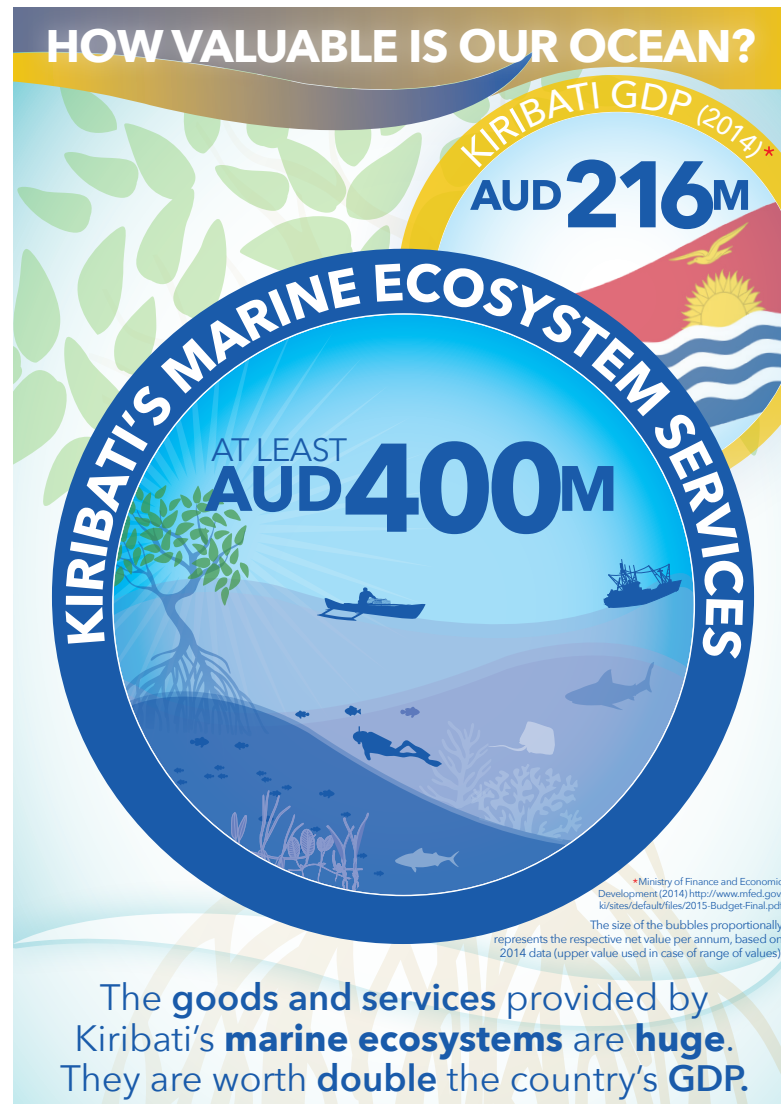


FIGURE 8: Marine ecosystem service valuation for Kiribati 2013 (<http://macbio-pacific.info/>)

3.3 Climate change issues and impacts

Low-lying atoll-nations like Kiribati are on the front line of global climate change, and the very existence and long-term sustainability of the nations are threatened by sea-level rise and other climate impacts (Nicholls et al. 2007). The government and the people of Kiribati and other Pacific island countries have watched with increasing alarm the accelerating impacts of global climate change, caused by far-away industrial economies but having the most severe impacts in their own backyard.

Sea-level rise, caused both by thermal expansion of the oceans due to increasing sea temperatures and by melting of glaciers and polar ice caps (Cazenave and Llovel 2010), is perhaps the most serious climate change impact in the Pacific. The Pacific islands region is recording rates of sea-level rise somewhat higher than other parts of the world (Becker et al. 2012). Since the 1990s the Australian Bureau of Meteorology (BOM) has run the *South Pacific Sea-level & Climate Monitoring Project* with permanent sea-level gauges in 12 Pacific island countries, including in Kiribati. From 1993 to 2015 the average rate of increase in sea level was 5 mm/year. The BOM estimates the rate of rise to be in the range of 3.4 to 11.6 mm/year.

Sea-level rise is of particular concern in the Pacific as it causes inundation and potentially increased erosion of the low-lying atolls, threatening their very existence (Church et al. 2006; Biribo 2012). Sea-level rise also causes saltwater intrusion and salinisation of the freshwater lens that sits below the land surface of the islands, destroying the primary freshwater source of resident populations (Terry and Chui 2012; Spennemann 1996; Terry and Falkland 2010). Salinisation of the freshwater lens can also cause dieback of island vegetation, including coconut trees and taro beds, which are the very 'givers-of-life' for island inhabitants. Numerous examples of such impacts are recorded throughout Kiribati (Biribo 2012; Duvat et al. 2013), including several islands where buildings and infrastructure have had to be abandoned or moved due to increasing coastal erosion and dieback of natural vegetation and agricultural crops (Uriam 2011).

It has been postulated that global warming may also increase the frequency and severity of tropical cyclones (Nicholls et al. 2007), due to higher thermal energy in the atmosphere and particular in the sea. Cyclones can be particularly devastating for small islands and in recent years there have been a number of significant cyclones in the Pacific. Many of the islands of Kiribati are located close to the Equator and are therefore generally outside the tropical cyclone zone, although those located further from the Equator can be impacted.

Rising sea temperatures are also of major concern, especially as warming of oceans poses a severe threat to coral reefs, which constitute the "premier" coastal ecosystem and marine resource of Kiribati (SPREP 2016). Rising sea temperature increases thermal stress on marine organisms, and particularly corals, and can result in mass coral bleaching and mortality (Hoegh-Guldberg 1999). Mass bleaching events are increasing in the Pacific, including in Kiribati, and when compounded with the range of other impacts faced by coral reefs, pose a serious threat to their long-term existence (Eakin et al. 2016).

Ocean acidification, caused by the absorption of atmospheric CO₂ into the ocean, is also a major threat, particularly to marine organisms with calcium carbonate skeletons such as corals (Hoegh-Guldberg et al. 2007) and foraminifera (Fujita et al. 2011; Kawahata et al. 2019), as higher acidity decreases aragonite (calcium carbonate) saturation and interferes with the calcification process (Hoegh-Guldberg et al. 2011). The *Pacific Islands Ocean Acidification Vulnerability Assessment* was undertaken by SPREP in 2016 and finds that the pH of the tropical Pacific has decreased by 0.06 pH units since the

beginning of the industrial era (early 19th Century), and the current rate of decrease is ~0.02 units per decade. The report predicts that the pH of the tropical Pacific will decrease by a further 0.15 units by 2050. The best available modelling suggests that by 2050, approximately 75% of coral reefs will be in areas where aragonite levels are 'not adequate' for sustainable coral growth (Johnson et al. 2016).

Healthy oceans and coastal and marine ecosystems are not only crucial for economic growth and food production but are also fundamental to global efforts to mitigate climate change. So-called "blue carbon" sinks such as mangroves and seagrass beds sequester 25% of the extra CO₂ from fossil fuels (FAO 2017) and protect coastal communities from floods and storms (Donner and Webber 2014; Rouatu et al. 2017). Kiribati has significant blue-carbon sinks including pockets of mangrove and very extensive seagrass and macro-algae beds throughout the expansive lagoons of many of the atolls. These blue carbon stocks are potentially threatened by large-scale dredging and land-reclamation projects proposed under the Kiribati 20-year Vision 2016-36 (KV20) and KDP 2021–2024.

Overall, climate change is considered to be perhaps the most significant threat to the sustainable future of the people of Kiribati and other Pacific island countries, although locally caused direct impacts outside of climate change are also highly significant and should not be ignored.

The lead agency for coordinating climate change policy issues in Kiribati is the Office of the President (OB), with the Ministry of Finance and Economic Development (MFED) coordinating climate change finance at the national level and the multi-sector Kiribati National Experts Group (KNEG) providing scientific and technical advice and a mechanism for cross-sectoral coordination. Various Ministries and organisations have roles and responsibilities for climate change issues as outlined in the National Climate Change Policy (NCCP) (undated).

The climate change roles and responsibilities of MELAD/ECD, through its Climate Change Unit (CCU) is to implement environment – climate change science and technical interventions including environment and climate change nationally and externally funded initiatives and projects, and to strengthen national capacities (institutional, human resources, and programmes) for effective long term planning and response to climate change problems, with a particular focus on environment protection, conservation, management, sustainability and resilience.

Specific climate change mitigation strategies and actions are outlined in the Intended Nationally Determined Contributions (INDC) (current version 2016) under the Paris Agreement to the United Nations Framework Convention on Climate Change (UNFCCC). Climate change adaptation strategies and actions are outlined in the National Adaptation Program of Action (NAPA) (latest version 2007) and now the Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management (KJIP) (current version 2019-2028), with support through the National Actions Plan Global Network (NAP GN). This KJIP does not seek to duplicate these existing policies, plans and programmes but rather to support their implementation and to identify and address key gaps.

Many current efforts at climate change adaptation in Kiribati and other Pacific island countries involve hard engineering, including building rock and concrete seawalls and reclaiming and raising coastal land (Duvat 2013). Such interventions can cause a range of negative impacts, including disturbance and destruction of coastal habitats, changes to coastal hydrodynamics and sediment processes and impacts on coastal aesthetic values. There is an urgent need for a greater focus on 'green' adaptation measures, including soft engineering options and building with nature (Gedan et al. 2011; Sovacool 2011). These issues are included as high priorities in the SEP in section 9.

Coastal erosion threatening village.



Vegetation-die back from salinisation.



Seawater inundation flooding village.



Coral reef mortality after mass coral bleaching.



FIGURE 9: Examples of existential climate change impacts in Kiribati.
(Sources: all NAPA 2017, except bottom: McNally)

3.4 Freshwater resources, impacts and status

Freshwater is one of the most vital, strategic resources that underpins human life, health and wellbeing, sustains island ecosystems, habitats, species and other environmental resources, supports agriculture and provides development opportunities, “No Water = No Life”. The challenges faced in the water security and sanitation sector in Kiribati are amongst the most difficult in the world, driven by natural scarcity, variability and vulnerability of water resources in small island environments. Other challenges include demographic trends towards highly dense urbanisation on South Tarawa and Kiritimati, versus widely dispersed and remote villages on other islands, lack of water infrastructure, over-exploitation and contamination of groundwater resources and the impacts of other human activities (White et al. 2007; SIWRWMPIC 2007). Lack of adequate sanitation continues to be a major problem in Kiribati, which has very high per capita rates of water-borne and sanitation-related illnesses by global standards (Troeger et al. 2018).

As with all environmental sectors in Kiribati, climatic change impacts are perhaps the most significant threat to water security, including changes in rainfall patterns, allegations of more frequent and prolonged droughts on some islands (yet to be proven), and salinisation of groundwater resources through seawater intrusion into island water lenses (Singh et al. 2001; Nunn 2009).

Significant improvements to water supply infrastructure have been achieved on South Tarawa and Kiritimati and some of the outer islands over the past two decades through various donor projects, including shifting to user-pays systems in urban water supplies, reducing leakage from water main pipes, expanding and improving rainwater harvesting from the roofs of buildings. Lead responsibility for water and sanitisation issues rests with the Ministry of Infrastructure and Sustainable Energy (MISE), in cooperation with other ministries, through the multi-stakeholder National Water and Sanitation Coordination Committee (NWSCC) and the whole-of-government National Water Resources Implementation Plan (NWRIP) (latest version 2008-2018), however there is no new plan post-2018.

The previous UNDP-GEF Pacific Integrated Water Resources Management Programme (IWRMP) 2009–2014 carried some extremely helpful foundational work in moving Kiribati towards a more integrated approach to water resource management, where all water supplies and all water uses are managed under a coordinated, integrated framework. However, since closure of the IWRMP the management of freshwater resources in Kiribati appears to be fragmenting back to a non-integrated, uncoordinated approach with different Ministries and Divisions having different responsibilities. Many major problems still exist and much work is still required, especially in relation to protection of groundwater (sub-atoll water lenses) from pollution and contamination and further action to improve water security and sanitation on the outer islands, if Kiribati is to achieve a safe, secure and sustainable freshwater future, and adequate levels of sanitation.

This KIEP does not seek to duplicate the existing arrangements under the NWSCC and NWRIP but rather to support their implementation and to address any key gaps, especially in relation to the protection of groundwater resources from pollution and contamination and the environmental and ecological aspects of freshwater resources management.

From an environmental perspective, which is the primary focus of this KIEP, there has been virtually zero consideration of environmental and ecological water flows and needs in Kiribati to date – the entire focus has been on water security for direct human needs. Secure, clean and sustainable freshwater resources are also essential to sustain Kiribati’s island ecosystems and biodiversity, and if

human uses deplete and degrade freshwater resources, then ecosystems, habitats and biodiversity will also deplete and degrade.

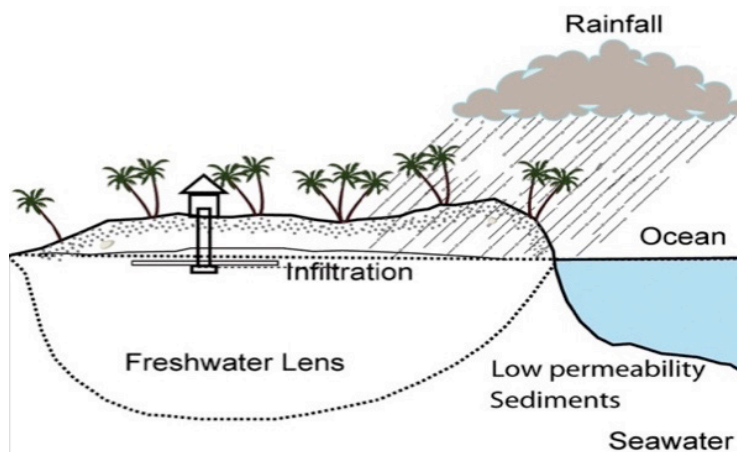
Some islands of Kiribati have special and unique freshwater ecosystems, habitats and biodiversity, such as the lakes, swamps and canals of Teraina Island in the Line Islands group, which are already beginning to experience salinisation due to climate change. The giant swamp taro (*bwabwai*), which is an essential staple that underpins food security in Kiribati, an iconic symbol of traditional culture and an ecological feature of many island ecosystems, is also threatened by degradation of freshwater resources.

Both the KV20 and the KDP 2021–2024 propose significant expansion of agriculture in Kiribati, including in the outer islands, and if not assessed and managed properly, such development could affect environmental and ecological water flows and needs. The KV20 and KDP 2021–2024 also propose large-scale dredging and reclamation to create new land for urban, commercial and industrial development. Increased urban, commercial and industrial development could increase demands on freshwater resources in Kiribati by orders of magnitude, which is simply not sustainable given the naturally very low base of freshwater security across the country. Creating more land from dredging would not increase the underground water lens, as the new land is simply marine sands that have been dredged and deposited, and is not underlain by the natural atoll geology, and is intended to be covered in concrete and infrastructure.

There is an urgent need to begin to include environmental and ecological water flows and needs in the freshwater security and sustainability equation in Kiribati, to formally protect special and unique freshwater ecosystems, habitats and biodiversity in the country, such as those on Teraina Island, and to conduct a national Strategic Environmental Assessment (SEA) of freshwater security and sustainability, in relation to the national development proposals contained in the KV20 and KDP 2021–2024. These issues are included as high priorities in the SEP in section 9 of this KIEP.



© Carlo Iacovino



Sub-island freshwater lenses are degrading



Rainwater harvesting from roofs supplements lens supplies



The globally unique canals, swamps and lakes of Teraina Is.



Giant taro cultivated in freshwater swamps

FIGURE 10: Examples of freshwater security and sustainability issues in Kiribati

(Image sources from top: U.S. Global Change Research Program

(adapted from Burns (2002)), infopacific.com, Wikipedia, teraina.com)

3.5 Ecosystems and biodiversity resources, impacts and status

Kiribati is a party to the International Convention on Biological Diversity (CBD) and subscribes to the CBD's Aichi Targets. Lead responsibility for biodiversity issues rests with MELAD/ECD, with inter-ministerial and stakeholder coordination through the National Biodiversity Planning Committee (NBPC). National biodiversity strategies and actions are outlined in the periodic National Biodiversity Strategy and Action Plan (NBSAP) (latest version 2016–2020), and sub-plans such as the Kiribati Programme of Work for Protected Areas (PoWPA) (latest version 2010) and the National Invasive Species Strategy and Action Plan (NISSAP) (latest version 2015–2020). This KIEP does not seek to duplicate these existing arrangements but rather to support their implementation and to address any key gaps, as outlined in sections 3.5.1 and 3.5.2 below.

Despite the fact that over 99% of Kiribati's national area is ocean, with a sea to land ratio of 5,000 to 1, and despite the fact that on many of the islands of Kiribati the atoll lagoons and coral reefs are the major geographical feature, historically most research and management action on biodiversity in Kiribati was focussed on terrestrial, island biodiversity. Even in the previous KIEP 2013 the biodiversity theme was titled 'Island' Biodiversity Conservation and Management.

An outstanding exception and major credit to the Government of Kiribati was the declaration of the world's first EEZ-scale marine protected area (MPA) – the 408,250 km² Phoenix Islands Protected Area (PIPA) in 2008, which at the time was the world's largest MPA. The PIPA was also declared a World Heritage Area in 2010, and in January 2015, the entire PIPA area comprising of island lagoons, corals reefs and deep open sea was officially closed to commercial fishing. Declaration of the PIPA means that 12% of Kiribati's marine waters are protected, exceeding the Aichi Target 11, which is 10% by 2020. However, there remain major challenges to the effective management of the PIPA and significant challenges relating to marine biodiversity protection, conservation and management throughout the rest of Kiribati.

Given these points, while retaining the importance of terrestrial island biodiversity, this KIEP also seeks to raise the importance of marine biodiversity, including enhancing management of the PIPA and expanding additional actions to other parts of the nation's marine environment.

3.5.1 Island ecosystems and biodiversity

On a global scale, the terrestrial island biodiversity of Kiribati is not high, and in fact the diversity of indigenous (non-introduced) flora and fauna is amongst the poorest on earth. This is due to the very small land area, very low geographical diversity, the extreme remoteness of the islands which limits natural species arrival from far-away centres of biodiversity, poor soils of alkaline coral composition and high porosity, lack of standing surface water (except on Teraina Island) and periods of drought, as well as susceptibility to over-exploitation by humans, especially on those islands with high population densities.

Despite these limitations, the nation still hosts some extremely important terrestrial island biodiversity resources and values, including *inter alia*:

- a. Traditional, agro-forest ecosystems that are vital to the food security and sustainable, subsistence livelihoods of the Kiribati people, including integrated, layered combinations of coconut, breadfruit, pandanus, papaya and other essential food trees and the iconic swamp taro pits.
- b. The globally unique freshwater/brackish water canal, swamp and lake ecosystems and associated species of Teraina Island – which need a formal protection, conservation and management regime.
- c. Globally significant roosting, feeding and nesting sites for a wide range of migratory bird and seabird species, especially on the uninhabited islands of both the Phoenix and Line island groups. These include the world's largest remaining populations of the Phoenix Petrel and White-throated Storm Petrel, both of which have an IUCN classification of Endangered (BirdLife International 2018b; BirdLife International 2018a). Additionally, while Frigate Birds, Boobies and Tropicbirds are represented throughout Kiribati, globally important populations of these three species occur in the Phoenix and Line Islands. The Blue Noddy, which is only found in the central Pacific, has globally important populations in the Phoenix Islands and on Kiritimati.

There are no indigenous (non-introduced) terrestrial mammals in Kiribati and only one endemic bird species, the Christmas Island Reed-warbler (*Te Bokikokiko*), which is confined to Kiritimati and Teraina Islands.

Kiribati also hosts, on Teraina Island, the world's largest population (~1,000) of the globally endangered Rimatara Lorikeet (*Vini kuhlii*), even though Teraina is located >2,500 km from the bird's original home range in the southern Cook Islands and Austral and Society Islands, where it is almost extinct (the lorikeet was likely brought to Teraina with Polynesian navigators). The Rimatara Lorikeet has brilliant plumage and a highly social behaviour, and was treasured by ancient Polynesians as a pet, for its feathers and for trade. The health of the population on Teraina is assisted by the abundant coconut forests, as the bird feeds on the nectar of coconut flowers and nests in old coconut shells and husks. Teraina is infested with feral cats and rats; however the abundance and healthy tall coconut forest helps to protect the lorikeets, from rat predation. The Teraina population comprises some 60% of the remaining global population, is considered crucially important for its global survival, and could be a source to re-populate islands in the birds' original range in SE Polynesia (BirdLife International 2016).

Major threats to terrestrial island biodiversity in Kiribati include habitat loss due to human population expansion, overexploitation through direct use of biodiversity resources, the impacts of invasive species and changes in environmental conditions due to climate change (Kingsford et al. 2009; Jupiter et al. 2014). While the extremely remote, uninhabited islands of the Phoenix and Line island groups benefit from their remoteness in terms of reduced levels of human impact, they also suffer from a lack of protection, management, compliance and enforcement action – due to their remoteness.

The status of terrestrial island biodiversity in Kiribati is poorly documented, there are significant data gaps and there is no comprehensive, integrated, nationally coordinated island biodiversity assessment and monitoring programme. Addressing this gap is included as a high priority in the SEP in section 9 of this KIEP.

Traditional, agro-forest ecosystems with layered species



Globally significant seabird nesting sites



Invasive species are a significant threat in Kiribati



60% of remaining global population of Rimatara

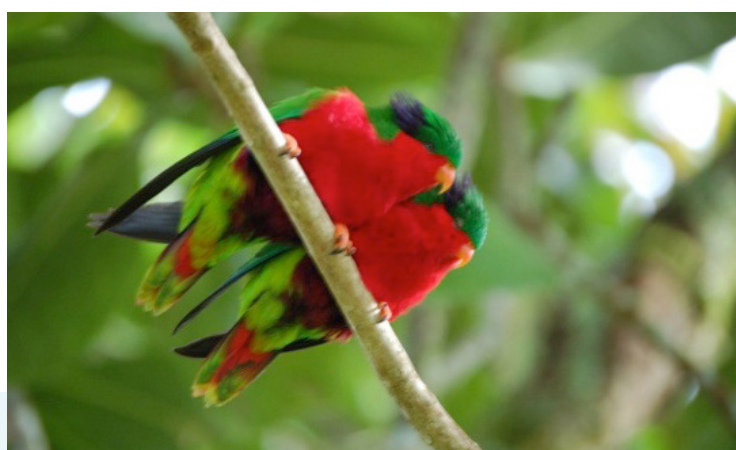


FIGURE 11: Examples of terrestrial biodiversity resources, values and issues in Kiribati
(Image sources from top: SPREP, NZMFAT, Turama Pacific, Ray Pierce)

3.5.2 Marine ecosystems and biodiversity

The marine ecosystems of Kiribati are diverse, supporting a high diversity of species, including *inter alia*:

- a. Hyper-saline, semi-marine ponds, lakes and lagoons on many of the islands, some connected to the sea by underground channels, and supporting unique species assemblages.
- b. Pockets of mangrove forest on some islands, with significant stands found on Butaritari, Tarawa, Mwaiana and Aranuka islands (all in the Gilberts group). Five species are found in Kiribati – *Rhizophora stylosa*, *Bruguiera gymnorrhiza*, *Sonneratia alba*, *Lumnitzera littorea* and *Lumnitzera racemosa*. The total area of mangroves in Kiribati is 7.9 km² or about 1% of the total land area of the country.
- c. Beaches that are regionally important nesting sites for marine turtles.
- d. Extensive atoll lagoons with associated sandflats, macro-algae beds, seagrass beds and coral reefs.
- e. The two large, submerged reefs within the Phoenix group (Winslow in north and Carondele in south).
- f. The deep ocean ecosystem which makes up the vast majority of Kiribati's EEZ, with depths of around 4 km and up to 8 km in the Nova-Kanton Trough, and over 354 submarine mountains or seamounts (see paragraph 5 below). The deep ocean ecosystem supports a wide range of pelagic marine species, including commercially valuable stocks of tuna and other pelagic fish species.

Coral reefs and atoll lagoons are the most visible and highly used marine ecosystems of Kiribati. Overall, Kiribati has around 2,940 km² of coral reef, which is nearly three times its total land area (Spalding et al. 2001). The trends in coral species diversity reflect the broader regional trend of diminishing diversity from west to east. There are 115 species of hard corals recorded from Tarawa and Abaiang Atolls in the west and only 71 at Tabuaeran in the east (Spalding et al. 2001).

The main threats to the coral reefs and atoll lagoons of Kiribati are overexploitation through direct use of biodiversity resources (fishing and collecting for food), especially on the more densely populated islands, coastal mining to extract sand and aggregate for construction, building of causeways between islets which affects hydrodynamics and sediment processes (Biribo 2012), pollution from land-based sources and the impacts of climate change as discussed in section 3.3.

The KV20 and KDP 2021–2024 also propose large-scale dredging of atoll lagoons and reclamation of new land for the construction of transshipment hubs (ports) at Tarawa and Kiritimati Atolls, and for urban, commercial and industrial development. If not assessed and managed properly such major construction works could cause very significant impacts on the atoll lagoon and coral reef ecosystems (Erftemeijer et al. 2012).

The 354 seamounts spread throughout the Kiribati EEZ are another important but largely unstudied feature of the ocean landscape. Many have elevated biodiversity compared to surrounding deep-sea areas. They can therefore function as stepping-stones, thereby expanding species ranges across ocean basins (Miller & Gunasekera 2017). Seamounts are also key locations for many fisheries (Morato et al. 2010; Clark 2009) and are known to contain valuable mineral resources. Deep seabed mining operations have the potential to severely impact seamount ecosystems (Miller et al. 2018).

Overall, the status of marine biodiversity in Kiribati is even more poorly documented, with even more significant data gaps, than for terrestrial biodiversity. As for terrestrial biodiversity there is no comprehensive, integrated, nationally coordinated assessment and monitoring programme for marine biodiversity. Addressing this gap is included as a high priority in the SEP in section 9 of this KIEP.

Mangrove wetlands



Tidal flats with macro-algae, seagrasses and shellfish resources



Proposed major land reclamation may cause significant impacts



Nearly 3,000 km² of pristine coral reefs



FIGURE 12: Examples of marine biodiversity resources, values and issues in Kiribati
(Image sources from top: ScienceDirect, SPC, Visit Kiribati, WSJ)

3.6 Non-living resources, impacts and status

Freshwater is one of the most important non-living resources of any nation, which is even more significant to freshwater-constrained countries like Kiribati and is discussed separately in section 3.4 above.

Another vital non-living resource is land – providing physical space for human habitation, commerce, industry and agriculture, and to support terrestrial ecosystems, habitats and biodiversity. Kiribati is one of the most land-constrained countries in the world, not only due to the extremely small size of the islands, but also because of their extremely low elevation above sea-level. Most of the atolls are no higher than 3 meters, with a few up to 9 meters. Banaba is an exception with the highest elevation of 81 meters.

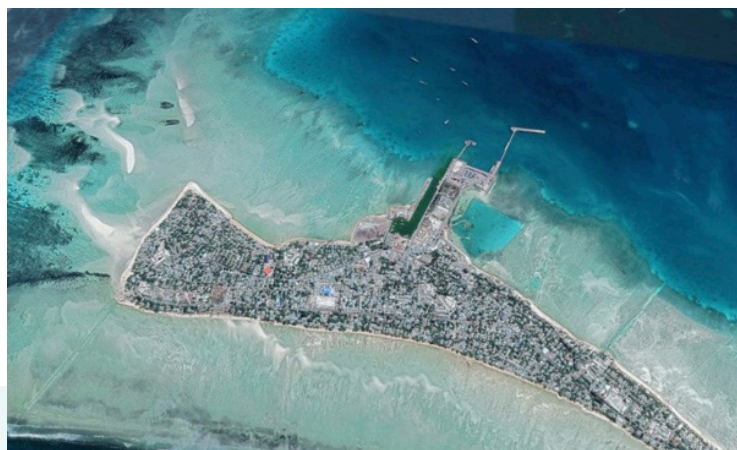
Almost all land in the Gilbert Islands is under private ownership in small hereditary holdings, while in the Line and Phoenix Islands all land is owned by the Government. Lack of land use planning – especially in the densely populated areas of South Tarawa and Kiritimati, is causing over-crowding and land degradation. Urban expansion is also reducing land available for agriculture and terrestrial habitats and biodiversity. There is an urgent need to improve sustainable land use planning in Kiribati, supported by spatial planning.

Socioeconomic development requires construction and maintenance of buildings, roads, ports, airports and other infrastructure, which requires sand and gravel to make concrete. Except on Kiritimati Island, these materials are not available from the very limited land resources of Kiribati, so over recent decades they have been obtained by mining in coastal areas, reef flats and atoll lagoons, causing both direct and indirect impacts (Babinard et al. 2014; Biribo 2012). Sand and gravel are also mined by some small local communities and sold to support their livelihoods.

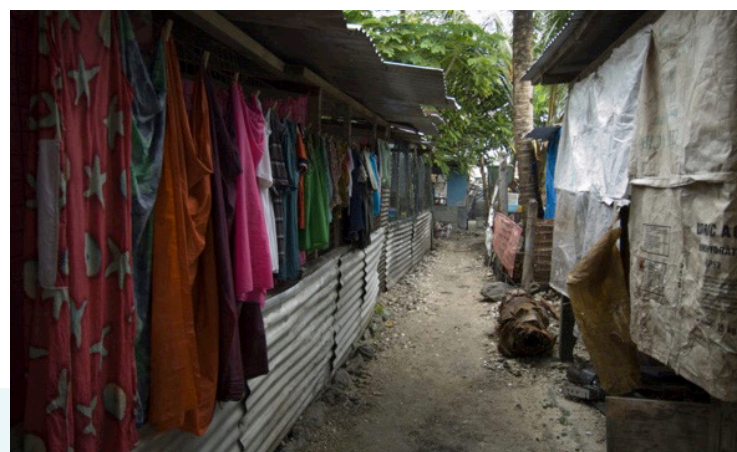
While the government has started to implement controls on coastal and lagoon mining in some areas, there is a need to improve compliance and enforcement, and to extend controls to other parts of the country. There is a need to undertake a national-level Strategic Environmental Assessment (SEA) of coastal and lagoon mining in Kiribati, and develop a national management plan, supported by spatial planning.

The deep ocean of Kiribati also has another potentially significant non-living resource – deep seabed minerals. These are discussed in section 3.9 below as an emerging and future issue.

Urbanisation at Betio, South Tarawa (similar at Kiritimati)



Overcrowding in densely populated areas



Land degradation from compound impacts



Coastal and lagoonal mining for sand and gravel



FIGURE 13: Examples of non-living resources issues in Kiribati
(Image sources from top: Google Earth, devpolicy, Maharaj, GoK)

3.7 Waste management and pollution prevention

Waste management and pollution prevention (WMPP) have long been the most significant local-level environmental challenge in Kiribati (Carden, 2003). Despite major programmes and projects over the last two decades WMPP continues to be a significant and ever-compounding problem, as the population continues to shift to more consumption-based lifestyles, dependent on the importation of manufactured goods, which generate more and more harmful pollution and wastes. Even populations on the outer islands that lead mainly traditional lifestyles are increasingly using plastic products and packaging.

Severe land constraints and the reliance on sub-surface water lenses as the main freshwater resource are major compounding factors that affect WMPP in Kiribati. There is insufficient land to allow conventional deep landfill for solid waste disposal. Pollutants can easily seep into the highly porous coral substrate, contaminating soils, the underlying water lens and coastal waters (Carden, 2003).

Lead responsibility for WMPP rests with MELAD/ECD. National WMPP strategies and actions are outlined in the periodic national plans, with the latest version being the Kiribati Waste Management and Resource Recovery Strategy (KWMRRS) 2020–2030. There are also issue-specific plans such as the National Implementation Plan for Persistent Organic Pollutants (NIPPOPS). Other government agencies have specific WMPP responsibilities, such as the Marine Division, which handles vessel-sourced marine pollution and wastes, the South Tarawa Council and the Green Bag collection system, which handles solid waste collection and disposal for the South Tarawa area. This KIEP does not seek to duplicate these existing arrangements but rather to support their implementation and to address any key gaps.

Good progress has been on recycling, especially on Tarawa. Key gaps include a need to look more closely at waste prevention and reduction at source, including prohibiting the importation of certain waste-generating products and materials, stronger moves to a circular economy, support for a return to traditional, natural products and materials and traditional agriculture, and greater support for WMPP on the outer islands. The regulation and control of vessel-sourced marine pollution also need to be strengthened, as more and more foreign vessels use Kiribati waters. Quarantine waste is also an emerging issue in Kiribati, especially from the burning of plastic waste, including for home cooking fires, which can have serious health implications. Addressing these gaps and needs are of high priority in the SEP in section 9.

Dumping within a lagoon reclamation area – South Tarawa



Sub-surface water supplies are vulnerable to pollution



Control of vessel-sourced pollution needs strengthening



Chemical and liquid pollutants such as waste oil and POPs



FIGURE 14: Examples of waste management and pollution prevention issues in Kiribati
(Image sources from top: ABC, Reuters, SPREP, Sven)

3.9 Emerging and future issues

There are a number of emerging and future issues which have the potential to create significant environmental challenges for Kiribati in coming years, and because this KIEP adopts a 16-year timeframe from 2020 to 2036, it is important that these issues are identified and that the KIEP lays down plans to address these issues as they arise. Emerging and future issues include the following and each is discussed in the sub-sections below and also addressed in the SEP in section 9.

- a. Potential mariculture expansion.
- b. Large-scale dredging and land reclamation.
- c. Deep seabed mining.
- d. Increasing risks of vessel-sourced pollution.

3.9.1 Potential mariculture expansion

Mariculture in Kiribati is currently fairly restricted. Small-scale farming of *Eucheuma* seaweeds has been practised since the early 1980s, and small quantities of dried seaweed are exported, mainly from Tabuaeran and Kiritimati Atolls, where it makes a useful addition to household incomes. FAO estimates that 3,652 tonnes of *Eucheuma* seaweeds were produced in Kiribati in 2016 (www.fao.org/fishery/facp/KIR/en). Milkfish (*Chanos chanos*) are grown in saline ponds on several of the atolls, including Tarawa and Kiritimati, mainly for local consumption. Production has decreased in recent years as ponds become increasingly saline due to climate change impacts. There is also a single clam farm (*Tridacna spp.*) on North Tarawa, producing clams for export to the aquarium market in North America.

Despite the current small scale of mariculture in Kiribati, there is considerable potential for significant expansion of the sector as part of an overall sustainable blue economy drive, both through expanding the farming of existing species and development of new species. These include sea cucumbers (Holothurians) and various finfish species including groupers (Serranidae), both of which have insatiable and ever-expanding markets in Asia. Chinese investors have recently commenced development of a US\$2 billion, 'whole-of-atoll' grouper farm within the giant lagoon of Hao Atoll in French Polynesia, with plans to fly the live-fish produced by the farm direct to China in wide-bodied jets. There are several atolls in Kiribati that have lagoons with the potential to support similar large-scale farming of groupers and other species, which investors are assessing.

While such large-scale mariculture can be highly lucrative, it is also high-risk and can cause major environmental impacts, including potentially the ecological collapse of atoll lagoons and associated coral reefs. While it is recommended that further development of mariculture should be included in Kiribati's sustainable blue economy strategy, it is also recommended that a national Strategic Environmental Assessment (SEA) of potential mariculture development should be conducted, and that stringent EIA and environmental regulatory controls and monitoring should be applied to individual mariculture development proposals. These issues are included as high priorities in the SEP in section 9 of this KIEP.

3.9.2 Large-scale dredging and land reclamation

As identified in sections 3.3, 3.4 and 3.5.2 of this report, the KV20 and KDP 2021–2024 propose large-scale dredging of atoll lagoons and reclamation of new land for the construction of transshipment hubs (ports) at both Tarawa and Kiritimati Atolls, and for urban, commercial and industrial development. If not assessed and managed properly, such major construction works could cause very significant impacts on the atoll lagoon and coral reef ecosystems of Kiribati. It could also disrupt the sediment transport patterns which prevents sand from accumulating on the islands (Duvat and Magnan 2019).

It is recommended that a national Strategic Environmental Assessment (SEA) of these major coastal and marine construction projects should be conducted, and that stringent EIA and environmental regulatory controls and monitoring should be applied to individual dredging and land reclamation proposals. These issues are included as high priorities in the SEP in section 9 of this KIEP.

3.9.3 Deep seabed mining

As global demand for mineral resources has continued to increase in recent decades and as land-based mineral resources have continued to decline, governments and mining companies have begun to look increasingly at the potential to exploit deep seabed mineral resources. The Pacific Ocean generally contains a number of areas with high deep seabed mineral potential, with two main resource types being relevant to Kiribati:

- a. Polymetallic nodules (PMN): Nodules are formed of concentric layers of iron and manganese hydroxides and other metals like nickel, copper and cobalt, around a core of a small shell, basalt debris, etc. Nodules vary in size from microscopic particles to large pellets more than 20 cm across but are mostly between 5 and 10 cm in diameter, about the size of potatoes. They are found throughout the world's oceans on the deep, flat abyssal plain, in depths from 4,000 to 6,000 meters.
- b. Cobalt rich crusts (CRC): Cobalt-rich ferromanganese crusts form on the summits and flanks of seamounts, ridges and plateaux, especially large flat-topped guyot features. Seamounts are widely abundant in the Pacific, with over 100,000 estimate occurrences; however, not all seamounts have CRC in quantities that are of commercial interest.
3. The potential development of Deep Seabed Mining (DSM) has been identified as a possible economic 'game-changer' for Pacific island countries, including Kiribati, that could potentially increase GDP by an order of magnitude or more, end dependence on development aid and provide sustainable economic futures (D'Arcy 2013).

However, DSM is a novel, frontier industry, which is still in the exploration, research and development phase, with no actual commercial DSM operations having commenced yet. There are still many uncertainties about the environmental, socioeconomic and technical risks and impacts of DSM.

Kiribati has potentially viable PMN resources in the east and south of the Line Island group, and over 354 submarine mountains or seamounts, some of which may have potentially viable CRC resources, although additional exploration and resource definition surveys are required. Biological surveys of seamounts during the PIPA proposal development found extremely rich deep-water coral communities on the sides of seamounts in the Phoenix group, and any mining of CRC in those areas could have very significant impacts on the unique deep-water biodiversity.

Kiribati has limited governance and institutional capacity to assess, regulate and manage proposals for DSM that are put forward by outside interests. There is a need for significant institutional strengthening and capacity building to assist Kiribati to develop national capacity to properly assess, regulate, manage and monitor this emerging industry and to obtain optimal, sustainable benefits with minimal negative impacts from DSM.

A cross-Ministerial Kiribati Seabed Minerals Technical Advisory Committee (KISMTAC) has been established to progress DSM matters and a DSM Unit has been established within the Ministry of Fisheries and Marine Resources Development (MFMRD). Various policies on DSM have been drafted, and the Kiribati Seabed Minerals Act 2016 has been passed and an Explanatory Guide prepared, with assistance from the Secretariat of the Pacific Community (SPC) and the Commonwealth Secretariat. However, there is a need for significant strengthening of the Environment Act to better cater for effective environmental regulation of DSM, and for training and capacity building of MELAD/ECD staff in this area.

It is recommended that a national Strategic Environmental Assessment (SEA) of DSM should be conducted, and stringent EIA and environmental regulatory controls and monitoring should be applied to individual DSM proposals. These issues are included as high priorities in the SEP in section 9 of this KIEP.

3.9.4 Increasing risks of vessel sourced pollution

As an island nation Kiribati has always been dependant on shipping to supply all of the imported products and materials of the modern economy, to export its main economic outputs of copra and fish, and to provide transport connections between the islands. Kiribati also sits across some of the main international trans-Pacific shipping lanes between North America and Australia and New Zealand, and hosts a number of fishing vessel fleets from several distant water fishing nations in its waters. As such Kiribati has always been at risk from vessel-sourced pollution and wastes.

However, these risks are increasing as international transit shipping through Kiribati waters increases, and will continue to increase in future as some of the national development projects outlined in KV20 come to fruition. These include proposed large scale dredging to create new land, which will see a range of new vessels operating in Kiribati waters including large-scale dredgers and various supporting work vessels, and the proposed creation of two transshipment hubs – one at Tarawa and one at Kiritimati – which may increase vessel traffic significantly.

Kiribati is a member of the International Maritime Organization (IMO) and has ratified some of the main IMO Conventions that regulate vessel-sourced pollution and waste, including the MARPOL Convention, as outlined in section 4.3 below. The Marine Division within MICTTD is the lead agency for all shipping-related issues in Kiribati, and has supporting legislation and a National Marine Pollution Contingency Plan. From time-to-time the Marine Division receives technical support, training and capacity building on vessel-sourced pollution and waste management issues through the SPREP Pacific Ocean Pollution Prevention Programme (PACPOL).

However, the capacity of the Marine Division is still quite limited, especially in relation to Port State Control (PSC) of foreign vessels in relation to the IMO marine environment protection Conventions, and the ability to respond to potential major shipping incidents. There are also some key IMO instruments that Kiribati has not yet ratified and implemented, as outlined in section 4.1. Additional institutional strengthening, capacity-building and technical support is recommended in order to keep up with the rapidly-increasing risks outlined above. Accordingly, the SEP in section 9 includes some major activities under the WMPP Thematic Area to provide additional support to the Marine Division.

3.10 Overall State of the Environment in Kiribati

In developing a long-term, integrated, national environmental policy and strategy like this KIEP, it is important to understand the overall state of the environment, through state of the environment (SOE) reporting, to:

- a. identify what resources and values need to be protected,
- b. assess the status and trends of various environmental parameters and indicators, in terms of quality and health; and
- c. determine whether environmental conditions and values are worsening, remaining static or improving, in relation to defined targets.

Undertaking regular SOE assessment and reporting is particularly useful for assessing the effectiveness of policies, strategies and programmes like this KIEP. Ideally there should be feedback loops whereby the policy, strategy or programme can be adjusted and refocused in response to the environmental status and trends that are identified by the SOE report.

The discipline and methodology of SOE assessment and reporting is now well developed, with the so-called ‘pressure-state-response’ framework being one of the most widely used methods. A significant challenge to undertaking reliable, rigorous and meaningful SOE assessments is the availability of reliable scientific data on the various environmental parameters being assessed, and the setting of targets and indicators that are supported by the data, and that are SMART (specific, measurable, achievable, relevant and time-bound).

Unfortunately, in the case of Kiribati, only two SOE reports have been undertaken, both with the assistance of SPREP. The first was undertaken in 1994 and the most recent was for the period 2000–2004, over 18 years ago. It is therefore difficult to provide an up-to-date overview of the current state of the environment in Kiribati to support this KIEP. However, by considering the now-dated SOE reports, and combining the issue-based summaries presented in sections 3.1 to 3.9 above, with review of various environmental sub-sector reports, the following summary assessment can be provided for 2020:

- a. Climate change is the most significant externally imposed environmental issue, potentially threatening the very existence of Kiribati as a viable, sustainable nation in the long-term. The main climate change impacts are sea-level rise, increased coastal erosion and inundation, salinisation of freshwater lenses, coastal lagoons, lakes and wetlands, as well as essential agricultural land; more frequent and prolonged droughts, more frequent and prolonged cyclones affecting more islands, and mass mortality of coral reef ecosystems from coral bleaching and ocean acidification. In addition to continuing to lobby industrial economies to reduce emissions, Kiribati needs to give highest priority to adaptation measures that are based on soft engineering and building with nature.
- b. Waste management and pollution prevention are the most significant internal environmental issue, driven by a continued shift to more consumption-based lifestyles, dependent on the importation of manufactured goods, which generate more and more harmful pollution and wastes. Even populations on the outer islands that lead mainly traditional subsistence lifestyles, using natural local products and materials that do not create persistent wastes, are increasingly using plastic products and packaging.

- c. The severe land constraints of Kiribati and the reliance on sub-surface water lenses as the main freshwater resource are major compounding factors that affect waste management and pollution prevention in Kiribati. There is insufficient land to allow conventional deep landfill for solid waste disposal, and pollutants can easily seep into the highly porous coral substrate, contaminating soils, the underlying water lens and coastal waters.
- d. Increasing urbanisation and population densities, with poor urban planning and land-use management controls, and without adequate water and sanitation infrastructure, are significant problems in South Tarawa and Kiritimati, and are beginning to manifest on other more highly populated islands, such as Abaiang just north of Tarawa.
- e. The main threats to terrestrial island biodiversity in Kiribati include habitat loss due to human population expansion, overexploitation through direct use of biodiversity resources, the impacts of invasive species, and changes in environmental conditions due to climate change. While the extremely remote, uninhabited islands of the Phoenix and Line island groups benefit from their remoteness in terms of reduced levels of human impact, they also suffer from a lack of protection, management, compliance and enforcement action – due to their remoteness.
- f. The main threats to the marine resources and ecosystems of Kiribati are overexploitation through direct use of biodiversity resources (fishing and collecting for food), especially on the more densely populated islands, coastal mining to extract sand and aggregate for construction, building of causeways between islets which affects hydrodynamics and sediment processes, pollution from land-based sources and the impacts of climate change as discussed above.
- g. There are a number of emerging and future issues which have the potential to create significant environmental challenges for Kiribati in coming years, including:
 - h. potential mariculture expansion,
 - i. ilarge-scale dredging and land reclamation,
 - j. iideep seabed mining; and
 - k. iincreasing risks of vessel-sourced pollution and wastes.

Overall, the state of the environment ranges from highly degraded and under severe pressure on the more densely populated islands, to almost pristine and untouched on the more remote islands, especially the uninhabited islands of the Phoenix and Line groups.

In order to ensure that the implementation of this KIEP is supported by regular SOE reports, the SEP in section 9 of this KIEP includes a specific and well-developed component on SOE assessment and reporting, which is linked to and supported by a component on environmental monitoring, data and information management, and which includes a defined resourcing plan and implementation timeframe requiring regular national SOE reports every three years.

4 LEGAL AND POLICY SETTING

4.1 Relevant provisions of the Constitution of Kiribati

The Constitution of the sovereign democratic Republic of Kiribati was adopted at independence in 1979. It sets out the overarching arrangements for the independent governance of the nation by the people of Kiribati and establishes the principles of the Bill of Rights and the Fundamental Rights and Freedoms of the individual.

The Constitution does not explicitly reference protection of the environment or ecologically sustainable development (a concept that was not widely promulgated in 1979), however the opening preamble does indirectly embrace these principles by stating the following:

“In implementing this Constitution, we declare that –
the will of the people shall ultimately be paramount in the conduct of the government of Kiribati;
the principles of equality and justice shall be upheld;
the natural resources of Kiribati are vested in the people and their Government;
we shall continue to cherish and uphold the customs and traditions of Kiribati.”

The explicit reference to ‘natural resources’ inherently includes all environmental resources, and the explicit reference to ‘customs and traditions’ inherently embraces ecological sustainability, as the traditional, customary livelihoods of the Kiribati people are based on ecological sustainability.

The Constitution of Kiribati therefore contains two key provisions that should be reflected and followed in this KIEP – which the nation’s natural resources, and therefore its environmental resources, are vested in the people and their Government, and that ecological sustainability should be a core element of national development through continuing to cherish and uphold the customs and traditions of Kiribati.

4.2 Links to UN SDGs 2015–2030

One of the main outcomes of the United Nations Conference on Sustainable Development (the Rio+20 Conference) held in 2012, was an agreement by UN Member States, including Kiribati, to develop a set of global Sustainable Development Goals (SDGs), which build upon the previous Millennium Development Goals (MDGs) and converge with the post-2015 sustainable development agenda.

A total of 17 interconnected SDGs were adopted by UN Member States, including Kiribati, in 2015, providing the blueprint to achieve a better and more sustainable future for all with a target date of 2030. The SDGs address the global challenges that are faced by humanity, including those related to poverty and hunger, health and well-being, education, inequality, safe water and sanitation, clean energy, sustainable communities and responsible production and consumption, climate change, environmental degradation on land and in the seas, peace and justice and cooperation through partnerships. They set the 2015–2030 sustainable development agenda at the global level and provide a framework to guide regional and national-level sustainable development plans and programmes.

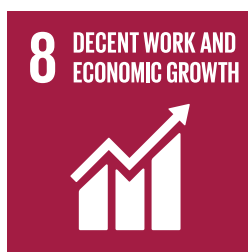
Because the Government of Kiribati is an active member of the UN community and a strong supporter of achieving the SDGs both in Kiribati and the Pacific islands region overall, through all relevant national and regional development plans and programmes, it is important for this KIEP to clearly link to the SDGs. The relevance of each SDG is presented in Table 2 and shows that all 17 of the SDGs are directly relevant to the KIEP 2021–2036.

TABLE 2: Relevance of the SDGs to this KIEP 2021–2036

SDG	DIRECT RELEVANCE TO KIEP 2021–2036
	▪ Sustainable livelihoods that address and prevent poverty are dependent on a healthy, sustainable environment. ▪ The main economic sectors of Kiribati are based on environmental resources, including fisheries and coastal and marine tourism. ▪ The economic value of the ecosystem services provided by Kiribati's natural environment is >\$400 million per year, which is more than double the national GDP. ▪ Ensuring that the ecosystem services that are provided by Kiribati's environment are well protected and sustainably managed is vital to the wealth of the nation.
	▪ A very high proportion of Kiribati's food security is provided directly from environmental resources through traditional subsistence agriculture, fishing and collection of seafood. ▪ Essential food staples such as giant swamp taro (bwabwai) are highly vulnerable to environmental perturbations, and seafood resources from atoll lagoons and coral reefs are highly susceptible to over-exploitation. ▪ As per SDG 1, economic activity that generates cash income to allow purchase of foodstuffs is also based on environmental resources, including fisheries, coastal and marine tourism. ▪ Ensuring that the ecosystem services that are provided by Kiribati's environment are well protected and sustainably managed is vital to the food security of the nation.
	▪ Healthy people need a healthy environment. ▪ Good health is strongly linked to SDGs 1 and 2, and also to SDG 6 on clean water and sanitation, which remains a significant challenge in Kiribati.
	▪ Achieving an ecologically sustainable future requires a well-educated population. ▪ A population that is educated about the environment is more committed to and capable of protecting the environment. ▪ Education curricula and programmes need to include the full range of environmental education and awareness issues, including climate change, pollution, waste management, biodiversity conservation, amongst others.
	▪ The population of Kiribati has an almost 50/50 gender balance overall (94.4 males per female for all age groups (ransshi.com)). ▪ An ecologically sustainable future can only be achieved with the full and equal participation of all gender groups. ▪ Both men and women play significant roles, including traditionally defined roles, in Kiribati society and in traditional sustainable livelihoods.
	▪ Water security and adequate sanitation remain significant challenges in Kiribati and are not only essential to human health and wellbeing (SDG 3) but fundamentally underpin all aspects of environmental health and sustainability. ▪ Water security in Kiribati is directly threatened by a range of environmental impacts, including overexploitation, climate change, pollution and contamination.



- Despite many renewable energy projects over the last 10-plus years, Kiribati is still heavily reliant on diesel generators, which create local air pollution, contribute to greenhouse gas emissions, generate waste oil management problems, and rely on expensive imports of diesel.
- Continuing the push to expand renewable energy sources, especially solar, wind and ocean energy is essential if Kiribati is to become truly ecologically (and economically) sustainable.



- As per SDG 1.
- The main jobs and economic sectors of Kiribati are based on environmental resources, including fisheries and coastal and marine tourism.
- The economic value of the ecosystem services provided by Kiribati's natural environment is >\$400 million per year, which is more than double the national GDP.
- Ensuring that the ecosystem services that are provided by Kiribati's environment are well protected and sustainably managed is vital to jobs and economic growth of the nation.



- Development of industry and construction of infrastructure can cause major environmental impacts if not assessed, managed and monitored properly, and require strong EIA and environmental regulatory controls.
- Environmental infrastructure is also needed in order to address environmental issues, including waste management facilities, sewerage treatment plants and water treatment facilities.
- Innovation is also needed to develop novel and effective solutions to the environmental challenges that are faced by Kiribati.



- An ecologically sustainable future can only be achieved with the full and equal participation of, and equal flow of benefits to, all sectors of society.



- Increasing, unplanned and poorly managed urbanisation and over-crowding without adequate services and facilities are a major environmental problem on South Tarawa and Kiritimati Atoll. It is also beginning to spread to other islands with higher populations such as Abaiang just north of Tarawa.
- Communities on North Tarawa and other outer islands still practice mainly sustainable, traditional lifestyles although environmental pressures are increasing, and programmes are required to ensure the ongoing sustainability of all communities in Kiribati.



- An ecologically sustainable future can only be achieved with a complete shift to a green, circular economy.
- This is especially the case for SIDS like Kiribati which are increasingly dependent on the importation of consumable goods and materials, which create intractable waste management and pollution problems.
- However, SIDS like Kiribati are also very strongly placed to achieve a green, circular economy, as the traditional, subsistence livelihoods that have been practised for millennia are already well-proven examples of green, circular economy, which can be maintained and developed further.



- Climate change is the most significant externally imposed environmental issue, potentially threatening the very existence of Kiribati as a viable, sustainable nation in the long-term.
- The main climate change impacts are sea-level rise, increased coastal erosion and inundation, transshipment of freshwater lenses, coastal lagoons, lakes and wetlands, as well as essential agricultural land; more frequent and prolonged droughts, more frequent and prolonged cyclones affecting more islands, and mass mortality of coral reef ecosystems from coral bleaching and ocean acidification.
- In addition to continuing to work to lobby industrial economies to reduce emissions, Kiribati needs to give highest priority to adaptation measures that are based on soft engineering and building with nature.



- The nation of Kiribati comprises over 99.9% ocean with a sea to land ratio of 5,000 to 1.
- The nation's most significant environmental (and economic) resources and values are marine, including mangroves, seagrasses, atoll lagoons, coral reefs, foraminifera, seamount and deep-seabed communities and coastal and pelagic fisheries, including some of the last potentially sustainable tuna resources in the world.
- The ocean also provides the greatest potential for economic development through a sustainable blue economy strategy, including potentially major expansion of mariculture and development of new ocean industries like ocean energy and deep seabed mining.
- An ecologically sustainable future cannot be achieved for Kiribati without ensuring that the marine environment is strongly protected and that all marine industries are subject to strong EIA and environmental regulatory controls.



- Land area is extremely limited throughout Kiribati with extremely poor soils, and in many cases subject to periodic severe water constraints, which limits and places stresses on terrestrial ecosystems.
- The main threats to terrestrial island biodiversity in Kiribati include habitat loss due to human population expansion, overexploitation through direct use of biodiversity resources, the impacts of invasive species, and changes in environmental conditions due to climate change.
- The future sustainability of Kiribati cannot be secured without achieving SDG 15.



- Peace and justice include environmental peace and justice.
- When peace and justice are lacking in a country, there is an increased tendency towards uncontrolled and unsustainable exploitation of environmental resources.
- Even in the current situation in Kiribati where there is a relatively functional peace and justice system, environmental crime is not unknown, including by foreign parties that exploit Kiribati's marine resources.
- This KIEP 2021–2036 therefore places a high priority on further strengthening all aspects of environmental governance in Kiribati.



- The future sustainability of Kiribati cannot be secured without effective partnerships to achieve all SDGs in a cooperative and collaborative manner.
- Effective implementation of this KIEP 2021–2036 requires strong partnerships and cooperation between all government ministries and divisions, with civil society, with the private sector and industry, and with bilateral and multilateral development partners.

4.3 Global and regional multilateral environmental agreements

The Government of Kiribati is an active member of the UN community and a strong supporter of the international rules-based order. Kiribati recognises that tackling global, regional and national environmental challenges requires international cooperation, in accordance with international targets and standards. As such Kiribati has ratified most of the main global multilateral agreements (MEAs), as listed in Tables 3. However, despite being a member of SPREP, Kiribati has not ratified most of the regional MEAs as listed in Table 4. Tables 3 and 4 identify the relevance of each MEA to this KIEP 2021–2036.

As shown in Table 3, it is notable that there are seven global MEAs that Kiribati has not yet ratified:

- ROTTERDAM – Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (although it is understood that Kiribati is currently planning to ratify this convention given that the country imports various chemicals).
- CITES – Convention on International Trade in Endangered Species.
- OPRC – International Convention on Oil Pollution Preparedness, Response and Cooperation.
- OPRC-HNS – Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances.
- FUND – International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (2003 Protocol).
- HNS – International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea.
- LONDON Protocol – Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter.

These leave significant gaps in Kiribati's national environmental protection regime and in some cases place Kiribati at a disadvantage in terms of accessing international assistance. With respect to the FUND (2003) and HNS Conventions, not being a party precludes Kiribati from accessing the maximum available financial compensation for ship-sourced pollution incidents.

As shown in Table 4, it is notable that there are six (of seven) regional MEAs that Kiribati has not yet ratified:

- NOUMEA (SPREP) Convention for the Protection of Natural Resources and Environment of the South Pacific Region.
- NOUMEA (SPREP) Dumping Protocol for the Prevention of Pollution of the South Pacific Region by Dumping.
- NOUMEA (SPREP) OPRC Protocol on Oil Pollution Preparedness, Response and Cooperation in the Pacific Region (to replace the Pollution Emergencies Protocol).
- NOUMEA (SPREP) OPRC-HNS Protocol on Hazardous and Noxious Substances Pollution, Preparedness, Response and Cooperation in the Pacific Region.
- APIA Convention on Conservation of Nature in the South Pacific.

The reasons for these non-ratifications are not clear, as Kiribati is a member of SPREP, which is the secretariat for these MEAs, and Kiribati benefits from technical assistance and project funding from SPREP.

It is recommended that the Government of Kiribati takes urgent action to ratify those global and regional MEAs that it has not yet ratified, and this is included as a high priority in the SEP in section 9 of this KIEP.

TABLE 3: Main global MEAs and relevance to this KIEP 2021–2036

MEA	RATIFIED BY GOK	RELEVANCE TO KIEP 2021–2036
UNCLOS – <i>United Nations Convention on the Law of the Sea</i>	Yes	▪ Gives Kiribati international legal basis for maritime jurisdiction zones out to EEZ, including sovereign rights over marine resources and powers and responsibilities in relation to marine environment protection.
Montreal – <i>Protocol on Substances that Deplete the Ozone Layer</i>	Yes	▪ Bans substances that deplete the ozone layer (certain refrigerant and fire-fighting chemicals etc.).
UNFCCC – <i>United Nations Framework Convention on Climate Change</i>	Yes	▪ Extremely important to Kiribati as climate change is major threat and UNFCCC is legal mechanism to reduce emissions by the major emitters. ▪ Also provides Kiribati with access to funding and assistance.
CBD – <i>Convention on Biological Diversity</i>	Yes	▪ Provides a global framework and targets for conservation. ▪ Important to Kiribati as biodiversity is highly vulnerable.
Ramsar- <i>Convention on Wetlands of International Importance</i>	Yes	▪ Provides international legal protection for wetlands of international importance. ▪ Provides Kiribati with access to funding and assistance. ▪ With many atoll lagoons and associated ecosystems, plus brackish to super saline lagoons present in the interior of islands in all three groups, and globally unique wetlands at Teraina Island, Kiribati has several sites that meet the Ramsar definition. ▪ To date only one Ramsar site declared – at Nooto, North Tarawa. Additional sites should be looked at, including at Teraina Island. ▪ A national wetland inventory was developed for Kiribati in 2014 which describes some of the national wetlands that meet criteria for possible Ramsar site designation.
BASEL – <i>Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal</i>	Yes	▪ Protects Kiribati from potential illegal importation of hazardous wastes and regulates export of such wastes from Kiribati.
STOCKHOLM – <i>Convention on Persistent Organic Pollutants</i>	Yes	▪ There are still problems with POPs management in Kiribati. ▪ Provides Kiribati with access to funding and assistance.
ROTTERDAM – <i>Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade</i>	No	▪ It is understood that Kiribati is currently planning to ratify this convention given that the country imports various chemicals.
CITES – <i>Convention on International Trade in Endangered Species</i>	No	▪ Highly relevant as Kiribati has a number of endangered species that may be subject to international trade, including certain birds, marine turtles, giant clams and certain corals. ▪ Kiribati should sign on to CITES as a matter of priority.

MEA	RATIFIED BY GOK	RELEVANCE TO KIEP 2021–2036
UNCCD – <i>United Nations Convention to Combat Desertification</i>	Yes	Given the very small areas of land in Kiribati and relatively high population densities, especially in South Tarawa and the main settlement of London on Kiritimati, land degradation from unsustainable land-use practices is a significant issue.
International Maritime Organization (IMO)	Member State	
MARPOL – <i>International Convention on the Prevention of Pollution from Ships</i>	Yes	- Regulates discharge of various pollutants from ships in accordance with six Annexes relating to each pollutant type. - Extremely relevant to Kiribati which is highly dependent on shipping and fishing vessels and is hosting increasing numbers of foreign vessels in its waters. - There is a need to substantially strengthen the regulation and control of vessel sourced pollution in Kiribati.
MARPOL Annex I Oil	Yes	As above.
MARPOL Annex II Noxious Liquid Substances	Yes	As above.
MARPOL Annex III Harmful Packaged Substances	Yes	As above.
MARPOL Annex IV Sewerage	Yes	As above.
MARPOL Annex V Garbage	Yes	As above.
MARPOL Annex VI Air Emissions	Yes	As above.
OPRC – <i>International Convention on Oil Pollution Preparedness, Response & Cooperation</i>	No	- Very important to Kiribati as it provides legal framework for accessing international assistance and support in the event of oil pollution emergencies. - Kiribati should sign on to OPRC as a matter of priority.
OPRC-HNS – <i>Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances</i>	No	- Very important to Kiribati as provides legal framework for accessing international assistance and support in the event of HNS pollution emergencies. - Kiribati should sign on to OPRC-HNS as a matter of priority.
BUNKERS – <i>International Convention on Civil Liability for Bunker Oil Pollution Damage</i>	Yes	Provides legal framework for claiming financial compensation in the event of oil pollution from certain ships other than tankers.
CLC – <i>International Convention on Civil Liability for Oil Pollution Damage (1992 Protocol)</i>	Yes	Provides legal framework for claiming financial compensation in the event of oil pollution from tankers.
FUND – <i>International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage</i>	Yes (1992) No (2003)	- Provides legal framework for claiming financial compensation in the event of oil pollution from tankers when the value of environmental damage exceeds the CLC provisions. - The 2003 Protocol increases the upper limit of compensation available so Kiribati should sign on as a matter of priority.

MEA	RATIFIED BY GOK	RELEVANCE TO KIEP 2021–2036
HNS – <i>International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea</i>	No	▪ Provides legal framework for claiming financial compensation in the event of HNS pollution from certain ships. ▪ Kiribati should sign on as a matter of priority, especially as shipping levels are likely to increase in coming years.
AFS Convention – <i>International Convention on the Control of Harmful Anti-fouling Systems in Ships</i>	Yes	▪ Prohibits the use of harmful organotin compounds in vessel anti-fouling paints. ▪ Will become increasingly relevant to Kiribati as shipping levels are likely to increase in coming years. ▪ Kiribati currently has limited capacity to implement this Convention and capacity building is needed.
BWM Convention – <i>International Convention for the Control and Management of Ships' Ballast Water and Sediments</i>	Yes	▪ Regulates the discharge of ballast water and sediments from ships, to control invasive aquatic species. ▪ Will become increasingly relevant to Kiribati as shipping levels are likely to increase in coming years. ▪ Kiribati currently has limited capacity to implement this Convention and capacity building is needed.
London Protocol – <i>Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter</i>	No	▪ Regulates the dumping of wastes at sea. ▪ Will become increasingly relevant to Kiribati as major dredging and related development projects are proposed. ▪ Kiribati should sign on as a matter of priority. Technical assistance and capacity building are available from IMO.

TABLE 4: Main Pacific Regional MEAs and relevance to this KIEP 2021–2036

MEA	RATIFIED BY GOK	RELEVANCE TO KIEP 2021–2036
NOUMEA (SPREP) Convention – <i>Convention for the Protection of Natural Resources and Environment of the South Pacific Region:</i>	No	▪ This Convention is the major multilateral umbrella agreement in the Pacific Region for the protection of natural resources and the environment. ▪ Given that Kiribati is a member of SPREP and benefits from technical assistance and project funding from SPREP, it is not clear why Kiribati has not joined this Convention. ▪ It is recommended that this be looked at by GoK.
NOUMEA (SPREP) Pollution Emergencies Protocol – <i>Protocol Concerning Co-operation in Combating Pollution Emergencies in the South Pacific Region:</i>	No (to be replaced by the SPREP OPRC Protocol so should ratify that instead)	▪ A regional (but inconsistent) version of the global OPRC Convention (which Kiribati has also not signed). ▪ To be replaced by the SPREP OPRC Protocol which is better aligned with the global OPRC Convention. ▪ It is recommended that GoK should ratify both the global OPRC Convention and SPREP OPRC Protocol.
NOUMEA (SPREP) Dumping Protocol – <i>Protocol for the Prevention of Pollution of the South Pacific Region by Dumping:</i>	No	▪ A regional version of the global London Protocol (which Kiribati has also not signed). ▪ Given that Kiribati is a member of SPREP and benefits from technical assistance and project funding from SPREP, it is not clear why Kiribati has not joined this Convention. ▪ It is recommended that this be looked at by GoK.
NOUMEA (SPREP) OPRC Protocol: <i>Protocol on Oil Pollution Preparedness, Response and Cooperation in the Pacific Region:</i>	No	▪ Not yet in force. ▪ Update that will replace the Pollution Emergencies Protocol and make it more consistent with the global OPRC. ▪ Kiribati should sign as a matter of priority.
NOUMEA (SPREP) OPRC-HNS Protocol – <i>Protocol on Hazardous and Noxious Substances Pollution, Preparedness, Response and Cooperation in the Pacific Region:</i>	No	▪ Not yet in force. ▪ Regional version of the global OPRC-HNS. ▪ Kiribati should sign as a matter of priority.
WAIGANI Convention – <i>Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement of Hazardous Wastes within the South Pacific Region:</i>	Yes	▪ Regional version of Basel Convention.
APIA Convention – <i>Convention on Conservation of Nature in the South Pacific:</i>	No	▪ Regional version of CBD. ▪ Given that Kiribati is a member of SPREP and benefits from technical assistance and project funding from SPREP, it is not clear why Kiribati has not joined this Convention. ▪ It is recommended that this be looked at by GoK.

4.4 National development and sector policies and plans

As outlined in the introduction, in order to address the many environmental challenges faced by the nation, the Government of Kiribati has been one of the first in the Pacific region to adopt an holistic, integrated approach to environmental planning, linking environmental policy to broader national development planning, and mainstreaming environmental sustainability into all economic sectors, through the first KIEP 2013.

This KIEP 2021–2036 is also designed to integrate and mainstream environmental sustainability into all economic sectors, including linking to the four-year Kiribati Development Plans (KDPs), starting with the KDP 2021–2024, and linking with other relevant sector policies and plans. Table 5 assesses the KDP 2021–2024 and other relevant sector policies and plans that fall within the timeframe of the KIEP 2021–2036, identifying the main relevancies and linkages.

What is notable from Table 5 is that despite the stated intention by the Government of Kiribati to link environmental policy to broader national development planning, and to mainstream environmental sustainability into all economic sectors, most of the key national and sectoral development policies, strategies and plans, including the over-arching Kiribati 20-Year Vision (KV20) and the KDP 2021–2024, do not actually reference the KIEP, and do not contain environmental sustainability strategies that are linked to the KIEP. Details in relation to each plan are outlined in Table 5, along with recommendations to address significant gaps, which are included in the SEP in section X of this KIEP.

What is also notable from Table 5, and as shown in Figure 15, is that there is wide variability and lack of consistency and coordination between the timeframes of the various national policies, strategies and plans compared to the KDP and the KIEP. It is recommended that the Government of Kiribati look into requiring all future ministerial and sectoral policies, strategies and plans to adopt four-year planning timeframes aligned with the KDPs. While longer-term plans should be encouraged (as many issues require longer-term planning), those should have four-year sub-plans aligned to the KDPs, as has been adopted for this KIEP 2021–2036.

4.5 National environment and sustainability plans, programmes and laws

In addition to the overarching KIEP, the MELAD-ECD and other government agencies also develop and implement separate sub-strategies and action plans for specific environmental issues, with the main current ones being:

a. Climate change

- National Climate Change Policy (NCCP) (undated) (lead agency is Office of Te Beretitenti).
- Intended Nationally Determined Contributions (INDC) (current version 2016).
- National Adaptation Program of Action (NAPA) (latest version 2007).
- Joint Implementation Plan for Climate Change and Disaster Risk Management (JIP) (current version 2019–2028).

b. Biodiversity

- National Biodiversity Strategy and Action Plan (NBSAP) (latest version 2016–2020).
- Programme of Work for Protected Areas (PoWPA) (latest version 2010).
- National Invasive Species Strategy and Action Plan (NISSAP) (latest version 2015–2020).
- PIPA Management Plan (latest version 2010–2014).
- National Bio-safety Framework (latest version 2010).

c. Land degradation

- Kiribati National Action Plan to Combat Land Degradation and Mitigate the Effect of Drought (KNAP-CLD) (2017–2022).

d. Pollution and waste management

- Kiribati Waste Management and Resource Recovery Strategy (KWMRRS) 2020–2030.
- National Implementation Plan for Persistent Organic Pollutants (NIPPOPS).
- National Marine Pollution Contingency Plan (lead agency is Marine Division).

A number of other environmental sub-strategies and action plans, as well as various studies and reports, have been developed in previous years, although many of these are now quite dated and no longer relevant to the current situation.

This KIEP does not seek to duplicate these existing sub-strategies and action plans for specific environmental issues, but rather aims to coordinate and support their implementation and to address any key gaps. The SEP in section X of this KIEP therefore includes implementation of each sub-strategy and action plan as the key objective for each thematic area, and only includes additional key objectives and actions that are required to address any major gaps in each sub-strategy and action plan.

Similar to the national and sectoral development plans discussed above, Figure 16 shows that even within MELAD-ECD there is wide variability and lack of consistency and coordination between the timeframes of the KIEP and the various environmental sub-strategies and action plans. This makes it difficult to coordinate the various environmental sub-strategies and action plans within the overarching KIEP.

It is recommended that the MELAD-ECD look into requiring all future environmental sub-strategies and action plans to adopt four-year planning timeframes aligned with the four-year sub-plans in the KIEP 2021–2036 and the four-year KDPs.

The national legal and policy setting is also supported by the various environmental laws of Kiribati, which include ECD's primary legislation, the *Environment Act 1999* and its amendment of 2007, and ECD's supporting responsibilities under a number of other Acts and Ordinances, including the following (in chronological order from oldest and noting that those dated 1977 pre-date independence in 1979):

- Wildlife Ordinance 1977.
- Quarantine Ordinance 1977.
- Native Land Ordinance 1977.
- Foreshore and Land Reclamation Ordinance 1977.
- Land Planning Ordinance 1977.
- Disaster Risk Management and Climate Change Act 2019.
- Recreation Reserves Act 1996.
- Minerals Development Licencing 1998.
- Public Utilities Act 1999.
- State lands Act 200.
- Squatters Act 2005.
- Phoenix Island Protected Areas (PIPA) Regulations 2008.
- Fisheries Act 2010.
- Biosecurity Act 2010.
- Biosafety Regulations 2005 (still Draft).

TABLE 5: Main national development policies, strategies and plans and relevance to this KIEP 2021–2036

NATIONAL POLICY, STRATEGY OR PLAN	TIMEFRAME	LEAD AGENCY	PURPOSE	MAJOR POINTS OF RELEVANCE TO KIEP 2021–2036
Kiribati 20-Year Vision (KV20)	2016–2036	Office of Te Beretitenti (President).	- Political document setting out the 20-year national development vision of the Tobwaan (Embrace) Kiribati Party, which is currently in government and led by the Beretitenti. - Informs to the KDP 2020-23	- The KV20 focuses on four development pillars of 1) wealth, 2) peace and security, 3) infrastructure and 4) governance. - Seek trans-shipment revenue from fisheries, marine resources and tourism and creating additional land (by major dredging and land reclamation) for new 'trans-shipment hubs' (ports) and commercial development. - All of these development proposals can have significant environmental impacts. - The KV20 does not contain any measures to address such impacts. - Environmental sustainability is treated as a crosscutting issue with an almost exclusive focus on climate change and the risks that climate change poses to economic development.
Kiribati Development Plan (KDP) 2020-2023 (Launched on 2nd December 2021).	2020–2023	- National Economic Planning Office (NEPO). - Ministry of Finance & Economic Development (MFED).	- Sets the overall, periodic, four-years national development priorities, programmes and actions. - Relevant parts to be implemented by line ministries through their ministerial plans and programmes.	- Still a Draft at November 2021. - Pre-launched in November 2021. - Aligns closely to the KV20. - Draft vision is for a "Wealthier, Healthier and Peaceful Nation" – could ideally include 'sustainable' and/or 'resilient' in the vision as well, e.g., a "Wealthier, Healthier, Sustainable, Resilient and Peaceful Nation." - Has six Key Policy Areas (KPAs): - KPA 1: Harnessing our Human Wealth. - KPA 2: Growing Our Economic Wealth and Leaving No-One Behind. - KPA 3: Improving Our Health. - KPA 4: Protecting and Managing Our Environment & Strengthening Resilience. - KPA 5: Improving Good Governance. - KPA 6: Developing Our Infrastructure. - Overall, there is almost no reference at all to the SDGs (the only reference is to SDG 8 regarding child labour and SDG 16 in relation to governance); ideally the SDGs could provide a framework for such national development plans. - KPA 2 does not contain anything on shifting to a green, circular economy or developing a Sustainable Blue Economy Strategy – ideally these could be included.

NATIONAL POLICY, STRATEGY OR PLAN	TIMEFRAME	LEAD AGENCY	PURPOSE	MAJOR POINTS OF RELEVANCE TO KIEP 2021–2036
Kiribati Development Plan (KDP) 2020-2023 (Launched on 2nd December 2021).	2020–2023	- National Economic Planning Office (NEPO). - Ministry of Finance & Economic Development (MFED).	- Sets the overall, periodic, four-years national development priorities, programmes and actions. - Relevant parts to be implemented by line ministries through their ministerial plans and programmes.	- KPA 2 includes proposals for major dredging and land reclamation for new ‘trans-shipment hubs’ (ports) and for commercial land development at Tarawa and Kiritimati, expansion of tourism and enabling deep seabed mining. These proposals can have significant environmental impacts. Need to apply stringent Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA) and mitigation and monitoring measures. - KPA 3 includes improving water security and sanitation – which has environmental implications. - KPA 4 broadly covers the overall environment protection, conservation, management, sustainability, and resilience building. All these are referenced and reflected in the KIEP. The KIEP informs, aligns and implements the KPA 4 under the specific thematic areas. Ideally the following could be added as the over-arching priority in KPA 4: “Integrating and mainstreaming environmental sustainability into all socioeconomic sectors through implementing the Kiribati Integrated Environment Plan (KIEP) 2021–2036.” - Improving food security is included in KPA4 – this would be more appropriately included as part of agriculture and marine resource development plans – or placed in KPA2 or 3 – not environment. - KPA4 includes proposal to significantly expand agriculture on outer islands – which could cause significant environmental impacts including on water security, clearing of natural habitats and use of chemicals – needs SEA, EIA etc. - KPA4 includes major dredging and land reclamation as a so-called climate adaptation measure – as above has very significant environmental implications. - KPA4 does not include anything meaningful on the major issues of waste management and pollution prevention, or biodiversity. - The proposed strategies and KPIs in KPA4.4 are an eclectic mix of strategic technical actions, with limited link to the SEP in this KIEP. It is recommended to reference the Environment Protection, Conservation, Management, Sustainability, and Resilience Building component of the KPA 4 to the SEP in this KIEP, or simply reference to the KIEP. - KPA5 does not reference improving environmental governance and ideally this could be included.

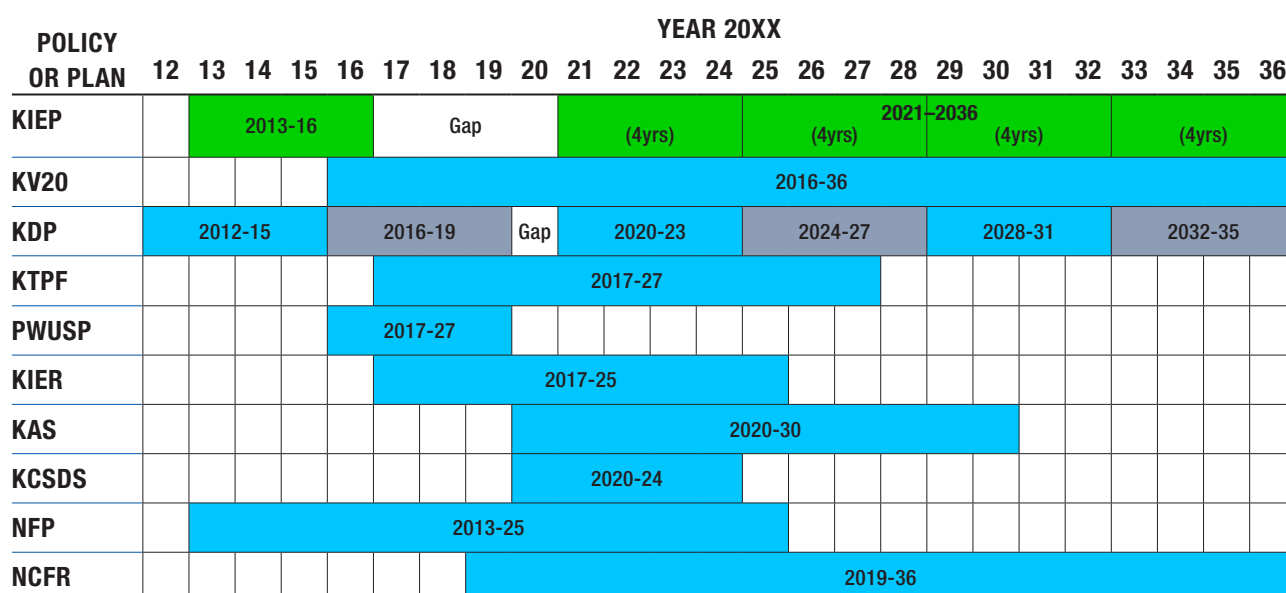
NATIONAL POLICY, STRATEGY OR PLAN	TIMEFRAME	LEAD AGENCY	PURPOSE	MAJOR POINTS OF RELEVANCE TO KIEP 2021–2036
Kiribati Trade Policy Framework (KTPF)	2017–2027	Ministry of Commerce, Industry & Cooperatives (MCIC).	■ To set the Government's strategy for using trade as a tool for creating wealth and prosperity for the people of Kiribati. ■ Seeks to remove domestic constraints that hinder private sector firms to invest, develop new industries and develop both domestic and international trade.	■ References the KV20 and KDPs. ■ Includes a specific section 3.3 on 'trade and environmental sustainability' with explicit reference to the KIEP. ■ Highlights that economic development and growth must be environmentally sustainable and protect the environmental resource base that underpins the main economic sectors of fisheries and tourism, and the need to address water security and sanitation, pollution, waste management, and climate change. ■ Includes policy measures to catalyse private sector movement towards a green, circular economy, improve environmental regulatory compliance and undertake EIA of proposed new trade-related investments. ■ The KTPF provides an excellent model of how to link with the KIEP and to integrate environmental sustainability considerations into a national development plan – which could be adopted by other plans including the KV20 and KDPs, which are currently lacking in this regard.
Kiribati Integrated Energy Roadmap (KIER)	2017–2025	Ministry of Infrastructure & Sustainable Energy (MISE).	Seeks to reduce Kiribati's dependence on imported oil to meet the majority of its energy needs and replace as far as possible with renewable, sustainable energy including solar, wind and bioenergy.	■ The Roadmap specifically references the need to shift to renewable energy in response to climate change, and includes sections on climate change and environment (14.4 and 14.5). ■ Reducing Kiribati's dependence on imported oil will have a range of environmental benefits including reducing local air pollution, land and ground-water contamination, greenhouse gas emissions and waste-oil management problems. ■ This KIEP does not duplicate the KIER but simply refers to it for energy issues.

NATIONAL POLICY, STRATEGY OR PLAN	TIMEFRAME	LEAD AGENCY	PURPOSE	MAJOR POINTS OF RELEVANCE TO KIEP 2021–2036
Kiribati Agricultural Strategy (KAS)	2020–2030	Ministry of Environment, Lands & Agricultural Development (MELAD). Agriculture & Livestock Division (ALD).	Seeks to support the achievement of the KV20 long-term development vision through diversifying and increasing agricultural production, productivity, livelihoods, jobs, food security, and improved nutrition and health for the Kiribati people.	- References the KV20 and KDPs. - There is potential conflict with the KDP 2020-23 KPA 4 on environment, which as outlined under KDP above includes a proposal to significantly expand agriculture on outer islands – that might be better shifted out of the KDP KPA4 to the Kiribati Agriculture Strategy (KAS) – as it is an agricultural development issue – not an environmental issue (although it does have environmental implications, as outlined under KDP above). - Includes an overview section on environmental sustainability (section 2.4) but consider this in terms of impacts on agriculture from environmental variability, with nothing about the impacts of agriculture on the environment. - Does not link to or reference the KIEP and includes only a few specific measures to ensure that further development of agriculture is actually environmentally sustainable (e.g., atoll-appropriate soil and water use, better management of piggery waste to reduce pollution). - It is recommended that a national-level SEA be conducted of all proposed agricultural development, and this is included in the SEP in section 9 of this KIEP.
Kiribati Coconut Sector Development Strategy (KCSDS)	2020–2024	Ministry of Commerce, Industry & Cooperatives (MCIC), supported by MELAD/ALD.	- Seeks to support the achievement of the KV20 Wealth Pillar by: - developing a “sustainable coconut sector for food security, health, prosperity, job creation and resilience”, and - Promoting and supporting the development of an inclusive private sector and integration of small to medium enterprises (SMEs) and the community at large in the coconut sector value chain.	- References the KV20 and KDPs. - Does not link to or reference the KIEP. - Includes a Guiding Principle on Environmental Sustainability: “The strategy recognises the need to promote sustainable business development that upholds environmental protection, management and efficient resource utilization to mitigate the impact of climate change.” - Seeks to expand the land areas under coconut production, which may cause environmental and biodiversity impacts, and should be included in the SEA for the overall agricultural sector as outlined above. Each individual land expansion proposal should also be subject to site EIA.

NATIONAL POLICY, STRATEGY OR PLAN	TIMEFRAME	LEAD AGENCY	PURPOSE	MAJOR POINTS OF RELEVANCE TO KIEP 2021–2036
National Fisheries Policy (NFP)	2013–2025	Ministry of Fisheries & Marine Resources Development (MFMRD).	■ Outlines the short, medium and long-term strategic objectives that will enhance responsible fisheries, with an emphasis on the need to support, improve and sustain the people's livelihood, food security and economic growth today and for future generations. ■ Envisions a healthy marine environment and sustainable fisheries development that provides food security and revenue for the current and future generations of I-Kiribati.	■ References the KDP but not the KIEP. ■ Includes summary of climate change threats to fisheries (section 2.5). ■ Explicitly includes need for healthy marine environment, sustainable fisheries and climate change resilience, but does not include strategies and technical actions to achieve these, ■ Does not explicitly embrace Ecosystem Base Management (EBM) or other measures to address the impacts of fisheries, fishing vessels, fisheries facilities, and infrastructure, including proposed transshipment hub at Kiritimati, on marine ecosystems. ■ It is recommended that the environmental gaps in the NFP be addressed and this is included in the SEP in section 9 of this KIEP.



NATIONAL POLICY, STRATEGY OR PLAN	TIMEFRAME	LEAD AGENCY	PURPOSE	MAJOR POINTS OF RELEVANCE TO KIEP 2021–2036
National Coastal Fisheries Roadmap (NCFR)	2019–2036	MFMRD.	▪ To guide sustainable management and development of coastal fisheries for the benefit of Kiribati. ▪ The strategy supports the objectives of the KV20 and Kiribati National Fisheries Policy 2013–2025. ▪ Also provides a framework for Kiribati's implementation of the principles and commitments set out in the 'New Song' policy on coastal fisheries in the Pacific region, including support for community-based coastal resource management.	▪ References the KV20 and KDP but not the KIEP. ▪ Specifically includes Ecosystem Base Management (EBM) as a guiding principle. ▪ Does not include technical measures to address the impacts of fisheries, fishing vessels and fisheries facilities and infrastructure, on marine ecosystems. ▪ It is recommended that the environmental gaps in the NCFR be addressed and this is included in the SEP in section 9 of this KIEP.
Kiribati Meteorological Service Strategic plan and National framework for weather, climate and Ocean services	2021–2025	Office of Te Beretitenti (KMS division)	▪ The KMS strategic plan charts a course over the 5 year period providing effective weather, climate and ocean services ▪ The Framework for weather, climate and ocean services (FWCOS) established as a multi-stakeholder user interface platform enabling the development, delivery and application of the services at the national level.	▪ Support the KIEP in terms of improving weather and climate monitoring and projections for planning purposes. ▪ Support in building national resilience from diverse impacts of climate variability and climate change.



KIEP = Kiribati Integrated Environment Policy. KV20 = Kiribati 20-Year Vision. KDP = Kiribati Development Plan. KTPF = Trade Policy Framework. PWUSP = Public Works & Utilities Strategic Plan. KIER = Kiribati Integrated Energy Roadmap. KAS = Kiribati Agricultural Strategy. KCSDS = Kiribati Coconut Sector Development Strategy. NFP = National Fisheries Policy. NCFR = National Coastal Fisheries Roadmap.

FIGURE 15: Timeframes for various national and sector development policies, strategies and plans in the Republic of Kiribati compared to the KIEP



KIEP = Kiribati Integrated Environment Policy. KCCP = Climate Change Policy. KJIP = Joint Implementation Plan for Climate Change & Disaster Risk Management. NBSAP = National Biodiversity Strategy & Action Plan. NISSAP = National Invasive Species Strategy & Action Plan. KWMRRS = Waste Management & Resource Recovery Strategy. KNAP-CLD = Kiribati National Action Plan to Combat Land Degradation and Mitigate the Effect of Drought.

FIGURE 16: Timeframes for the main environmental policies, strategies and plans in the Republic of Kiribati compared to the KIEP

5 KIEP DEVELOPMENT PROCESS

Development of the KIEP 2021–2036 commenced with a comprehensive review of the previous KIEP 2013, in order to evaluate what has and what has not been achieved, and identify strengths, weaknesses and lessons to inform development of this KIEP. Methods used to review the *KIEP 2013* included the engagement of an international consultant (IC) to synthesise the review outcomes, as reported in Raaymakers (2020), and to draft this KIEP. The review of the *KIEP 2013* involved the following steps:

- a. KIEP Review Workshop: A review workshop involving Kiribati stakeholders was organised by SPREP and ECD in September 2019, and the outcomes were submitted to the IC for analysis.
- b. Consultations of the Thematic Working Groups (TWGs): Individual stakeholder groups and TWGs held KIEP review sessions in Kiribati, coordinated by ECD, in May and June 2020, and the outcomes were submitted to the IC for analysis. Details on the TWGs are provided below.
- c. Questionnaire: A questionnaire was distributed by email to a wide range of stakeholders in June 2020, and questionnaire responses were analysed by the IC. In order to encourage frank and open responses, respondents were not required to identify themselves and all responses are treated with anonymity.
- d. GEF-7 National Dialogue: In February 2020, ECD held a national dialogue to discuss and identify priority national environment needs, to tap Government of Kiribati's (GoK) eligibility under the System for Transparent Allocation of Resources (STAR) under the 7th replenishment of the Global Environment Facility (GEF 7). The outcomes of these consultations were provided to the IC for analysis. The needs and priorities of the outer islands are reflected in the outcomes of the GEF-7 national dialogue, and these are addressed in this KIEP 2021–2036.
- e. Consultant review and analysis: The IC consolidated and synthesised all of the above outputs, and also undertook an in-depth evaluation and review of the KIEP 2013 document itself, to produce an overall Review Report, as well as recommendations for the structure and contents of this KIEP (Raaymakers 2020).

Development of the previous *KIEP 2013* involved five TWGs as follows:

- a. climate change,
- b. island biodiversity and conservation management,
- c. waste management and pollution prevention,
- d. natural resource management, and
- e. environmental governance.

These same TWGs were used to review the *KIEP 2013* and three additional TWGs have also been formed to cover emerging environmental issues that have been added to the next *KIEP 2020-36*:

- a. Environmental education, communication and public awareness,
- b. environmental information and data management,
- c. local communities, disabilities, youth, and
- d. Faith Based Organisations (FBOs).

Following completion of the KIEP 2013 review, the IC developed a first draft of this KIEP 2021–2036, which was then submitted to ECD and circulated to all relevant stakeholders for consultation and review. Review comments received were incorporated by the IC to produce the final KIEP 2021–2036. A list of all stakeholders consulted is available from ECD.

6 GUIDING PRINCIPLES FOR KIEP IMPLEMENTATION

The implementation of this KIEP will be guided by the following four key principles:

- 1. Leadership and Good Governance:** This principle links to National Focal Area (NFA)-5 of the KDP 2021–24, and generally means that the government of Kiribati will lead efforts to protect, manage and promote the sustainable use of the country’s environment and its natural resources. It requires upholding good governing practices of transparency, accountability, shared responsibility and equity in the consideration of environmental requirements in development practices. It respects everyone’s right to a clean and healthy environment and recognises the Precautionary, Polluter Pays and Carrying Capacity Principles.
 - i.** The **Precautionary Principle** is defined in the UN Agenda 21 Rio Declaration (1992) as “*In the face of threats of irreversible environmental damage, lack of full scientific understanding should not be an excuse for postponing actions which are justified in their own right*”.
 - ii.** The **Polluter Pays Principle** means that populations are justly responsible for the waste and pollution they generate either directly or through payments for the available mitigation and management services. The principle also extends to society’s responsibility to directly pay for the programmes that help replenish, restore and rehabilitate natural resources and the environment that were exploited or degraded through extensive development activities. The Polluter Pays Principle is especially pertinent on SIDS like Kiribati where waste management and pollution prevention issues are particularly challenging.
 - iii.** The **Carrying Capacity Principle** may be defined as the ability of the environment to sustain the needs of human development and its own natural requirements. As such development should respect and be maintained within the limits of the carrying capacities of its hosting environment if it is to achieve a more environmentally and socially sound and sustainable pathway. The Carrying Capacity Principle is especially pertinent on SIDS like Kiribati where environmental resources, including land, water and habitats, are highly constrained.
- 2. Collective Responsibility for the Environment:** Protecting, managing and sustainably using the environment and its goods and services are generally accepted as everyone’s responsibility. This responsibility is carried out both at the individual and collective levels. This principle recognises each individual as holding the key responsibility. It also recognises the relevant roles and influences that all sectors and institutions of the society have, in contributing to the protection and management of Kiribati’s environment and its goods and services.
- 3. Traditional Knowledge, Practices and Innovations:** I-Kiribati people have developed valuable traditional knowledge and practices that can contribute positively to the sustainable use and effective management of their natural resources and the environment, and to adaptation to environmental change. These traditions and practices are important elements of their culture and heritage that form the national identity. These will be integrated into the implementation of this policy. ECD has a significant role in providing a conduit through protecting, managing and sustainably using island biodiversity, to which traditional knowledge, practices and innovations are dependent on.
- 4. Integration of Environment and Development:** This principle recognises the organic nature of environment and development in the sense that the environment underpins development.

It recognises the challenges in reconciling and balancing the needs of the environment and the development needs of human society in Kiribati. It is vital that economic and/or physical development must be linked with environmental protection, and not degrading it, to facilitate long-term sustainability. It emphasises the critical importance of credible, relevant and legitimate scientific investigations and information to the integration and mainstreaming of the environment into development planning and implementation. And it recognises appropriate value systems of the people and society in Kiribati that promotes and support the integrity of the environment as a system and its goods and services.



7 ROLES, RESPONSIBILITIES, COORDINATION AND CONSULTATION

As outlined in section 1, the purpose of the KIEP 2021–2036 includes providing the overarching strategy and framework for integrating environment and sustainability considerations into all aspects of national development, through the four-year KDPs and individual ministry plans, mainstreaming environment and sustainability considerations into all socioeconomic sectors, and enabling and facilitating ECD as the central authority for coordinating environment and sustainability issues across government ministries under an integrated, whole-of-government approach.

Lead responsibility for coordinating the overall implementation of the KIEP 2021–2036 rests with the Director of ECD, under the direction of the Secretary and the Minister of MELAD, and through a newly formed KIEP Implementation Oversight Committee (KIOC). Draft Terms of Reference (ToR) for the KIOC are presented in Annex 2.

The KIOC will comprise senior representatives from all relevant ministries and divisions of government, plus invited senior representatives from all relevant private sectors, civil society, including NGOs, women's, youth and vulnerable groups, outer islands and development partners. The KIOC will be chaired by the Minister or the Secretary of MELAD, with ECD acting as the Secretariat, and will meet twice a year (every six months). Its role will be to:

- a. Coordinate KIEP activities across ministries, divisions and socioeconomic sectors.
- b. Provide a high-level forum for the input of strategic views, needs, priorities and perspectives of the relevant stakeholders.
- c. Advise and assist in securing resources and finances for KIEP implementation.
- d. Review progress with KIEP implementation, including assessing reports from the KIEP's Monitoring, Evaluation and Learning (MEL) Plan (as outlined in section 11 below), and recommending and overseeing any adaptive management and corrective actions required to keep KIEP implementation on track.

While the KIOC will oversee implementation of the KIEP at the strategic, 'whole-of-KIEP' level, existing coordination and consultation committees will continue to be used for each Thematic Area, as listed in Table 6.

The actual implementation of technical KIEP activities will be through a cooperative partnership approach, where all relevant ministries, divisions and sectors will play a role, depending in the Thematic Area and the technical activity, as specified in the SEP. Every Thematic Area and technical activity have both a "Lead Agency", with overall responsibility for effective implementation, and "Supporting Agencies", who will support the Lead Agency with implementation. These are all specified in the SEP.

TABLE 6: Committees and working groups that will continue to be used for each Thematic Area during implementation of the KIEP 2021–2036

THEMATIC AREA (TA)	NAME OF COMMITTEE/WORKING GROUP
TA 1: Environmental governance (EG):	▪ Joint Enforcement Task force (JET). ▪ Littering Enforcement Task force (LET). ▪ Fisheries Administrative Penalty Committee (FAPCOM). ▪ Environment Impact Assessment (EIA) Review Committee (yet to be formalized).
TA 2: Climate change (CC):	▪ Climate Change Study Team/National Adaptation Steering Committee.
TA 3: Biodiversity (BD):	▪ National Biodiversity Planning Committee.
TA 4: Waste management and pollution prevention (WMPP):	(as outlined in the KWMRRS) ▪ Environment Advisory Board. ▪ Green Bag Taskforce. ▪ Health Care Waste Management Committee. ▪ Kamwengaraoi Steering Committee. ▪ Kaoki Maange Taskforce. ▪ Laboratory Chemical Waste Taskforce. ▪ Litter Enforcement Taskforce. ▪ Marine Pollution Prevention Taskforce. ▪ National Asbestos Taskforce. ▪ National Chemical and Hazardous Waste Management Coordination Committee. ▪ National Solid Waste Management Committee. ▪ Organic Waste Taskforce. ▪ Plastic Banning Taskforce. ▪ Persistent Organic Pollutants Global Monitoring Programme Taskforce. ▪ Waste Collection & Disposal Taskforce.
TA 5: Non-living natural resources (NNR):	▪ Central Land Planning Board/Sustainable Land Management Planning Team. ▪ National Water and Sanitation Steering Committee. ▪ Foreshore Management Committee. ▪ National Food Security Committee. ▪ National Water Quality Monitoring Committee. ▪ LDN Technical Working Group.
TA 6: Ocean health & sustainable blue economy (OHSBE):	▪ Kiribati Seabed Minerals Technical Advisory Committee (KISMTAC). ▪ National Marine Pollution Committee (Marine Division). ▪ Biodiversity Planning Committee for marine biodiversity issues. ▪ Fisheries Administrative Penalty Committee (FAPCOM).
TA 7: Environmental education, communication & awareness (EECA):	▪ Environment Youth Club. ▪ Local Communities. ▪ Church Groups. ▪ Schools (Kindergarten, Primary, Junior Secondary School, High School, and Tertiary Schools).
TA 8: Environmental data and information management (EIDM):	▪ GIS User group. ▪ AMAT Technical Working Group. ▪ BUR Technical Working Group. ▪ Women in ICT. ▪ National ICT working group.

8 THEMATIC AREAS

As outlined in section 5 above, the previous *KIEP 2013* was organised into five Thematic Areas (TAs) as follows:

1. climate change,
2. island biodiversity and conservation management,
3. waste management and pollution prevention,
4. natural resource management, and
5. environmental governance.

As a result of consultations with key stakeholders during the development of this KIEP it was agreed that environmental governance would be elevated to be the highest priority of all the TAs, as strengthening good governance is essential to achieving the objectives of all other TAs, and is also a major focus of both the KV20 and the KDP 2021–24. It was also agreed that three new TAs would be added, and the complete set of TAs for this KIEP is as follows:

- TA 1: Environmental Governance (EG).**
- TA 2: Climate Change (CC).**
- TA 3: Biodiversity (BD).**
- TA 4: Waste management and Pollution Prevention (WMPP).**
- TA 5: Non-living Natural Resources (NNR).**
- TA 6: Ocean Health and Sustainable Blue Economy (OHSBE).**
- TA 7: Environmental Education, Communication and Awareness (EECA).**
- TA 8: Environmental Information and Data Management (EIDM).**

The relevant SDG symbols, lead responsibility, situation summary, national needs and priorities, long-term goal (to end 2036), initial four-year goal (to end 2024), objectives and strategies for each TA are discussed below, and the SEP in section 9 provides a Logical Framework (LogFrame) for how these are going to be achieved, for the first four-year work plan of this KIEP.

The situation summary, national needs and priorities, long-term goal (to end 2036), initial four-year goal (to end 2024) and objectives and strategies for each TA were developed based on:

- a. the consultant's in-depth review and analysis of all available reports and data on environmental issues in Kiribati,
- b. inputs from the TWGs and the GEF-7 National Dialogue meetings,
- c. expert inputs from SPREP; and
- d. review of the draft by ECD staff.

TA 1 Environmental Governance (EG)



LEAD RESPONSIBILITY

- The Ministry of Justice through the Office of Attorney General (OAG) provides legal advice across Government and assists MELAD-ECD in prosecuting environmental offences which coordinated and facilitated by Judiciary.
- MELAD-ECD is the 'National Environmental Authority' with significant regulatory powers under the *Environment (Amendment) Act 2007* and its regulations, *Recreational Reserves Act 1996* and the *Wildlife Conservation Ordinance* (refer section 4.5).
- MELAD-ECD also administers the *Special Fund (Waste Material Recovery) Act 2004* in collaboration with the Ministry of Finance and Economic development (MFED), and the Ministry of Justice through the Kiribati Customs Administration and Enforcement (KCAE).
- MELAD-ECD is also responsible for the technical implementation of relevant MEAs (refer section 4.3).
- In addition to its regulatory functions ECD also plays a vital role coordinating a 'whole-of-government' approach to EG, through the establishment of the National Environment Advisory Board (NEAB), various joint committees (e.g., Foreshore Management Committee) and related technical working groups.
- A number of other ministries, divisions and agencies have significant roles in different aspects of EG, including:
 - National Economic Planning Office (NEPO) for ensuring consistency and coordination between the 4-year KDPs and the KIEP.
 - MELAD-LMD for land management issues.
 - MFMRD for sustainable fisheries and marine resource governance.
 - Marine Division for regulating and responding to pollution from vessels.
 - MISE for water resources, sanitation governance and sustainable development infrastructure.
 - MFMRD Geoscience Division for regulating seabed mining, marine scientific research and sand and gravel extraction.
 - Island councils and local communities for local-level, community-based and traditional and customary EG frameworks.
 - Police to Kiribati Police Service (KPS) for the enforcement of certain environmental laws and regulations.

There are also sector-specific governance arrangements under the various policies, strategies and action plans that have been developed by GoK for different environmental thematic areas. For example, under the National Climate Change Policy, the KWMRRS, etc., – and these are outlined under each Thematic Area below.

SITUATION SUMMARY

- Kiribati has a well-developed and multi-faceted national EG regime in place (refer section 4) ranging from being a party to most of the main global MEAs, to several local laws that date from before independence in 1979 (e.g., the Wildlife Ordinance 1977 and the Native Land Ordinance 1977, amongst others), through to modern environmental legislation that incorporates certain best practice principles in the form of the *Environment (Amendment) Act 2007*. There are also local-level, community-based and traditional/customary EG frameworks that remain intact and operational on some islands.
- Kiribati also has well-developed mechanisms in place for whole-of-government coordination and cooperation on EG matters, including several committees as outlined in section 7, and joint task groups for the multi-agency enforcement of certain regulatory requirements, including cooperation on enforcement between MELAD-ECD, other Ministries and Divisions and the Police.
- The Island Strategic Plans (ISPs), overseen by the Ministry of Internal Affairs (MIA), are the main Island Council mechanism to govern the conservation and protection of respective island natural resources.
- The main challenge to effective EG in Kiribati is not a lack of legislation and regulations, but a need to update, rationalise and streamline the current plethora of legislation and regulations, a limited capacity of skills and human resources for compliance and enforcement, and the challenge of national regulatory agencies being concentrated on Tarawa with limited to no EG capacity on most of the outer islands.
- To date, prosecution of environment and related offences has not been effective and efficient.
- There is also a lack of awareness amongst businesses and the community about their environmental regulatory obligations,
- While there is a reasonably effective framework in place for EIA, permitting and licencing of specific development projects, there is no system in place for conducting cumulative impact assessment (CIA) and strategic environmental assessment (SEA) of broader sectors and national development initiatives, at a time when several major new developments are being proposed (e.g., major dredging and land reclamation, significant expansion of agriculture on outer islands, deep seabed mining etc.). Currently there is no “enabling environment” for the application of the CIA and the SEA at the country level.
- As outlined in section 4.3 there are some key MEAs that are highly relevant to Kiribati which have not yet been ratified, including CITES, some key IMO conventions, and most of the MEAs administered by SPREP.
- Transnational environmental crime is also an emerging issue driven by increasing interest by various foreign countries in Kiribati’s terrestrial and marine resources, which raises the prospect of increased over-exploitation, illegal fishing and poaching, including of endangered and endemic species such as bokikokiko, (Christmas Island warbler) marine turtles, giant clams and others.

NATIONAL NEEDS AND PRIORITIES

- There is a need for Kiribati to ratify all relevant global and regional MEAs that it has not yet ratified, but which will bring benefits to Kiribati, including CITES and some key IMO conventions, and most of the MEAs that are administered by SPREP (refer section 4.3).
- There is a need to undertake a comprehensive review of the full suite of environmental protection, nature conservation and natural resource management laws and refresh and update them into a more integrated, streamlined and simplified set of laws that are consistent with all relevant MEAs, incorporate best principles of Ecological Sustainable Development (ESD), including the ecosystem-based approach, precautionary principle, polluter pays and users pays and carrying capacity limits principles
- While Kiribati has EIA legislation and increasing experience in EIA, there is a need for further capacity building in EIA and expansion to include CIA and SEA.
- There is a need to undertake CIA and SEA of major new national development initiatives, such as major dredging and land reclamation, significant expansion of agriculture on outer islands and deep seabed mining, and to ensure that the most stringent EG measures are applied to these proposals.
- There is a need to significantly increase compliance and enforcement capabilities, both at ECD and other agencies, and on the outer islands.
- There is a need for a concerted and sustained awareness campaign and environmental incentives to make businesses and the community more aware of their environmental regulatory obligations.
- There is a need for Kiribati to start working cooperatively with partner countries, INTERPOL and other organisations to begin developing systems to prevent, deter, detect and respond to transnational environmental crime.
- There is a need to protect, revive, promote, strengthen and expand local-level, community-based and traditional and customary EG frameworks, especially on the outer islands.
- There is a need to establish a specialist court for environmental issues – a ‘Green Court’ – to prosecute offences under the new Environment Act and other environment-related laws and regulations in Kiribati.
- There is a need to further strengthen the ISPs as the main Island Council mechanism to govern the conservation and protection of respective island natural resources, including increased capacity-building of Island Councils.

LONG-TERM GOALS (LTGs) (BY END 2036)

- **LTG-EG1 – Integrated EG Regime:** By end 2036, Kiribati has a fully developed, multi-faceted, modern, integrated EG regime that effectively incorporates best practices from the global, regional, national and local-level/traditional EG regimes, and provides a forum for environmental science and policy interface, and delivers an ecologically sustainable future for the people of Kiribati.

INITIAL FOUR-YEAR GOALS (FYGs) (BY END 2024)

- **EG1 – MEAs ratification:** By end 2024, Kiribati considers ratification and where appropriate, ratifies relevant global and regional MEAs that it has not yet ratified, but which will bring benefits to Kiribati, as listed in Tables 3 and 4 including CITES and some key IMO conventions, and most of the MEAs that are administered by SPREP.

- **EG2 – MEA implementation:** By end 2024, Kiribati is able to fully meet its obligations under the all MEAs to which it is a party to, including through the assistance available from the ACP-MEAs2 project.
- **EG3 – National EG Regime Update:** By end 2024, Kiribati has undertaken a comprehensive review of the full suite of environmental protection, nature conservation and natural resource management laws and refreshed and updated them into a more integrated, streamlined and simplified set of modern laws that are consistent with all relevant MEAs, incorporate best principles of Ecological Sustainable Development (ESD), including the ecosystem-based approach, precautionary principle, polluter pays and users pays and carrying capacity limits principles, as well as CIA and SEA.
- **EG4 – CIA and SEA:** By end 2024, MELAD-ECD and relevant stakeholders have received training and capacity building in CIA and SEA and are fully equipped with the capacity to undertake CIA and SEA of major new national development initiatives such as dredging and major land reclamation, significant expansion of agriculture on outer islands, deep seabed mining and others that might arise.
- **EG5 – Environment Licencing Management System (ELMS):** By end 2024, Kiribati has an electronic environmental licencing system, including online licence application portal and licencing database for ECD environmental licences, scientific research licences and WCD licences.
- **EG6 – Compliance and Enforcement:** By end 2024, national capacity for environmental compliance and enforcement has been significantly strengthened, including on the outer islands, and including establishment of a specialist court for environmental issues – a ‘Green Court’ – to prosecute offences under the new Environment Act and other environment-related laws and regulations in Kiribati.
- **EG7 – EG Awareness:** By end 2024, all businesses and the community are fully aware of their environmental regulatory obligations under Kiribati environmental protection, nature conservation and natural resource management laws.
- **EG8 – Transnational Environmental Crime:** By end 2024, MELAD-ECD and relevant stakeholders have received training and capacity building to allow Kiribati to assess and raise awareness of transnational environmental crime and start working cooperatively with partner countries, INTERPOL and other organisations to prevent, deter, detect and respond to transnational environmental crime, especially with regard to marine resources and endangered species.
- **EG9 – Traditional/Customary EG Frameworks:** By end 2024, Kiribati has begun to implement programmes to raise awareness and build capacity to protect, revive, promote, strengthen and expand local-level, community-based and traditional and customary EG frameworks, especially on the outer islands.

POST-2024

- MELAD-ECD in consultation with all relevant partners will develop the next EG four-year plan (post-2024) by the end of June 2024, including a revised and updated SEP and LFA, ready for seamless implementation.
- The focus will be on implementing key plans and actions developed in 2021–24, towards the LTGs to 2036.
- Development of each subsequent four-year plan will take into account the findings and lessons of the MEL reports from the previous period.

TA 2 Climate Change (cc)



LEAD RESPONSIBILITY

- Office of Te Beretitenti (OB) for policy and coordination.
- Ministry of Finance and Economic Development (MFED) for climate finance coordination.
- Kiribati National Experts Group (KNEG) for cross-sectoral coordination, technical advice and to lead sector specific implementation of adaptation and mitigation related actions.
- ECD for environment – climate change science and technical advice and implementation, with respect to the overall state of the environment.
- MISE and Kiribati Green Energy Solar Solution for renewable energy.
- Tourism Authority of Kiribati (TAK) as climate change has implications for tourism and the tourism sector is developing resilience-based responses.
- Ministry of Line and Phoenix Islands Development (MLPID), as those islands are also under threat of climate change and to ensure remote island voices are heard.
- Ministry of Internal Affairs as their role includes supporting and strengthening Island Strategic Plans, which address climate change issues.
- Meteorological Service for climate data services, monitoring, modelling, predictions, early warning, etc.
- Other organisations as shown in Figure 17.

Institutional arrangements are outlined in the National Climate Change Policy as shown in Figure 17.



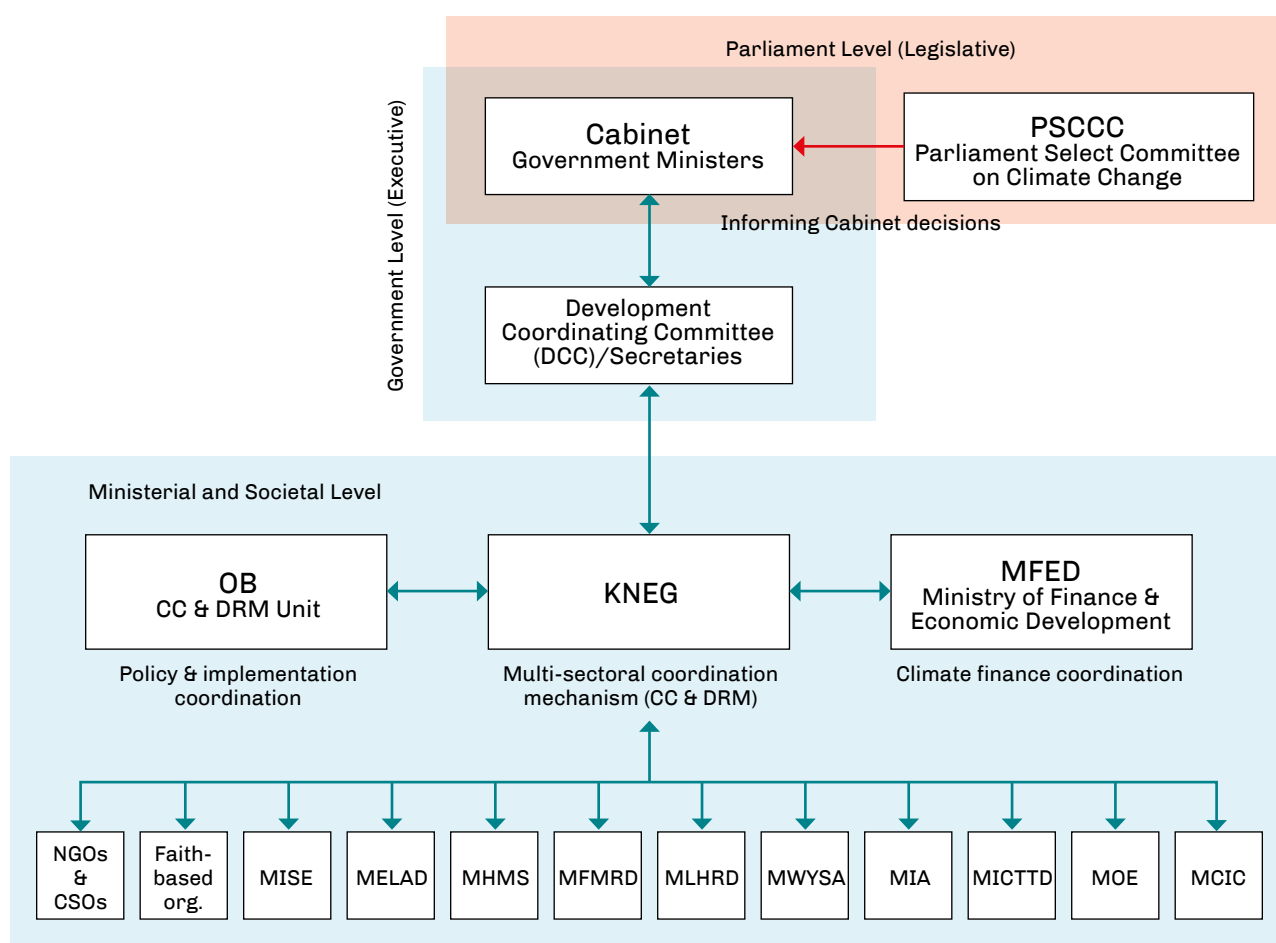


FIGURE 17: Institutional arrangements for climate change issues in Kiribati as outlined in the National Climate Change Policy

SITUATION SUMMARY

- Refer to section 3.3. Climate change is the most significant externally imposed environmental issue, potentially threatening the very existence of Kiribati as a viable, sustainable nation in the long-term.
- Despite being extremely active in lobbying via UNFCCC and other international fora, along with other vulnerable SIDS, Kiribati has limited scope to reduce global GHG emissions by major industrial economies and needs to prioritise national adaptation.
- Climate change mitigation strategies and actions are outlined in the *Intended Nationally Determined Contributions* (INDC) (current version 2016) under the Paris Agreement to the UNFCCC.
- Climate change adaptation strategies and actions are outlined in the *National Adaptation Program of Action* (NAPA) (latest version 2007) and now the *Joint Implementation Plan for Climate Change and Disaster Risk Management* (JIP) (current version 2019-2028), with technical assistance via the World Bank-GEF/multi-donor Kiribati Adaptation Program (KAP) (Phase III ended in 2016).
- This KIEP does not seek to duplicate these existing policies, plans and programmes but rather to support their implementation and to identify and address any key gaps.

NATIONAL NEEDS AND PRIORITIES

CLIMATE CHANGE MITIGATION

- In terms of mitigation, given its tiny contribution to global GHG emissions, Kiribati itself cannot have any material impact on reducing global emissions. Kiribati needs to continue to cooperate with other SIDS in lobbying via UNFCCC and other international fora, for major industrial economies to reduce global GHG emissions, in accordance with UNFCCC and its sub-protocols and agreements, so as to achieve a climate-safe future.
- While reducing Kiribati's own emissions will have no global impact, Kiribati should still seek to reduce its own emissions so as to provide a moral position when lobbying internationally.
- National-level mitigation measures are specified in the INDC (current version 2016).
- The most significant reductions can be achieved through shifting to renewable energy, in accordance with the *Kiribati Integrated Energy Roadmap* (KIER) 2017-2025.

CLIMATE CHANGE ADAPTATION

- Adaptation is the highest priority for Kiribati, across all islands and all socioeconomic sectors. This requires full implementation of the KJIP 2019-2028, plus a range of other priority actions.
- Integrated Vulnerability Assessments (IVAs) have been carried out for 14 inhabited islands in Kiribati. Follow up action is required to implement adaptation measures to address the vulnerabilities identified in each IVA, and to also undertake IVAs for all 33 islands across Kiribati, including the uninhabited islands, where ecological resources and values may be threatened by climate change.
- In addition to IVAs for each island, it is also necessary to undertake climate change sector vulnerability assessments (SVAs) for each socioeconomic sector in the country (e.g., fisheries, agriculture, tourism, etc.), with recommendations for best practice adaptation measures for each sector (Sector Adaptation Plans – SAPs), based on their SVAs.
- Island Strategic Plans (ISPs) have been developed for some islands and these provide a planning framework for integrating climate change adaptation measures into overall island development plans. There is a need to develop ISPs for all islands and to ensure that all of these integrate adaptation measures, based on each island's IVA.
- There is a need to move away from 'hard-engineering' adaptation measures such as concrete seawalls and land-reclamation towards climate change resilient adaptation measures for each island and each sector that are based on soft/green engineering, 'building with nature' (BWN), and promoting community involvement and ownership.
- There is a need for improving technical capacity on climate projection to feed decision-making on climate change resilient adaptation measures and approaches.

LONG-TERM GOALS (LTGs) (BY END 2036)

Within the overarching framework of the National Climate Change Policy (including future versions):

- **LTG-CC1 – Global Mitigation:** By end 2036, Kiribati has actively contributed to campaigning and negotiations at the UNFCCC Paris Agreement and subsequent agreed measures to encourage the global community to stabilize GHG emissions and achieve a climate-safe future.
- **LTG-CC2 – National Mitigation:** By end 2036, Kiribati has reduced its own GHG emissions to the maximum extent possible, in accordance with its periodic INDC plans and the KIER 2017-2025 (and subsequent versions).
- **LTG-CC3 – National Adaptation:** By end 2036, all islands and all socioeconomic sectors in Kiribati are fully adapted and resilient to the impacts of climate change.

INITIAL FOUR-YEAR GOALS (FYGs) (BY END 2024)

Within the overarching framework of the National Climate Change Policy (including future versions):

- **CC1 – Global Mitigation:** By end 2024, Kiribati has continued to actively participate in UNFCCC and other international fora, in close cooperation with other SIDS, to lobby major industrial economies to reduce global GHG emissions.
- **CC2 – National Mitigation:** By end 2024, Kiribati has fully implemented the INDC Plan 2016 and developed and implemented relevant subsequent versions, and substantially completed implementation of the KIER 2017-2025.
- **CC3 – KJIP implementation:** By end 2024 implementation of the KJIP 2019-2028 has been reviewed and any changes required are identified for implementation during the remaining JIP period to 2028.
- **CC4 – Integrated Vulnerability Assessments (IVAs):** By end 2024, building on the 14 IVAs already completed by 2021, systematic, science-based, best-practice climate change IVAs have been completed for all islands, including uninhabited islands, with recommendations for Island Adaptation Plans (IAPs) for each island, based on their IVAs.
- **CC5 – Sector Vulnerability Assessments (SVAs):** By end 2024 systematic, science-based, best-practice climate change SVAs have been completed for all socioeconomic sectors in the country, with recommendations for Sector Adaptation Plans (SAPs) for sector, based on their SVAs.
- **CC6 – Island Strategic Plans (ISPs):** By end 2024, all islands in Kiribati have ISPs that include climate adaptation plans, as recommended by the IVAs, with preference for measures that are based on soft/green engineering, 'building with nature' and community involvement and ownership.
- **CC7 – Sector Adaptation Plans (SAPs):** By end 2024, all socioeconomic sectors in Kiribati have begun to implement their SAPs, as recommended by their SVAs, with preference for measures that are based on soft/green engineering, 'building with nature' and community involvement and ownership.
- **CC8 – Climate Science:** By end 2024, the Kiribati Meteorological Service (KMS) has received capacity building to improve climate science, data, monitoring, modelling, predictions and early warning, to support policy and management decision-making on climate change mitigation and adaptation in Kiribati.

POST-2024

- MELAD-ECD in consultation with all relevant partners will develop the next CC four-year plan (post-2024) by the end of June 2024, including a revised and updated SEP and LFA, ready for seamless implementation.
- The focus will be on implementing key plans and actions developed in 2021–2024, towards the LTGs to 2036.
- Development of each subsequent four-year plan will take into account the findings and lessons of the MEL reports from the previous period.



TA 3 Biodiversity (BD)



LEAD RESPONSIBILITY

- MELAD-ECD.
- The Biodiversity and Conservation Unit (BDU) within ECD is responsible for implementing biodiversity and conservation programmes at the village, island, national, regional and international levels. The Unit also handles the CBD and its Protocols, World Heritage Convention, and the Ramsar Convention on Wetlands which Kiribati is a party to. The United Nations Convention to Combat Desertification, Land Degradation and Drought is also relevant to biodiversity, and Kiribati is a party.
- The Wildlife Conservation Unit (WCU) within ECD, based on Kiritimati Atoll, is responsible for safeguarding all native wildlife on Kiritimati, as well as other islands in the Line and Phoenix Groups. The species that come under the protection of the WCU are listed in the *Kiribati Wildlife Ordinance 1977*. The WCU is most active in protecting bird populations as well as certain species of turtle.
- The Board of the PIPA Trust Fund oversees funding of management of the PIPA.
- The MELAD-ALD, while focused on agricultural development, has an interest in the conservation of terrestrial biodiversity, especially in relation to traditional, multi-layered agro-forest resources which provide food security for most rural people in Kiribati.
- The MFMRD, while focused on fisheries and marine resource development, also works on the conservation of marine biodiversity.
- Recognising the linkages between biodiversity and cultural diversity (bio-cultural diversity), including the Traditional Ecological Knowledge (TEK) that has been practiced by I-Kiribati for millennia, the Department of Culture in the Ministry of Internal Affairs also has a role in protecting and preserving the bio-cultural diversity of Kiribati.
- The Tourism Authority of Kiribati (TAK) has a role, as both terrestrial and marine biodiversity values are major tourism 'drawcards' in Kiribati, with ecotourism, organic tourism and agritourism, and there is a need to encourage community and private tourism businesses to focus on biodiversity conservation to support their ecotourism businesses.
- MLPID as islands such as Teraina, Tabuaeran and Kiritimati, and others in the Line and Phoenix groups, have very high value biodiversity resources, and MLPID has a role to play in protecting and managing these resources.

SITUATION SUMMARY

- Refer section 3.5 above.
- The BD TA includes all terrestrial and marine biodiversity and all flora and fauna, as well as bio-cultural diversity.
- On a global scale, the terrestrial island biodiversity of Kiribati is not high, and in fact the diversity of indigenous (non-introduced) flora and fauna is amongst the poorest on earth. Despite these limitations, the nation still hosts some extremely important terrestrial island biodiversity resources and values, as outlined in section 5.
- The main threats to terrestrial island biodiversity in Kiribati include habitat loss due to human population expansion, overexploitation through direct use of biodiversity resources, the impacts of invasive species, and changes in environmental conditions due to climate change.
- The use of unsustainable agriculture practices such as slash and burn, use of inorganic or chemical fertilizers, coupled with the absence of regulatory frameworks and guidelines to control unsustainable agricultural practices including the import and use of chemical fertilizers, although it is considered as a minor issue in Kiribati, but still is also a significant threat to biodiversity in Kiribati.
- While the extremely remote, uninhabited islands of the Phoenix and Line island groups benefit from their remoteness in terms of reduced levels of human impact, they also suffer from a lack of protection, management, compliance and enforcement action – due to their remoteness.
- The marine ecosystems of Kiribati are diverse, including mangroves, seagrasses, atoll lagoons, coral reefs, seamount communities and open ocean pelagic and deep seabed communities, supporting a high diversity of species.
- An outstanding and major credit to the Government of Kiribati was the declaration of the world's first EEZ-scale marine protected area (MPA) – the 408,250 km² Phoenix Islands Protected Area (PIPA) in 2008, which at the time was the world's largest MPA. The PIPA was also declared a World Heritage Area in 2010, and in January 2015, the entire PIPA area comprising of island lagoons, corals reefs and deep open sea was officially closed to commercial fishing. Declaration of the PIPA means that 12% of Kiribati's marine waters are protected, exceeding the Aichi Target 11, which is 10% by 2020. However, there remain major challenges to the effective management of the PIPA.
- The main threats to the marine resources and ecosystems of Kiribati are overexploitation through direct use of biodiversity resources (fishing and collecting for food), especially on the more densely populated islands, coastal mining to extract sand and aggregate for construction, building of causeways between islets which affects hydrodynamics and sediment processes, pollution from land-based sources and the impacts of climate change as discussed above.
- Kiribati is a party to the CBD and subscribes to the CBD's Aichi Targets.
- National biodiversity strategies and actions are outlined in the periodic NBSAPs (latest version 2016–2020, with 2021–2–30 currently being developed), and sub-plans such as the PoWPA (latest version 2010) and the NISSAP (latest version 2015–2020).
- This KIEP does not seek to duplicate these existing arrangements but rather to support their implementation and to address any key gaps.

NATIONAL NEEDS AND PRIORITIES

- The status of both terrestrial and marine biodiversity in Kiribati is poorly documented. There are significant data gaps and there is a need for a comprehensive, integrated, nationally coordinated, long-term and ongoing terrestrial and marine biodiversity assessment and monitoring programme.
- There is a need to extend the protected area system to additional high-priority sites such as the globally unique wetland ecosystems on Teraina Island, including potentially with Ramsar status, and the highly diverse and poorly known deep water reef communities on many of Kiribati's seamounts.
- There is a need to significantly strengthen on-site management, monitoring, compliance and enforcement capacity in the PIPA and the protected area system generally in Kiribati.
- There is a need to continue, expand and strengthen programmes to eradicate existing invasive species throughout Kiribati and to prevent any future bio-invasions.
- There has been some initial success with trialling community-based protected areas at pilot sites, and there is significant scope to support the rollout of community-based protected areas based on traditional/customary biodiversity management measures to additional sites nationally.
- There is a need to address the threat to biodiversity from unsustainable agricultural practices including the use of slash and burn, and use of chemical pesticides.

LONG-TERM GOALS (LTGs) (BY END 2036)

- **LTG-BD1** – National Biodiversity Secured: By end 2036, all key terrestrial and marine ecosystems, habitats and species in Kiribati are effectively protected and sustainably managed, beyond the Aichi targets, through both a national, ecologically representative network of terrestrial and marine protected areas (including community-based protected areas) and through sustainable management of biodiversity resources and values outside of protected areas (including expanded application of traditional and customary biodiversity management frameworks).

INITIAL FOUR-YEAR GOALS (FYGs) (BY END 2024)

- **BD1** – CBD and National Biodiversity Strategy and Action Plans (NBSAPs): By end 2024, the NBSAP 2020-24 has been fully implemented and the next four-year NBSAP has been developed, with no gap from the previous NBSAP. The next NBSAP will explicitly include actions on bio-cultural diversity, actions to address the threat to biodiversity from unsustainable agricultural practices including the use of slash and burn, and use of chemical pesticides. Relevant national reports to the CBD will have also been prepared and submitted to the CBD and its sub-protocols (biosafety etc.).
- **BD2** – National Integrated BD Assessment and Monitoring Programme: By end 2024, Kiribati has developed and begun to implement a comprehensive, integrated, nationally coordinated, long-term and ongoing terrestrial and marine biodiversity assessment and monitoring programme, which links to TA 8 and which supports regular national State of the Environment (SOE) reporting.
- **BD3** – National Ecologically Representative Protected Area Network (PAN): By end 2024, Kiribati has developed and begun to implement a National Ecologically Representative Protected Area Network (PAN) Plan, which amongst other aspects:
 - Meets or exceeds the Aichi targets (noting that through the PIPA Kiribati already exceeds the 10% MPA target by 2%).

- Is representative of all of the key ecosystems, habitats and species types of Kiribati, with adequate areas protected to ensure the ecological viability of each.
- Includes the globally unique wetland ecosystems on Teraina Island, including potentially with Ramsar status, and the highly diverse and poorly known deep water reef communities on many of Kiribati's seamounts (including key biodiversity areas set aside from potential deep seabed mining).
- Includes additional community-based protected areas based on traditional/customary biodiversity management measures at relevant and appropriate sites nationally.
- **BD4** – Building National Biodiversity Management Capacity: By end 2024, Kiribati has developed and begun to implement a National Biodiversity Management Capacity Plan, which significantly strengthens on-site management, research, monitoring, compliance and enforcement capacity in the PIPA and the protected area system generally in Kiribati.
- **BD5** – Invasive Species Management: By end 2024, the NISSAP 2020-24 has been fully implemented, and the next four-year NISSAP has been developed, ready for implementation – with no gap from the previous NISSAP.

POST-2024

- MELAD-ECD in consultation with all relevant partners will develop the next BD four-year plan (post-2024) by the end of June 2024, including a revised and updated SEP and LFA, ready for seamless implementation.
- The focus will be on implementing key plans and actions developed in 2021–2024, towards the LTGs to 2036.
- Development of each subsequent four-year plan will take into account the findings and lessons of the MEL reports from the previous period.

TA 4 Waste Management and Pollution Prevention (WMPP)



LEAD RESPONSIBILITY

- MELAD-ECD for overall policy and national coordination/implementation of the waste management and pollution prevention (WMPP) programme.
- Ministry of Internal Affairs (MIA) and Island Councils for solid waste collection and disposal.
- MLPID for coordination/implementation of the waste management and pollution prevention in the Line and Phoenix groups, with guidance and advice from the MELAD-ECD.
- Marine Division for vessel-sourced pollution and wastes with support from shipping agents.
- Ministry of Education for national school curriculum on sound waste management and pollution control.
- Ministry of Health for healthcare wastes.
- TAK which assists with clean ups.
- Private-sector and local communities/church groups are also active in collection, recycling and resource recovery.
- Ministry of Commerce, Industry and Cooperation (MCIC) and Kiribati Chamber of Commerce and Industry (KCCI) for import and trade.

SITUATION SUMMARY

- Refer section 3.7 above.
- Despite major programmes and projects over the last two decades to address this challenge WMPP remain the most significant internal environmental issue, driven by a continued shift to more consumption-based lifestyles, dependent on the importation of manufactured goods, which generate more and more harmful pollution and wastes.
- Even populations on the outer islands that lead mainly traditional subsistence lifestyles, using natural local products and materials that do not create persistent wastes, are increasingly using plastic products and packaging.
- The severe land constraints of Kiribati and the reliance on sub-surface water lenses as the main freshwater resource are major compounding factors that affect ongoing national efforts to address problems with WMPP in Kiribati.
- There is insufficient land to allow conventional deep landfill for solid waste disposal, and pollutants can easily seep into the highly porous coral substrate, contaminating soils, the underlying water lens and coastal waters.

- National WMPP strategies and actions are outlined in the periodic national plans, with the latest version being the Kiribati Waste Management and Resource Recovery Strategy (KWMRRS) 2020–2030.
- There are also issue-specific plans such as the Kiribati Persistent Organic Pollutants National Implementation Plan (POPsNIP) and the SAICM implementation plan.
- Other government agencies have specific pollution responsibilities, such as the Marine Division, which handles vessel-sourced marine pollution, environmental health and agriculture department for biosecurity wastes and Customs office for banning importation of certain products considered unfriendly to the environment.
- This KIEP does not seek to duplicate these existing arrangements but rather to support their implementation and to address any key gaps.

NATIONAL NEEDS AND PRIORITIES

- Key needs and priorities are driven by the severe land constraints of Kiribati and the reliance on sub-surface water lenses as the main freshwater resource, which are major compounding factors that severely limit available options for WMPP in Kiribati.
- The KWMRRS 2020–2030 embraces the 3R (Reduce, Reuse, Recycle) +Return principle and has six Strategic Goals addressing:
 1. Behavioural change through education and awareness,
 2. Improving data and research,
 3. Institutional and human capacity,
 4. Waste reduction, resource recovery and value chain creation,
 5. Sustainable financing and public-private partnerships; and
 6. Strengthening national governance.
- While the KWMRSS is very comprehensive, there are some key needs and priorities that are not fully addressed, and are therefore included in this KIEP, as supplementary to the KWMRSS. These are:
 - A need to look more closely at waste prevention and reduction at source, including prohibiting the importation of certain waste-generating products and materials, stronger moves to a circular economy and support for a return to the use of traditional, natural products and materials (in support of Component 4 of the KWMRSS).
 - Greater support for WMPP on the outer islands.
 - The strengthening of regulation and control of vessel-sourced marine pollution, as increasing numbers of foreign vessels use Kiribati waters and ports, an issue that is not fully addressed in the KWMRSS (noting that the lead agency for this issue is the Marine Division, not MELAD-ECD).
 - The need to address air pollution issues including from the burning of plastic wastes, including as a fuel for home-cooking fires, which can have serious health implications if fumes are inhaled.

LONG-TERM GOALS (LTGs) (BY END 2036)

- **LTG-WMPP1** – Waste Free Kiribati: By end 2036, Kiribati has reduced the production of wastes that need to be managed to the absolute bare minimum, by prohibiting the importation of certain waste-generating products and materials, a national shift to a circular economy and wherever possible a return to the use of traditional, natural products and materials including consumption of local foods.
- **LTG-WMPP 2** – Waste Safe Kiribati: By end 2036, any and all waste that is still produced in Kiribati despite LTG-PW1, is fully recycled wherever possible and if any disposal is still required, is managed in a manner that is sustainable and safe to human health and the natural environment.

INITIAL FOUR-YEAR GOALS (FYGs) (BY END 2024)

- **WMPP 1** – Coordinating KIEP with KWMRSS and other relevant plans: By end 2024, the timeframes in the KWMRSS and POPsNIP have been revised and amended to coincide with the four-year sub-plans of the KIEP and the four-year KDPs, relevant components of both plans for the 2020-24 period have been fully implemented, and the next four-year components of both plans are ready for implementation, with no gap from the previous plans.
- **WMPP 2** – National Waste Importation Reduction Plan (coordinate with Component 4 of KWMRSS): By end 2024, Kiribati has undertaken a national audit of all imported products and materials to identify those which generate unnecessary waste management demands in the country, and which can be replaced by more sustainable alternatives, and has developed a national plan, including relevant legislation, to prohibit or reduce the importation of such products and materials.
- **WMPP 3** – Pollution and Waste Reduction Through Circular Economy (coordinate with Component 4 of KWMRSS): By end 2024, Kiribati has developed a National Circular Economy Strategy (NCES), ready to commence implementation in the next four-year period. The NCES will identify all possible opportunities to reduce production of pollution and waste in all sectors of the economy, will embrace the principles and targets of responsible consumption and production outlined in SDG 12, and will support a return to the use of traditional, natural materials.
- **WMPP 4** – Building Outer Island Waste Management Capacity (coordinate with Component 3 of KWMRSS): By end 2024, Kiribati has developed and begun to implement an Outer Islands Waste Management Capacity Plan, which incorporates all relevant elements of FYGs PW1 to PW3.
- **WMPP 5** – Strengthening Vessel Pollution and Waste Management Capacity: By end 2024, Kiribati has developed and begun to implement a National Vessel Pollution and Waste Management Capacity Plan, which aims to support the Marine Division, supported by ECD and MFMRD, to strengthen their capacity to regulate, control and respond to pollution and wastes from the increasing number of foreign vessels that use Kiribati waters and ports, and in response to the KV20 and KDP 2021–2024 proposals to build new ports/transshipment hubs at Tarawa and Kiritimati. This plan will include:
 - Ratifying all outstanding and relevant IMO and SPREP Conventions and Protocols (refer section 4.3).
 - Reviewing and updating all of Kiribati's marine legislation to ensure consistency with the IMO regime.
 - Strengthening the Marine Division's capacity to undertake Port State Control (PSC) in relation to IMO pollution and environment conventions.

- Reviewing and updating Kiribati's Marine Pollution Contingency Plan, including ensuring adequate coverage of outer islands.
- Undertaking marine pollution habitat sensitivity and protection priority mapping for all islands, on GIS.
- Developing a National Ports Waste Reception and Management Strategy (including the need to cater for the proposed building of new ports/transshipment hubs).
- Upgrading pollution response equipment, including at Kiritimati.
- Expanding training and capacity building of Marine Division and other relevant personnel.
- **WMPP 6** – Addressing Air Pollution: By end 2024, Kiribati has developed a National Air Pollution Prevention Plan, including measures to raise public awareness about air pollution issues and a regulation to ban the burning of plastic wastes, including as a fuel for home-cooking fires, which can have serious health implications.

POST-2024

- MELAD-ECD in consultation with all relevant partners will develop the next PW four-year plan (post-2024) by the end of June 2024, including a revised and updated SEP and LFA, linked to the KWMRRS and POPSNIP, ready for seamless implementation.
- The focus will be on implementing key plans and actions developed in 2021–2024, towards the LTGs to 2036.
- Development of each subsequent four-year plan will take into account the findings and lessons of the MEL reports from the previous period.



TA 5 Non-living Natural Resources (NNR)



LEAD RESPONSIBILITY

- Freshwater resources: Supply – MISE and Island Councils. Quality – ECD and Health.
- Land resources including land degradation neutrality: MELAD-LMD and ECD.
- Land planning: MELAD-LMD.
- Urban Management and planning: MIA-LGD.
- Mineral resources and coastal management (aggregate coastal mining): MFMRD-Geoscience Division.
- Deep seabed minerals: MFMRD Geoscience Division.
- MLPID for freshwater and other NNR on Phoenix and Line Islands groups.

SITUATION SUMMARY

FRESHWATER

- Refer section 3.4.
- Freshwater is one of the most vital, strategic resources that underpins human life, health and wellbeing, sustains island ecosystems, habitats, species and other environmental resources, supports agriculture and provides development opportunities, “No Water = No Life”.
- The challenges faced in the water security and sanitation sector in Kiribati are amongst the most difficult in the world, driven by natural scarcity, variability and vulnerability of water resources in small island environments, demographic trends towards highly dense urbanisation on South Tarawa and Kiritimati, versus widely dispersed and remote villages on other islands, lack of water infrastructure, over-exploitation and contamination of groundwater resources and the impacts of other human activities.
- Lack of adequate sanitation continues to be a major problem in Kiribati, which has very high per capita rates of water-borne and sanitation-related diseases and illnesses by global standards.
- As with all environmental sectors in Kiribati, climatic change impacts are perhaps the most significant threat to water security, including changes in rainfall patterns, more frequent and prolonged droughts on some islands, and salinisation of groundwater resources through seawater intrusion into island water lenses.
- The previous UNDP-GEF Pacific Integrated Water Resources Management Programme (IWRMP) 2009–2014 carried some extremely helpful foundational work in moving Kiribati towards a more integrated approach to water resource management, where all water supplies and all water uses are managed under a coordinated, integrated framework. However, since closure of the IWRMP the management of freshwater resources in Kiribati appears to be fragmenting back to a non-integrated, uncoordinated approach with different Ministries and Divisions having different responsibilities.

- Water issues are addressed through the multi-agency, whole-of-government National Water Resources Implementation Plan (NWRIP) (latest version 2008-2018); however, there is no new plan post-2018.
- This KIEP does not seek to duplicate these existing arrangements but rather to support their implementation and to address any key gaps, especially in relation to protection of groundwater resources from pollution and contamination and the environmental and ecological aspects of freshwater resources management.
- From an environmental perspective, which is the primary focus of this KIEP, there has been virtually zero consideration of environmental and ecological water flows and needs in Kiribati to date – the entire focus has been on water security for direct human needs. Secure, clean and sustainable freshwater resources are also essential to sustain Kiribati's island ecosystems and biodiversity, and if human uses deplete and degrade freshwater resources, then ecosystems, habitats and biodiversity will also deplete and degrade.
- Some islands of Kiribati have special and unique freshwater ecosystems, habitats and biodiversity, such as the lakes, swamps and canals of Teraina Island in the Line Islands group, which are already beginning to experience salinisation due to climate change.
- The giant swamp taro (bwabwai), which is an essential staple that underpins food security in Kiribati, and an iconic symbol of traditional culture and an ecological feature of many island ecosystems, is also threatened by degradation of freshwater resources.
- Both the KV20 and the KDP 2021–2024 propose significant expansion of agriculture in Kiribati, including in the outer islands, and if not assessed and managed properly, such development could affect environmental and ecological water flows and needs, as many of the outer islands are already severely water-constrained.
- The KV20 and KDP 2021–2024 also propose large-scale dredging and reclamation to create new land for urban, commercial and industrial development. This could increase demands on freshwater resources in Kiribati by orders of magnitude, which is simply not sustainable given the naturally very low base of freshwater security across the country.

LAND RESOURCES AND URBAN PLANNING

- Refer section 3.6.
- For a nation like Kiribati that is comprised of coral atolls made up extremely small islands, land is one of the most scarce, precious and vulnerable resources.
- Land provides physical space for human habitation, commerce, industry and agriculture, and to support terrestrial ecosystems, habitats and biodiversity.
- Kiribati is one of the most land-constrained countries in the world, not only due to the extremely small size of the islands, but also because of their extremely low elevation above sea-level. Most of the atolls are no higher than 3 meters, with a few up to 9 meters. Banaba is an exception with the highest elevation of 81 meters.
- Almost all land in the Gilbert Islands is under private ownership in small hereditary holdings, while in the Line and Phoenix Islands all land is owned by the Government.
- Lack of land use planning – especially in the densely populated areas of South Tarawa and Kiritimati, is causing over-crowding and land degradation.

- Urban expansion is also reducing land available for agriculture and terrestrial habitats and biodiversity.
- There is an urgent need to improve sustainable land use planning in Kiribati, supported by spatial planning.
- Land degradation from coastal erosion also affects non-living resources such as the supply of aggregates, reduces land size and can affect underground water resources.

LAND DEGRADATION NEUTRALITY (LDN)

- LDN is a term used under the United Nations Convention to Combat Desertification (UNCCD), which Kiribati is a party to, and refers to a state where the net amount of healthy and productive terrestrial ecosystem services and functions remains stable over time.
- Land degradation is one of the greatest challenges faced by Kiribati, especially on the urban and semi-urban islands of South Tarawa and Kiritimati.
- Land degradation is being caused by climate change, including erosion from sea level rise, and also local human induced activities such as land clearance for buildings, unsustainable commercial development, waste and pollution and urban sprawl.
- Land degradation can negatively affect food security and livelihoods due to soil infertility, inadequate areas of land for farming and wastes and pollution influencing all resources in the land.

SAND AND AGGREGATE (COASTAL AND LAGOON MINING)

- Refer to section 3.6.
- Socioeconomic development requires construction and maintenance of buildings, roads, ports, airports and other infrastructure, which requires sand and gravel to make concrete.
- These materials are not available from the very limited land resources of Kiribati, so over recent decades they have been obtained by mining in coastal areas, reef flats and atoll lagoons, causing both direct and indirect impacts.
- While the government has started to implement controls on coastal and lagoon mining in some areas, there is a need to improve compliance and enforcement, and to extend controls to other parts of the country.

DEEP SEABED MINERALS

- Refer to section 3.9.
- The deep ocean of Kiribati also has another potentially significant non-living resource – deep seabed minerals.
- Kiribati has potentially viable PMN resources in the east and south of the Line Island group, and over 354 submarine mountains or seamounts, some of which may have potentially viable CRC resources, although additional exploration and resource definition surveys are required.
- Biological surveys of seamounts during the PIPA proposal development found extremely rich deep-water coral communities on the sides of seamounts in the Phoenix group, and any mining of CRC in those areas could have very significant impacts on the unique deep-water biodiversity.
- Kiribati has limited governance and institutional capacity to assess, regulate and manage proposals for DSM that are put forward by outside interests, including in relation to environmental impacts.

NATIONAL NEEDS AND PRIORITIES

FRESHWATER

- The ECD is mandated to protect the quality of potable freshwater supplies, including preventing environmental contamination of underground water supplies – the sub-atoll freshwater lenses that form the main source of freshwater supplies in Kiribati.
- Actions to ensure freshwater security in Kiribati are outlined in the multi-agency, whole-of-government NWRIP and are therefore not repeated in this KIEP.
- However, additional actions are required to ensure long-term protection of freshwater lenses from pollution and contamination, and these are therefore included in the KIEP.
- Additionally, the ecological and environmental aspects of water security have been identified as a major gap in Kiribati, and there is an urgent need to begin to include environmental and ecological water flows and needs in the freshwater security and sustainability equation in Kiribati.
- There is a need to formally protect special and unique freshwater ecosystems, habitats and biodiversity in the country, such as those on Teraina Island (covered under BD, FYG-BD3).
- There is a need to conduct a national Strategic Environmental Assessment (SEA) of freshwater security and sustainability, in relation to the national development proposals contained in the KV20 and KDP 2021–2024 (increasing demands on water from proposed expansion of agriculture, major dredging and land reclamation and associated commercial and industrial development, etc.), and which addresses the long-term protection of environmental and ecological water flows that are needed to support the key ecosystems, habitats and species of Kiribati.

LAND PLANNING AND URBAN MANAGEMENT

- There is a need to develop an integrated and sustainable land-use and urban development plan for each inhabited island in Kiribati, supported by spatial planning.

LAND DEGRADATION NEUTRALITY (LDN)

- As a Party to the UNCCD there is a need to develop, endorse and implement the Kiribati LDN Report including the Kiribati National Action Plan (NAP).
- The LDN Report will collect necessary biophysical and socioeconomic data and establish sound reporting and monitoring systems at national level against the UNCCD strategy, and propose a National LDN Strategy and Action Plan to address land degradation problems in Kiribati.
- There is a need to establish a monitoring and information management system to enable reporting to the UNCCD, linked to the National Integrated Environmental Data Monitoring and Management System, and feeding into the regular National State of the Environment Reports (refer TA 8).

MINERAL RESOURCES (SANDS AND AGGREGATE MINING)

- There is a need to improve compliance and enforcement, and to extend controls to other parts of the country.
- There is a need to undertake a national-level Strategic Environmental Assessment (SEA) of coastal and lagoon mining in Kiribati, and develop a national management plan, supported by spatial planning.

DEEP SEABED MINING (DSM)

- There is a need to undertake a national Strategic Environmental Assessment (SEA) of DSM.
- There is a need to apply stringent EIA and environmental regulatory controls and monitoring to individual DSM proposals.
- There is a need for significant strengthening of the Environment Act to better cater for effective environmental regulation of DSM, and for training and capacity building of MELAD/ECD staff in this area.
- There is a need for Kiribati to consider supporting a possible Pacific moratorium on deep seabed mining until such time that all ecological impacts of the activity are well studied and understood, including through SEA.

LONG-TERM GOALS (LTGs) (BY END 2036)

- **LTG-NNR1** - Groundwater supplies protected: By end 2036, the freshwater resources including groundwater lenses that are needed to supply potable water needs are fully protected from pollution and contamination and are sustainably managed for the long-term, equitable benefit of all I-Kiribati, within an integrated water resources management framework that considers all supplies and all uses of freshwater resources, building on the previous IWRMP.
- **LTG-NNR2** – Ecological water needs protected: By end 2036, the freshwater resources and flows that are needed to protect and sustain all of the key freshwater-dependent ecosystems, habitats and species of Kiribati are fully protected and sustainably managed for the long-term, equitable benefit of all I-Kiribati, within an integrated water resources management framework that considers all supplies and all uses of freshwater resources, building on the previous IWRMP.
- **LTG-NNR3** – All lands sustainably managed: By end 2036, all land on all islands in Kiribati is sustainably managed for the long-term, equitable benefit of all I-Kiribati, and Kiribati has achieved Land Degradation Neutrality (LDN).
- **LTG-NNR4** – All sand and aggregate sustainably managed: By end 2036, the extraction and exploitation of coastal and lagoon sand and gravel resources in Kiribati are sustainably managed for the long-term, equitable benefit of all I-Kiribati.
- **LTG-NNR5** – Deep seabed mining sustainably managed: By end 2036, any potential deep seabed mining in Kiribati is subject to the most stringent EIA and environmental regulatory controls and monitoring and is sustainably managed for the long-term, equitable benefit of all I-Kiribati.

INITIAL FOUR-YEAR GOALS (FYGs) (BY END 2024)

- **NNR1** – National Groundwater Protection Plan: By end 2024, a National Plan has been developed to ensure that the freshwater resources, including groundwater lenses that are needed to supply potable water needs are fully protected from pollution and contamination and sustainably managed for the long-term, within an integrated water resources management framework, ready for implementation in subsequent years.
- **NNR2** – National Ecological Water-needs Assessment and Management Plan: By end 2024, a national assessment of the freshwater resources and flows that are needed to protect and sustain all of the key freshwater-dependent ecosystems, habitats and species of Kiribati has been completed, for each island, and an Ecological Water Needs Management Plan has been developed for each island, within an integrated water resources management framework, ready to commence implementation in the next four-year period.
- **NNR3** – National LDN Report: By end 2024, the 1st National LDN Report has been completed, consistent with UNCCD requirements, which identifies all key problems related to land degradation, proposes the Kiribati National LDN Strategy and National Action Plan to address land degradation problems in Kiribati and establishes a monitoring and information management system to enable reporting to the UNCCD, linked to the National Integrated Environmental Data Monitoring and Management System, and feeding into the regular National State of the Environment Reports (refer TA 8).
- **NNR4** – Island Sustainable Land-use and Urban Management Plans: By end 2024, Sustainable Land-use and Urban Management Plans have been completed for each inhabited island, integrating land-use needs for human habitation/urban development, commerce, industry and infrastructure, agriculture (including traditional subsistence), ecosystem-services and nature conservation, supported by spatial planning, ready to commence implementation in the next four-year period.
- **NNR5** – Aggregate Mining SEA: By end 2024, a national-level SEA of all coastal and lagoon sand and aggregate mining has been completed, and used to inform development of a National Sustainable Aggregate Policy and Management Plan, for each relevant island, ready to commence implementation in the next four-year period.
- **NNR6** – National DSM SEA and Capacity Plan: By end 2024, a national-level SEA of potential DSM in Kiribati has been completed and used to inform development of a National DSM Capacity Plan designed to significantly strengthen the capacity of ECD and MFMRD in environmental governance, EIA and regulatory control, compliance, and monitoring of DSM, ready to commence implementation in the next four-year period.

POST-2024

- MELAD-ECD in consultation with all relevant partners will develop the next NNR four-year plan (post-2024) by the end of June 2024, including a revised and updated SEP and LFA, ready for seamless implementation.
- The focus will be on implementing key plans and actions developed in 2021–2024, towards the LTGs to 2036.
- Development of each subsequent four-year plan will take into account the findings and lessons of the MEL reports from the previous period.

TA 6 Ocean Health and Sustainable Blue Economy (OHSBE)



LEAD RESPONSIBILITY

- MFMRD for sustainable fisheries and marine resource development, including fisheries licencing and compliance, conserving and managing fish stocks and developing sustainable blue economy.
- ECD for marine biodiversity, coastal and marine development activities and land-based sources of marine pollution.
- MELAD-LMD for foreshore management and land-based sourced of marine pollution.
- Marine Division for vessel-source pollution and wastes.
- Geo-Science Division for deep seabed mining.
- Meteorological Service for ocean data, monitoring and modelling to support policy and management decision-making.
- MPLID as islands in the Line and Phoenix groups have very high value marine biodiversity resources, and MPLID has a role to play in protecting and managing these resources.
- Tourism Authority of Kiribati because tourism is a cross cutting sector supporting and encouraging marine based activities- MPA conservation, aqua tourism.

SITUATION SUMMARY

- Over 99% of Kiribati's national area is ocean, with a sea to land ratio of 5,000 to 1.
- With an Exclusive Economic Zone (EEZ) that spans 3.5 million km² of ocean, almost half the size of the Australian continent, and traditional island- and marine-based livelihoods that have been ecologically sustainable for millennia, the people of Kiribati and other Pacific island countries are increasingly referring to their nations as Big Ocean Sustainable States (BOSS), rather than SIDS.
- The atoll lagoons, mangroves, seagrasses, coral reefs, deep ocean environments and associated fisheries resources constitute the most significant natural and economic resources and ecological values of Kiribati.
- The 354 seamounts spread throughout the Kiribati EEZ are another important but largely unstudied feature of the ocean landscape, providing a range of resources and benefits to Kiribati. Many have elevated biodiversity compared to surrounding deep-sea areas.
- An outstanding and major credit to the Government of Kiribati was the declaration of the world's first EEZ-scale marine protected area (MPA) – the 408,250 km² Phoenix Islands Protected Area (PIPA) in 2008, which at the time was the world's largest MPA. The PIPA was also declared a World Heritage Area in 2010, and in January 2015, the entire PIPA area comprising of island lagoons, corals reefs and deep open sea was officially closed to commercial fishing. Declaration of the PIPA means that 12% of Kiribati's marine waters are protected, exceeding the Aichi Target 11, which is 10% by 2020 (refer TA 3-BD).

- However, there remain major challenges to the effective management of the PIPA and significant challenges relating to marine biodiversity protection, conservation and management throughout the rest of Kiribati.
- The MFMRD has developed a National Fisheries Policy and a National Coastal Fisheries Road Map. However, these are subject to some limitations as outlined in section 4.5, Table 5, including limited embracement of EBM and lack of consideration of the environmental impacts of fisheries, and as sector-specific plans are not part of a broader, integrated ocean governance framework that considers and accounts for all marine users and uses.
- There are a number of significant existential and potential threats to the long-term health and sustainability of Kiribati's marine ecosystems and resources, including climate change, overexploitation of living marine resources, land- and sea-based sources of marine pollution, proposed major dredging and land reclamation, and potential deep seabed mining.
- Overall, the status of marine biodiversity in Kiribati is poorly documented, with even more significant data gaps, than for terrestrial biodiversity.
- The MACBIO project calculated a marine ecosystem service valuation for Kiribati of >AU\$400 million in 2013, or double the national GDP, which was AU\$216 million in 2014.
- Development of an Ocean Health and Sustainable Blue Economy (OHSBE) which promotes the development of coastal and marine-based businesses and industries, while also ensuring that they are ecologically sustainable and that the health of the ocean and marine biodiversity are protected, perhaps holds the most realistic prospect for a sustainable and independent economic future for Kiribati.
- Further background, rationale and justification are contained in a separate Briefing Paper on Ocean Health and OHSBE in Kiribati provided to ECD.

NATIONAL NEEDS AND PRIORITIES

- There is a need for GoK to more overtly recognise the significance, importance, value and potential of the marine environment, ocean resources and the blue economy, and to allocate greater effort and resources to their protection and sustainable management, including in relation to environmental aspects.
- There is a need to develop a National Integrated Ocean Governance Policy, and an Ocean Health and Sustainable Blue Economy (OHSBE) Strategy and Action Plan, which coordinates all relevant government ministries and agencies, and all ocean-related sectors, and which seeks to develop a sustainable blue economy, while also ensuring that the health of the ocean and marine biodiversity are protected. These needs have been identified through the MACBIO Project and are included in Kiribati's GEF-7 STAR Project Information Form (PIF) and are also consistent with the programming directions under GEF-8.
- There is a need to strengthen the marine scientific and technical expertise of all ECD units to assist in undertaking the marine aspects of SEA, EIA and environmental regulatory control and monitoring of all relevant marine industries, including emerging proposals like major dredging and land reclamation, expansion of mariculture and development of DSM. This could include consideration of the eventual formation of a dedicated Marine Environment Protection Unit (MEPU) within ECD. If established, the MEPU should work closely and cooperatively with MFMRD, Marine Division and other ocean-related agencies in a coordinated, whole-of-government approach to ocean governance and marine environment protection.

LONG-TERM GOALS (LTGs) (BY END 2036)

- **LTG-OHSBE1** – Sustainable Blue Economy Developed and Ocean Health Protected: By end 2036, sustainable blue economy sectors have become significant contributors to the independent economic future of Kiribati, all I-Kiribati people are benefitting equitably from well-developed sustainable blue economy sectors, while the health of the ocean, marine biodiversity and marine resources are protected and sustainably managed.

INITIAL FOUR-YEAR GOALS (FYGs) (BY END 2024)

- **OHSBE1** – National Integrated Ocean Governance Policy: By end 2024, a National Integrated Ocean Governance Policy which coordinates all relevant government ministries and agencies, and all ocean-related sectors, has been developed and adopted, ready to commence implementation in the next four-year period.
- **OHSBE2** – National Ocean Health Sustainable Blue Economy (OHSBE) Strategy and Action Plan: By end 2024, a National OHSBE Strategy and Action Plan, which seeks to develop all relevant sectors of the sustainable blue economy (refer separate OHSBE Briefing Paper available from ECD), while also ensuring that the health of the ocean and marine biodiversity are protected, has been developed and adopted, ready to commence implementation in the next four-year period.
- **OHSBE3** – ECD Marine Capacity Strengthened: By end 2024, all ECD units will have received training and capacity building to strengthen their marine expertise and capabilities to undertake SEA and EIA and environmental regulatory control and monitoring of all relevant marine industries, including emerging proposals like major dredging and land reclamation, expansion of mariculture and development of DSM. By end 2024 procedures are also in place for ECD to work closely and cooperatively with MFMRD, Marine Division and other ocean-related agencies in a coordinated, whole-of-government approach to ocean governance and marine environment protection, within the framework of the National Integrated Ocean Governance Policy developed under FYG-OHSBE1.
- **OHSBE4** – ECD Marine Environment Protection Unit (MEPU): By end 2024, ECD has undertaken an assessment of the need or otherwise for the formation of a dedicated MEPU within ECD.
- **OHSBE5** – Ocean Science and Physical Oceanography: By end 2024, the Kiribati Meteorological Service (KMS) has received capacity building, equipment and tools to improve ocean science, data, monitoring, modelling, predictions and early warning, to support policy and management decision-making on climate change mitigation and adaptation in Kiribati.

POST-2024

- MELAD-ECD in consultation with all relevant partners will develop the next OHSBE four-year plan (post-2024) by the end of June 2024, including a revised and updated SEP and LFA, ready for seamless implementation.
- The focus will be on implementing key plans and actions developed in 2021–2024, towards the LTGs to 2036.
- Development of each subsequent four-year plan will take into account the findings and lessons of the MEL reports from the previous period.

TA 7 Environmental Education, Communication and Awareness (EECA)



LEAD RESPONSIBILITY

- MELAD-ECD.
- Ministry of Education for the integration of relevant environment issues into the national curriculum.
- Tourism Authority of Kiribati to assist in the implementation of training and promotion programmes.
- MPLID for outreach to communities in Phoenix and Line Islands.
- Island Councils to provide effective support to environment awareness and education programmes on the islands.
- National media organisations (radio, TV, etc.) for media training programmes and to support effective delivery of key messages.
- Churches, faith-based organisations (FBOs) youth and community groups play an important role in environment campaign and outreach programmes.
- NGOs, which often play a key role in awareness and education programmes.

SITUATION SUMMARY

- A wide variety of formal and informal environmental communication, education and public awareness raising programmes and projects have been implemented at national to local community levels on various environmental issues in recent decades.
- Despite a long history of environmental education and awareness programmes and projects in Kiribati, apart from climate change, the level of environmental awareness amongst the general population appears to still be limited, as unsustainable practices are still widespread, especially in relation to waste management and sanitation.
- Apart from the general public, there appears to be a very low level of awareness about environmental regulatory obligations amongst private businesses and industries in Kiribati, as many continue to carry out activities that are in breach of environmental laws.
- In the previous KIEP 2013, environmental communication, education and public awareness were allocated as an activity under each TA, which limited overall coordination. This meant that under some TAs environmental education and awareness made good progress while under other TAs there was less progress.
- Some progress has been made on formal environment outreach programmes that have incorporated some issues, especially climate change, into the national education curriculum, but only for some grades. There is a need for a more comprehensive and systematic approach where all environmental issues are included, in a staged and interlinked approach for all grades through both kindergarten, primary, junior secondary, secondary, and tertiary schools.

- In order to achieve greater coordination and consistency of messaging, under this KIEP, environmental communication, education and public awareness for all environmental issues, including climate change, biodiversity, pollution and waste, non-living natural resources and the marine environment, are integrated into this stand-alone TA.

NATIONAL NEEDS AND PRIORITIES

- There is a need to carry out Knowledge, Practice and Attitude (KAP) surveys (both baseline and future repeat surveys) for various sectors of society, so as to provide data on baseline levels of environmental awareness (of all issues), and to monitor changes in awareness of each sector over time (also noting that the act of undertaking KAP surveys can itself help improve environmental awareness).
- There is a need to explore, with a view to introduce and resource, the inclusion of the ecological theology and green pastor mechanism.
- The KAP surveys will also assist in identifying awareness gaps and needs, and thus assist the targeting environmental education, communication and awareness activities on certain issues towards certain sectors of society.
- There is a need to develop and implement specific programmes to educate private businesses and industries in Kiribati about their environmental regulatory obligations under relevant laws.
- There is a need for a more comprehensive and systematic approach to including environmental issues in the national education curriculum, where all environmental issues are included, in a staged and interlinked approach for all grades through both primary and secondary schools.
- There is a need to make greater use of innovative communication mediums including drama groups, music and songs, art competitions, church groups, community groups, internet and social media.
- There is a need for environmental education, communication and awareness programmes to give increased attention to promoting traditional/customary approaches to sustainable environmental and natural resource management.

LONG- TERM GOALS (LTG) (BY END 2024)

- **LTG-EECA1** – National Environmental Awareness: By end 2036, all sectors of society in Kiribati are fully aware of all the main environmental issues that affect the country, of the best-practice measures for addressing each issue, of their legal obligations under relevant environmental laws and regulations, and of traditional/customary approaches to sustainable environmental and natural resource management.

INITIAL FOUR-YEAR GOALS (FYGs) (BY END 2024)

- **EECA1** – Knowledge, Attitudes and Practice Survey: By end 2024, baseline data on the levels of environmental awareness of all environmental issues are successfully monitored over time through Knowledge, Attitudes and Practice Surveys, to see changes on the levels of environmental awareness of all sectors and to be able to identify gaps and needs on number of national awareness programmes.

- **EECA2** – Improved awareness of Private Sectors: By end 2024, all private sectors are fully aware and comply with all environmental regulations through implementation of best management practices on their operations to help address environmental issues.
- **EECA3** – Integration of environmental issues into the national education curriculum: By end 2024, all primary and secondary school students are fully aware of environmental issues and are able to perform best environmental management practices at their schools, communities and homes.
- **EECA4** – Implementation of Innovative Communication medium: By end 2024, almost all communication mediums are used to effectively disseminate environmental information to all levels of society.

POST-2024

- MELAD-ECD in consultation with all relevant partners will develop the next EECA four-year plan (post-2024) by the end of June 2024, including a revised and updated SEP and LFA, ready for seamless implementation.
- The focus will be on implementing key plans and actions developed in 2021–2024, towards the LTGs to 2036.
- Development of each subsequent four-year plan will take into account the findings and lessons of the MEL reports from the previous period.



TA 8 Environmental Information and Data Management (EIDM)



LEAD RESPONSIBILITY

- MELAD-ECD to initiate, plan, execute, monitor, control and secure the Kiribati Environment Management Information System to support environmental reports and decision-making.
- MELAD-ALD to assist in food security information related to agriculture, livestock and biosecurity.
- MELAD-LMD to collaborate with ECD spatial planning unit to enhance environment spatial information.
- National Statistics Office for random sampling methodology and national data/information support.
- MISE to assist in water salinity, quantity and infrastructure information.
- MHMS for health statistics, water safety and nutrition.
- MFMRD for marine conservation, research and geoscience data.
- MICTTD to support information technology training and capacity building.
- Meteorological service for climate and ocean, monitoring and modelling.
- State Owned Enterprises for waste and pollution data.
- Ministry of Internal Affairs- Local Government for islands management plans, environment surveys and climate change vulnerability assessments.

SITUATION SUMMARY

- In developing a long-term, integrated, national environmental policy and strategy, like this KIEP, it is important to understand the overall state of the environment, through state of the environment (SOE) reporting, so as to identify what resources and values need to be protected, assess the status and trends of various environmental parameters and indicators, in terms of quality and health; and determine whether environmental conditions and values are worsening, remaining static or improving, in relation to defined targets.
- Undertaking regular SOE assessment and reporting is particularly useful for assessing the effectiveness of policies, strategies and programmes like this KIEP. Ideally there should be feedback loops whereby the policy, strategy or programme can be adjusted and refocused in response to the environmental status and trends that are identified by the SOE report.
- A significant challenge to undertaking reliable, rigorous and meaningful SOE assessments is the availability of reliable scientific data on the various environmental parameters being assessed, and the setting of targets and indicators that are supported by the data that are SMART (specific, measurable, achievable, relevant and time-bound).

- Unfortunately, in the case of Kiribati, only two SOE reports have been undertaken, both with the assistance of SPREP. The first was undertaken in 1994 and the most recent was for the period 2000-2004, over 18 years ago.
- Additionally, SOE assessment and reporting in Kiribati is constrained by a general lack of reliable and rigorous data on the full range of environmental parameters that need to be monitored and assessed over time.
- In addition to a lack of reliable and rigorous data, there is no centrally coordinated, national environmental data management system and information clearing house, and a lack of technical capacity in environmental data management, analysis and reporting, including in use of GIS and spatial planning.

NATIONAL NEEDS AND PRIORITIES

- There is a need to develop and agree on a full suite of SMART environmental data parameters and indicators for each environmental sector, including climate change (linking to the existing Kiribati Integrated Vulnerability Assessment (KIVA) Database), biodiversity, pollution and waste, non-living natural resources and the marine environment, to support national environmental management planning and SOE reporting.
- There is a need to develop and implement a national, integrated environmental data monitoring and management system, which collects, integrates, manages, analyses and reports data on the full range of SMART environmental parameters and indicators that are needed to support regular (every four years) national SOE reports.
- There is a need to use this data to undertake regular (every four years) national SOE reports.
- There is a need for greater cooperation and coordination on environmental data collection, management and analysis issues between MELAD-ECD and other Divisions of MELAD, other Ministries and agencies that collect, manage and/or use environmental data such as MFMRD and Meteorology Office, and the National Statistics Office, within the framework of a national, integrated environmental data monitoring and management system.
- There is a need for a staff training and capacity building programme in environmental data collection, management, analysis and reporting, for MELAD and all other Ministries and agencies that collect and manage, and/or use environmental data, including in use of GIS and spatial planning.
- There is a need to update Kiribati's protected area data on the World Database on Protected Areas (WDPA), either at pre-defined intervals or as new data becomes available.

LONG-TERM GOALS (LTGs) (BY END 2036)

- **LTG-EDIM1** – Information and Knowledge for More Effective Environmental Management: By end 2036, all environmental planning, assessment and management activities in Kiribati are fully supported and informed by the best available data and information on SMART environmental parameters and indicators, and national SOE reports are undertaken every four years, with feedback loops whereby environmental policies, strategies and programmes can be adjusted and refocused in response to the environmental status and trends that are identified by the SOE reports.

INITIAL FOUR-YEAR GOALS (FYGs) (BY END 2024)

- **EIDM1** – SOE parameters and Indicators: By end 2024, all environment parameters and indicators from all environmental sectors have been identified, assessed, monitored and integrated within the environment data monitoring and management system to feed SOE reports in the next four-year period.
- **EIDM2** – Integrated environmental data monitoring and management system: By end 2024, an integrated environmental data monitoring and management system is developed, used for extracting data needed for SOE reports, and easily accessible to ECD staff, Island Councils and other relevant GoK personnel via offline portal with security measures put in place.
- **EIDM3** – Environment spatial planning unit: By end 2024, an Environment spatial planning unit is established and fully functional in providing terrestrial, coastal, cultural, historical and other thematic maps needed for SOE reports, climate change impacts, land degradation, and other visual informative reports.
- **EIDM4** – Staff training and capacity building: By end 2024, EDIMS-ECD staff have the knowledge and skills in system development, database development, networking, cyber security, data security, data mining, GIS mapping, drone operation with license and ability to confidently use an integrated environmental data monitoring and management system to import and export data through training, while all ECD staff are able to use the system.

POST-2024

- MELAD-ECD in consultation with all relevant partners will develop the next EIDM four-year plan (post-2024) by the end of June 2024, including a revised and updated SEP and LFA, ready for seamless implementation.
- The focus will be on implementing key plans and actions developed in 2021–2024, towards the LTGs to 2036.
- Development of each subsequent four-year plan will take into account the findings and lessons of the MEL reports from the previous period.

9 STRATEGIC ENVIRONMENT PLAN (SEP) 2021–2036

The Strategic Environment Plan (SEP) is designed to “operationalise” the KIEP and constitutes a work plan presented in the form of a Logical Framework (LogFrame) for each TA. It is structured around the TA Long Term Goals (LTGs) to the end of the KIEP in 2036, and initial Four-Year Goals (FYGs) for the initial four-year period 2021 to the end of 2024 (consistent with the four-year period of the KDPs). The LFA for each TA contains details on:

- a. The baseline situation in 2020.
- b. The targets that need to be met to achieve the FYGs.
- c. The indicators that should be used to measure if targets are achieved.
- d. The means of verifying the indicators (data sources).
- e. The technical activities that need to be implemented to achieve the FYGs.
- f. The inputs (budget and other resources) that are needed to achieve each FYG (to assist GoK in allocating and securing the necessary budget and resources, both from its own budget and external sources).
- g. The Lead Agency responsible for achieving each FYG and the Supporting Agencies.

The SEP does not contain completed LogFrames for the four-year periods after the end of 2024 to the end of 2036 (2025–2028, 2029–2032 and 2033–2036). This is because it is difficult to predict the situation that far ahead. The actions required in subsequent periods will depend on how much progress has been made with the preceding period, the central government might change national priorities in the subsequent KDP, or the government might change (Kiribati has a four-year election cycle).

It is intended that MELAD-ECD in consultation with all relevant partners will develop the next four-year sub-plan (2025–2028), including a revised and updated SEP/LogFrames, by the end of June 2024, ready for seamless implementation after 2024. This will be a fairly straightforward exercise of updating the existing LFA for the forthcoming four-year period. The focus for the next period will be on implementing key plans and actions developed in the previous period, towards the LTGs to 2036. This process would be repeated for the 2029–2032 and 2033–2036 four-year periods.

The approach means that the KIEP is a “living document” wherein the SEP/LogFrames are revised and refreshed every four years, keeping it aligned with the four-year KDPs and responsive to local, national, regional and global changes and developments.

Each four-year review of the SEP/LogFrames will be led by ECD but undertaken in full consultation with all relevant partners, through the KIOC and relevant TA committees and working groups.

Development of each subsequent four-year plan will take into account the findings and lessons of the MEL reports from the previous period.

TA1 Environmental Governance (EG)

LONG-TERM GOAL (LTG) (BY END 2036)

LTG-EG1 – Integrated EG Regime: By end 2036, Kiribati has a fully developed, multi-faceted, modern, integrated EG regime that effectively incorporates best practices from the global, regional, national and local-level/traditional EG regimes, and delivers an ecologically sustainable future for the people of Kiribati.

FOUR-YEAR GOAL (FYG) (BY END 2024):	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
EG1 – MEAs: By end 2024, Kiribati considers ratification and where appropriate, ratifies relevant global and regional MEAs that it has not yet ratified, but which will bring benefits to Kiribati, including CITES and some key IMO conventions, and most of the MEAs that are administered by SPREP.	- Refer Section 4.3, Tables 3 & 4. - Not ratified: CITES. - OPRC. - OPRC-HNS. - HNS. - Fund (2003). - Noumea (Convention & Protocols). - Apia Convention.	EG1.1: MEA gaps analysis, identification of benefits to Kiribati and recommendations to Govt. on which MEAs to ratify prepared by mid-2022. EG1.2: Govt approval to ratify each relevant MEA by end of 2022. EG1.3: Ratification documents prepared and submitted to MEA secretariats by end 2023. EG1.4: National instruments of entry into force in place by end 2024. EG1.5: All MEAs listed are ratified and in force in Kiribati by end 2024. EG1.6: Capacity-building, enabling environment and resourcing strategy to support MEA implementation developed by end 2024, for implementation post-2024.	- Instruments of MEA accession/ ratification. - National instruments of entry into force domestically. - National enabling environment, including capacity and resourcing, for each new MEA ratified, is in place.	Physical viewing of output documents.	- Undertake MEA gaps analysis, identify benefits to Kiribati and prepare recommendations to Govt. on which MEAs to ratify. - Prepare submissions to Cabinet and Parliament and gain approval for accession to each MEA. - Prepare ratification documents. - Lodge with relevant MEA secretariats. - Prepare and process national instruments of entry into force domestically. - Develop capacity-building, enabling environment and resourcing strategy to support MEA implementation.	200K	MFAI	- MELAD-ECD. - Marine Division (re. IMO Conventions).

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024):	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
EG2 – National EG Regime Update: By end 2024, Kiribati has undertaken a comprehensive review of the full suite of environmental protection, nature conservation and natural resource management laws and refreshed and updated them into a more integrated, streamlined and simplified set of modern laws that are consistent with all relevant MEAs, and incorporate best principles of Ecological Sustainable Development (ESD), including the ecosystem-based approach, precautionary principle, polluter pays and users pays and carrying capacity limits principles, as well as CIA and SEA: (Note: update to marine legislation to be consistent with IMO regime and is separate under FYG PW5 – as subject matter is specialised).	- Kiribati has a plethora of varied, unrelated and uncoordinated laws ranging from before independence through to modern environmental legislation which are disjointed and need better streamlining and integration. - MEAs are not fully reflected in national laws. - Community-based and traditional/customary EG frameworks are not mandated.	EG2.1: Comprehensive review with recommendations completed by end 2022. EG2.2: New suite of integrated, linked and coordinated environmental laws that meet the criteria in the FYG-EG2 are drafted, reviewed and agreed by GoK by end 2023. EG2.3: New suite of environmental laws passed by parliament by end 2024.	- Review report completed and approved by ECD. - Laws drafted. - Laws passed.	Physical viewing of output documents.	- Establish environmental law review committee to oversee process. - Commission legal review consultancy. - Commission legislative drafters and subject matter experts to draft new laws. - Run consultation. - Finalise new laws based on consultation inputs. - Pass through Cabinet and Parliament.	1M	MELAD-ECD	- MoJ. - All Ministries that administer laws with environmental elements.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024):	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
EG3 – CIA & SEA: - By the end of 2024, MELAD-ECD and relevant stakeholders are fully equipped with the capacity to implement CIA and SEA. - By end of 2024, as part of the capacity-building process, with technical and other support from SPREP, ECD has undertaken 'pilot' CIA and SEA of major new national development initiatives, such as major dredging and land reclamation, significant expansion of agriculture on outer islands and deep seabed mining, and others that may arise.	- No legislation on CIA and SEA. - No previous experience at ECD in carrying out CIA and SEA. - EIA review process being carried out for screening development projects at the national, island and local community level.	EG3.1: Gap and needs analysis on the current EIA review process against the CIA and SEA requirements by end 2021. EG3.2: Develop grading criteria for designating sectors and projects that require CIA and EIA by end 2022. EG3.3: Training, capacity-building and institutional strengthening, with support from SPREP, of ECD and other relevant GoK staff in CIA/SEA methods completed by end 2023 (to include practical training through involvement in undertaking EG3.4). EG3.4: 'Pilot' CIAs/SEAs conducted for two high priority national development proposals (e.g., proposed major dredging and land reclamation, significant expansion of agriculture on outer islands), including practical involvement of GoK staff for 'on-the-job' training, by end 2024. EG3.5: Additional CIAs/SEAs conducted as and when required (e.g., on DSM, mariculture expansion etc.). EG3.6: New suite of environmental laws includes provisions on CIA/SEA ready by end 2024 (covered under FYG EG2).	- Training completed and training reports produced and approved by ECD. - CIA/SEAs enabling environment established at the MELAD ECD level. - Outreaching of the CIA/SEAs with all key stakeholders is undertaken at the national level. - CIA/SEAs procedures and processes are formally established within MELAD ECD. - CIA/SEAs training manual, completed and CIA/SEA reports produced and approved by ECD. - Relevant Laws passed under EG2 include CIA/SEA.	Physical viewing of output documents.	- Commission CIA/SEA experts to design and deliver training and undertake initial two 'Pilot' CIAs/EAs (with involvement of GoK staff for 'on-the-job' training). - Trained GoK team to undertake additional CIAs/SEAs as required.	500K	MELAD-ECD	- MFMRD. - Other GoK staff involved in EIA.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024):	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
EG4 – Compliance & Enforcement (C&E): By end 2024, national capacity for environmental compliance and enforcement has been significantly strengthened, including on the outer islands.	▪ ECD has a dedicated C&E Unit however they are based on Tarawa and rarely get to outer islands. ▪ The WCU based on Kiritimati also has compliance functions, but are logistically constrained to get to other islands, including in PIPA. ▪ All relevant staff require additional and ongoing training in C&E. ▪ There is a lack of awareness by GoK prosecutors, magistrates and judges about environmental laws, which limits effectiveness of prosecutions and penalties.	EG4.1: Cooperative logistical arrangements in place with other relevant ministries (e.g., Police patrol boat) and development partners to resource and facilitate increased visits by C&E Unit and WCU to outer islands on a regular basis, by end 2021. EG4.2: Relevant personnel on outer islands (e.g., Police, Island Council staff, traditional leaders) appointed as inspectors under Environment Act, by end 2022. EG4.3: Comprehensive, annual environmental C&E training programme designed and underway, including for all appointed inspectors on outer islands, by end 2023. EG4.3: Awareness training on environmental offences and penalties for prosecutors, magistrates and judges designed and underway, by end 2023. EG4.4: Establish a specialist court for environmental issues – a ‘Green Court’ – to prosecute offences under the new Environment Act and other environment-related laws and regulations in Kiribati, by end 2023.	▪ MoU in place between ECD and other relevant ministries and development partners for cooperative outer island logistical arrangements. ▪ Outer island staff officially appointed. ▪ Training courses and rolling programme designed, developed and approved by ECD. ▪ Training completed and training reports produced and approved by ECD. ▪ Green Court established and operational.	Physical viewing of output documents.	▪ Establish multi-agency Environmental C&E Task Force to develop MoU and coordinate logistical arrangements for C&E visits to outer island. ▪ Complete necessary official processes to appoint outer island staff as inspectors. ▪ Commission consultancy to design and develop comprehensive, annual environmental C&E training programme. ▪ Implement annual training. ▪ Commission consultancy to design and develop environmental awareness programme for prosecutors, magistrates and judges. ▪ Implement annual awareness programme. ▪ Work with Ministry of Justice and judiciary to develop and establish Green Court system.	1M	MELAD-ECD	▪ MoJ. ▪ Police. ▪ Island Councils. ▪ MFMRD. ▪ MLPID for Phoenix & Line Islands. ▪ Other GoK staff involved in C&E.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024):	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
EG5 – Environment Licencing Management System (ELMS): By end 2024, Kiribati has an electronic environmental licencing system, including online licence application portal and licencing database for ECD environmental licences, scientific research licences and WCD licences.	ECD's environmental licencing system is paper-based.	▪ EG5.1: ELMS needs assessment and implementation plan developed by end 2022. ▪ EG5.2: ELMS developed and in place, including training and capacity-building of ECD staff, by end 2024.	▪ ELMS needs assessment and implementation plan developed. ▪ ELMS in place and operating effectively.	Output documentation.	▪ Secure resources to develop ELMS needs assessment and implementation plan. ▪ Commission development of ELMS needs assessment and implementation plan. ▪ Secure resources to implement the ELMS. ▪ Implement the ELMS including training and capacity-building of ECD staff.	200K	MELAD-ECD	MICTTD
EG5 – EG Awareness: By end 2024, all businesses and the community are fully aware of their environmental regulatory obligations under Kiribati environmental protection, nature conservation and natural resource management laws:	Incorporated into TA 7 – EECA under an integrated, whole-of environment, environmental education, communication and awareness strategy.							

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024):	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
EG6 – Transnational Environmental Crime: By end 2024, MELAD-ECD and relevant stakeholders have received training and capacity building to allow Kiribati to assess and raise awareness of transnational environmental crime and start working cooperatively with partner countries, INTERPOL and other organisations to prevent, deter, detect and respond to transnational environmental crime, especially with regard to marine resources and endangered species.	▪ Kiribati does not have explicit arrangements in place to address potential transnational environmental crime. ▪ Existing cooperative arrangements for fisheries enforcement (e.g., FFA and PNA) provide useful models and templates that could be extended to environment and biodiversity issues.	▪ EG6.1: Scoping study on potential transnational environmental crime in Kiribati, with action plan, completed by end 2022. ▪ EG6.2: Links to existing cooperative arrangements for fisheries enforcement (FFA and PNA) as models for addressing transnational environmental crime, established by end 2023. ▪ EG6.3: Full system for addressing transnational environmental crime established and operational by end 2024.	▪ Scoping study & action plan report completed and approved by ECD. ▪ Programme implementation reported in progress reports.	Physical viewing of output documents.	▪ Establish multi-agency Transnational Environmental Crime Task Force to oversee progress on EG6. ▪ Commission consultancy to undertake scoping study and develop action plan. ▪ Implement action plan.	200K	MELAD-ECD	MoJ. MFAI. Police. MFMRD. MPLID to support such issues in Phoenix & Line Islands groups.
EG7 – Traditional/ Customary EG Frameworks: By end 2024, Kiribati has begun to implement programmes to raise awareness and build capacity to protect, revive, promote, strengthen and expand local-level, community-based and traditional and customary EG frameworks, especially on the outer islands.	▪ There are local-level, community-based and traditional/ customary EG frameworks that remain intact and operational on some islands. ▪ However, there is no formal programme to record, preserve, protect, resurrect, promote, strengthen and expand these nationally, and without such a programme they may reduce over time.	▪ EG7.1: National study and inventory of traditional EG practices and frameworks completed by end 2021. ▪ EG7.2: National programme to protect, resurrect, promote, strengthen and expand traditional EG frameworks developed and approved by end 2022. ▪ EG7.3: Implementation of national programme underway by mid-2023.	▪ National study and inventory report completed and approved by ECD. ▪ National programme developed and approved by ECD. ▪ Programme implementation reported in progress reports.	Physical viewing of output documents.	▪ Establish multi-agency Traditional EG Reference Group to oversee progress on EG7 and as a vehicle for consultation. ▪ Commission consultancy to undertake national study and inventory. ▪ Commission consultancy to develop national programme. ▪ Implement national programme.	2M	MELAD-ECD	▪ Ministry of Culture. ▪ Island Councils. ▪ Island communities, leaders and elders.

TA2 Climate Change (cc)

LONG-TERM GOALS (LTGs) (BY END 2036)

Within the overarching framework of the National Climate Change Policy (including future versions):

LTG-CC1 – Global Mitigation: By end 2036, Kiribati has actively contributed to campaigning and negotiations at the UNFCCC Paris Agreement and subsequent agreed measures to encourage the global community to stabilize GHG emissions and achieve a climate-safe future

LTG-CC2 – National Mitigation: By end 2036, Kiribati has reduced its own GHG emissions to the maximum extent possible, in accordance with its periodic INDC plans and the KIER 2017-2025 (and subsequent versions).

LTG-CC3 – National Adaptation: By end 2036, all islands and all socioeconomic sectors in Kiribati are fully adapted and resilient to the impacts of climate change.

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASLINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
CC1 – Global Mitigation: By end 2024, Kiribati has continued to actively participate in UNFCCC and other international fora, in close cooperation with other SIDS, to lobby major industrial economies to reduce global GHG emissions. GoK also continues to monitor global emissions status through IPCC reports and NDC synthesised reports for potential over-shooting the 1.5 degrees global goal.	GoK is already active in this regard and the goal is to continue this level of activity.	CC1.1: UNFCCC and related international agreements to reduce global GHG emissions reflect the concerns of Kiribati and other SIDS.	Regular participation by GoK delegations in UNFCCC and related meetings.	Meeting reports.	- Secure resources to allow participation in UNFCCC and related negotiations. - Consult with other SIDS to develop coordinated, unified negotiating positions. - Attend meetings and make effective inputs.	200K	OB	- MELAD-ECD - MFED
CC2 – National Mitigation: By end 2024, Kiribati has fully implemented the INDC Plan 2016 and developed and implemented relevant subsequent versions, and substantially completed implementation of the KIER 2017-2025.	- Under INDC Kiribati aims to improve energy efficiency and enhance the use of renewable resources. - KIER 2017-2025 is underway, coordinated by MISE.	CC2.1: The 2021-2024 components of the INDC are fully implemented by end of 2024. CC2.2: The 2021-2024 components of the KIER are fully implemented by end of 2024.	Relevant components of INDC and KIER implemented.	Implementation progress reports.	Refer INDC and KIER.	Refer INDC and KIER	MISE	All Ministries and agencies as all have a role to play in reducing GHG emissions from each sector.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASLINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
CC3 – KJIP Implementation: By end 2024 implementation of the KJIP 2019-2028 has been reviewed and any changes required are identified for implementation during the remaining KJIP period to 2028.	▪ KJIP 2019-2028 provides the overarching framework for climate adaptation in Kiribati integrated with disaster risk management. ▪ Need to review progress with implementation and identify any adaptive management responses that might be required.	CC3.1: KJIP implementation mid-term review, including recommendations for any adaptive management responses that might be required, completed by end of 2024.	Mid-term review completed.	Mid-term review report.	▪ Draft and agree ToR for the KJIP implementation mid-term review. ▪ Commission and undertake the midterm review. ▪ Act on the findings and recommendations of the review.	40K	OB	▪ All agencies involved in KJIP implementation.
CC4 – Integrated Vulnerability Assessments (IVAs): By end 2024, building on the 14 IVAs already completed by 2021, systematic, science-based, best-practice climate change IVAs have been completed for all islands, including uninhabited islands, with recommendations for Island Adaptation Plans (IAPs) for each island, based on their IVAs.	▪ IVAs have already been conducted for 14 inhabited islands, guided by the KNEG. ▪ IVAs need to be conducted for all 33 islands across Kiribati, including the uninhabited islands, where ecological resources and values may be threatened by climate change.	CC4.1: IVAs completed for four high priority islands that are not part of the initial 14 already completed, by end of 2022. CC4.2: IVAs completed for all other islands by end of 2024.	IVA reports completed and approved by KNEG.	Physical viewing of output documents.	▪ Commission consultancies to undertake the IVAs. ▪ Require participation of ECD staff for 'on-the job' training and capacity building in IVA methods. ▪ Ensure that key island and sector reps are fully consulted and involved in IVA process.	4M	OB	▪ KNEG. ▪ MELAD-ECD. ▪ CC TA Working Group. ▪ Island Councils. ▪ Ministries relevant to each sector subject to VA.
CC5 – Sector Vulnerability Assessments (SVAs): By end 2024 systematic, science-based, best-practice climate change SVAs have been completed for all socioeconomic sectors in the country, with recommendations for Sector Adaptation Plans (SAPs) for sector, based on their SVAs.	No SVAs have been carried out in Kiribati.	CC5.1: SVAs completed for coastal fisheries, offshore fisheries & tourism sectors by end of 2022. CC5.2: SVAs completed for all remaining socioeconomic sectors by end of 2024.	SVA reports completed and approved by KNEG.	Physical viewing of output documents.	▪ Commission consultancies to undertake the SVAs. ▪ Require participation of ECD staff for 'on-the job' training and capacity building in SVA methods. ▪ Ensure that key island and sector reps are fully consulted and involved in SVA process.	1M	OB	▪ KNEG. ▪ MELAD-ECD. ▪ CC TA Working Group. ▪ Island Councils. ▪ Ministries relevant to each sector subject to VA.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)		BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
CC6 – Island Strategic Plans (ISPs): By end 2024, all islands in Kiribati have begun to implement their ISPs, which include climate change adaptation measures, as recommended by the IVAs, with preference for measures that are based on soft/green engineering, ‘building with nature’ and community involvement and ownership.		■ NAPA 2007 has not been updated. ■ JIP has been adopted but is quite generic and does not set comprehensive adaptation plans for each island in Kiribati. ■ There are existing ISPs (Island Strategic Plans) for some islands that provide some actions on adaptation – but do not constitute proper adaptation plans based on VAs. ■ There is a need for detailed, island-specific ISPs that are tailored to the IVA profiles and circumstances of each and island and socioeconomic sector.	CC4.1: ISPs completed and implementation commenced for high priority islands (based on highest populations) of Tarawa, Abaiang and Kiritimati by end of 2022. CC4.2: ISPs completed and implementation commenced for all other inhabited islands by end of 2023. CC4.3: ISPs completed and implementation commenced for all remaining islands by end of 2024.	ISPs completed and approved by KNEG.	Physical viewing of output documents.	■ Commission consultancies to undertake the IAPs. ■ Require participation of ECD staff for ‘on-the-job’ training and capacity building in IAP methods. ■ Ensure that key island and sector reps are fully consulted and involved in IAP process.	2M	MIA	■ KNEG. ■ MELAD-ECD. ■ CC TA Working Group. ■ Island Councils. ■ Ministries relevant to each sector subject to VA. ■ MISE ■ OB ■ MPLID for Phoenix & Line Islands groups.



LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASLINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
CC7 – Sector Adaptation Plans (SAPs): By end 2024, all socioeconomic sectors in Kiribati have begun to implement their SAPs, as recommended by their SVAs, with preference for measures that are based on soft/green engineering, 'building with nature' and community involvement and ownership.	- There are no sector-specific SAPs in Kiribati to date. - There is a need for detailed, sector-specific SAPs that are tailored to the SVA profiles and circumstances of each socioeconomic sector.	CC7.1: SAPs completed and implementation commenced for coastal fisheries, offshore fisheries & tourism sectors by end of 2022. CC7.7: SAPs completed and implementation commenced for all remaining socioeconomic sectors by end of 2024.	SAPs completed and approved by ECD.	Physical viewing of output documents.	- Activities to achieve FYG CC7 will commence one year after CC5, as the SAPs will be informed by the SVAs. - Commission consultancies to undertake the SAPs. - Require participation of ECD staff for 'on-the-job' training and capacity building in SAP methods. - Ensure that key island and sector reps are fully consulted and involved in SAP process. - Training on constructive local knowledge and skills that effectively contribute to building resilience and enhancing food security in the context of climate change. - Document traditional knowledge skills that are vital to building resilience and enhancing food security in the context of climate change.	1M	- MELAD-ECD - Relevant sectors.	- KNEG. - CC TA Working Group. - Island Councils. - Ministries relevant to each sector subject to VA.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
CC7 – Sector Adaptation Plans (SAPs): By end 2024, all socioeconomic sectors in Kiribati have begun to implement their SAPs, as recommended by their SVAs, with preference for measures that are based on soft/green engineering, 'building with nature' and community involvement and ownership.	3 trainings had been conducted in South Tarawa, Abemama, and Mwaiana, targeting youths and women that focused on traditional food preparation and preservation that continue to strengthen the adaptive capacity.	- By 2024, at least 10 trainings conducted. - At least 2 books developed and published on traditional food preparation and preservation and one other adaptation strategy.	Number of traditional knowledge and skills that contribute to strengthening the climate change adaptation strategies.	- Number of trainings conducted that include youths and women. - Number of documentaries in videos and books published on traditional knowledge and skills that contribute to building resilience. - Displays exhibition of products during museum and national cultural days.	- Training on constructive local knowledge and skills that contribute to building resilience and enhancing food security. - Documenting traditional knowledge and skills that contribute to building resilience.	100k	Culture and Museum Division (MIA).	- MELAD ECD - TAK
CC8- Climate Science and Climate change analysis and projection.	Capacity building- Equipment and Tools.	- By the end of 2024. KMS staff will receive training of MHEWS. - By end of 2024, the observation modeling IT system functioning and operational. - By the end of 2024, Climate change analysis and projection have been developed in partnership with BoM and SPREP.	- Collecting risk impact-based forecast. - CLIDE operational and traditional weather, ocean and climate are integrated in the database. - Server installed at IT room. - Installation of software and training.	- Impact based forecast issued to the public. - CLIDE display meteorological data and upgraded - Server is operational. - Climate staff and IT officer receive training.	- Outer Island risk impact assessment. - Training on MHEWS as per WMO guideline. - Procurement of server and installation. - Training and on job at BoM and SPREP.	1M		- OB - MELAD - MISE - Ministries that conducted survey

TA3 Biodiversity (BD)

LONG-TERM GOAL (LTG) (BY END 2036)

LTG-BD1 – National Biodiversity Secured: By end 2036, all key terrestrial and marine ecosystems, habitats and species in Kiribati are effectively protected and sustainably managed, beyond the Aichi targets, through both a national, ecologically representative network of terrestrial and marine protected areas, including community-based protected areas, and through sustainable management of biodiversity resources and values outside of protected areas, including expanded application of

traditional and customary biodiversity management frameworks.

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
BD1 – CBD & NBSAPs: - By end 2024, the NBSAP 2020-24 has been fully implemented and the next four-year NBSAP has been developed, with no gap from the previous NBSAP. The next NBSAP will explicitly include actions on bio-cultural diversity, actions to address the threat to biodiversity from unsustainable agricultural practices including the use of slash and burn, use of chemical pesticides, and restoration and restocking of biodiversity resources. - By end 2024, relevant national reports to the CBD have been prepared and submitted to the CBD and its sub-protocols (biosafety, etc.).	- NBSAP 2020-24 is still being drafted and due to be completed by 2022. - National reports are made to CBD every 4 years. - Next report is due in 2025/25. - The CBD has developed a new Strategic Plan for Biodiversity development from 2021-2030.	BD1.1: Next NBSAP is completed and adopted by end or 2021. BD1.2: The Biodiversity Committee is revised and takes full responsibility to coordinate implementation of next NBSAP by mid-2021. BD1.3: Recruit contract staff to coordinate all reports to CBD by mid-2021.	- NBSAP completed and adopted. - Committee up and running. - Contract staff recruited and operational.	- Physical viewing of output documents. - Committee meeting minutes. - Physical viewing of staff contract and CBD reports produced.	- Secure budget to support the review and update of the NBSAP. - Hire TA or use the BD-TWG to review and update the NBSAP. - Re-identify Committee members (linking to BD-TWG), develop ToR for the Committee and set meeting schedule.	500K	MELAD-ECD	BD TA Working Group.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
BD2 – National Integrated BD Assessment & Monitoring Program (BDAMP): By end 2024, Kiribati has developed and begun to implement a comprehensive, integrated, nationally coordinated, long-term and ongoing terrestrial and marine biodiversity assessment and monitoring programme, which links to TA 8 and which supports regular national State of the Environment (SOE) reporting.	▪ The status of both terrestrial and marine biodiversity in Kiribati is poorly documented. ▪ There are significant biodiversity data gaps. ▪ There is no integrated, nationally coordinated, long-term and ongoing terrestrial and marine biodiversity assessment and monitoring programme.	BD2.1: Elements, parameters and structure of BDAMP developed and agreed by BD stakeholders by end of 2021. BD2.2: Training and capacity building of ECD and other relevant stakeholders/ partners in BDAP methods delivered by end of June 2022. BD2.3: Pilot BDAMP activities including 'on-the-job' training, trialed at two priority terrestrial and two priority marine sites by end of 2022. BD2.4: Full BDAMP activities rolled out to all key terrestrial and marine sites nationally by end of 2024.	▪ BDAMP design produced and approved. ▪ Training report produced and approved. ▪ Pilot site reports produced and approved. ▪ Full BDAMP site reports produced and approved.	Physical viewing of output documents.	▪ Assemble BD TA Working Group to oversee and guide the process. ▪ Commission consultancies to design the BDAMP, deliver training and assist implementation, in close consultation with the BD TA Working Group and partners. ▪ Require participation of ECD staff for 'on-the- job' training and capacity building. ▪ Ensure that key island and BD partner reps are fully consulted and involved.	5M	MELAD-ECD	▪ BD TA Working Group. ▪ MELAD- ALD. ▪ MELAD- LMD. ▪ MFMRD.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)			INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
BD3 – National Ecologically Representative Protected Area Network (PAN) Plan: - By end 2024, Kiribati has developed and begun to implement a National Ecologically Representative Protected Area Network (PAN) Plan, which amongst other aspects: - Meets or exceeds the Global Biodiversity Targets (noting that through the PIPA Kiribati already exceeds the 10% MPA target by 2%). - Is representative of all of the key ecosystems, habitats and species types of Kiribati, with adequate areas protected to ensure the ecological viability of each. - Includes the globally unique wetland ecosystems on Teraina Island, including potentially with Ramsar status, and the highly diverse and poorly known deep water reef communities on many of Kiribati's seamounts (including key biodiversity areas set aside from potential deep seabed mining). - Includes additional community-based protected areas based on traditional/customary biodiversity management measures at relevant and appropriate sites nationally. - Is effectively managed. - Incorporates relevant lessons and best practice, including sustainable financing mechanisms, based on experiences from other Pacific island countries that have successfully established and are implementing national protected area networks (e.g., Palau).	- While the PIPA is an extremely large protected area and is a major credit to GoK, there are still several key ecosystems, habitats and species that are not covered in the national protected area network, including Teraina Island wetlands, seamount ecosystems and others. - To be truly ecologically representative, all key ecosystems, habitats and species need to be covered. - The Kiribati Programme of Work for Protected Areas (PoWPA) (latest version 2010) is now well out of date, and did not achieve an ecologically representative national system.	BD3.1: Elements, key sites and structure of PAN Plan, which address the criteria under FYG-BD3, developed and agreed by BD stakeholders by end of 2021. BD3.2: Full PAN developed and approved by end of June 2023. BD3.3: Implementation of the PAN Plan commenced by mid-2024.	- PAN Plan elements, key sites and structure produced and approved. - Full PAN Plan produced and approved. - Implementation reports produced and approved.	Physical viewing of output documents.	- Assemble BD TA Working Group to oversee and guide the process. - Commission consultancies to develop the PAN Plan, in close consultation with the BD TA Working Group and partners. - Require participation of ECD staff for 'on-the-job' training and capacity building. - Ensure that key island and BD partner reps are fully consulted and involved.	2M	MELAD-ECD	- BD TA Working Group. - MELAD-ALD. - MELAD-LMD. - MFMRD. - MLPID for Line & Phoenix Islands groups. - LINNIX for Line Islands.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
BD4 – Building National Biodiversity Management Capacity: By end 2024, Kiribati has developed and begun to implement a National Biodiversity Management Capacity Plan, which significantly strengthens on-site management, research, monitoring, compliance and enforcement capacity in the PIPA and the protected area system generally in Kiribati.	Existing Capacity: - Mapping using GPS and GIS software – (LMD, Minerals Division-MFMRD, ECD). - Coastal area (beach) Survey – (LMD, Minerals Division-MFMRD). - Coastal marine resource survey including coral reefs – (CFD-MFMRD). - Eradication of Rats and Cats in the Wild – (Wildlife Conservation Unit – ECD MELAD). - Mangrove planting (ECD). - Turtle tagging/rodeo – (ECD). - Development & establishment of community-based biodiversity natural resources management plans, and protected areas (ECD, CFD-MFMRD). - Training/Capacity Needs: - Training on the eradication and control of invasive weeds and animal species. - Ecological mapping and survey using a Drone and GIS software. - Biosafety capacity building needs. - Creating and managing biodiversity database. - Turtle conservation and monitoring. - Assessment on the level of pollution and health of various biodiversity resources/areas including mangrove ecosystems, coral reefs, sea grass beds, mudflats, shoals, forests, ponds, soil, etc. - Restoration of threatened biodiversity resources and other degraded biodiversity areas.	BD4.1: To task the Biodiversity Committee to develop the National Biodiversity Management Capacity Plan. BD4.2: To include different areas in the capacity plan such as conservation strategies, physical assessment and monitoring of every area of biodiversity including the following: - Conservation of biodiversity resources. - Training on the eradication and control of invasive species. - Ecological mapping and survey using drones and GIS. - Biosafety capacity building. - Creating and managing biodiversity database. - Turtle conservation and monitoring. - Assessment on the level of pollution and health of various biodiversity resources/areas including mangrove ecosystems, coral reefs, sea grass beds, mudflats, shoals, forests, ponds, soil, etc. - Restoration and restocking of threatened biodiversity resources and other degraded biodiversity areas.	- National Biodiversity Management Capacity Plan developed and implemented. - Different training planned under the National biodiversity management capacity plan are executed in timely manner. - Number of trainings conducted.	- Physical viewing of output documents. - Committee meeting minutes. - Physical viewing of staff contracts and CBD reports produced.	- Pre-identification of potential Trainers/TA to conduct capacity building under the plan. - Constructing the schedule for training.	5m	MELAD-ECD	- BD TA Working Group. - MELAD-ALD. - MELAD-LMD. - CFD-MFMRD - Minerals Division-MFMRD.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
BD5 – Invasive Species Management: By end 2024, the NISSAP 2020-24 has been fully implemented, and the next four-year NISSAP has been developed, ready for implementation – with no gap from the previous NISSAP.	- The current NISSAP is out of date with an end period of 2020. - Invasive species remain a significant threat to biodiversity in Kiribati and a new NISSAP needs to be developed and fully funded.	BD5.1: Develop new NISSAP by end 2021, ready to implement in 2022. BD5.2: Establish Invasive Species Task Force under Biodiversity Committee to overview development and implementation of next NISSAP, by 1st quarter 2021.	- NISSAP completed and adopted. - Task Force up and running.	- Physical viewing of output documents. - Committee meeting minutes.	- Secure budget to support the review and update of the NISSAP. - Hire TA or use the BD-TWG to review and update the NISSAP. - Identify Task Force members (linking to BD-TWG), develop ToR for the Task Force and set meeting schedule.	150K	MELAD-ECD	- MELAD-ADC. - MELAD-LMD. - MFMRD. - MPLID for Phoenix & Line Islands groups.



TA4 Waste Management and Pollution Prevention (WMPP)

LONG-TERM GOALS (LTGs) (BY END 2036)

LTG-WMPP1 – Waste Free Kiribati: By end 2036, Kiribati has reduced the production of wastes that need to be managed to the absolute bare minimum, by prohibiting the importation of certain waste-generating products and materials, a national shift to a circular economy and wherever possible a return to the use of traditional, natural products and materials.

LTG-WMPP 2 – Waste Safe Kiribati: By end 2036, any and all waste that is still produced in Kiribati despite LTG-PW1, is fully recycled wherever possible and if any disposal is still required, is managed a manner that is sustainable and safe to human health and the natural environment.

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
WMPP 1 – Coordinating KIEP with KWMRRS & other relevant plans: By end 2024, the timeframes in the KWMRRS and POPSNIP have been revised and amended to coincide with the four-year sub-plans of the KIEP and the four-year KDPs, relevant components of both plans for the 2020-24 period have been fully implemented, and the next four-year components of both plans are ready for implementation, with no gap from the previous plans	■ KWMRRS 2020–2030 had been adopted ready to commence implementation. ■ However timeframe is not consistent with the KIEP 2021–2036 and needs to be aligned. ■ POPSNIP also needs to be reviewed and updated.	WMPP 1.1: The timeframes in the KWMRRS and POPSNIP have been revised and amended to coincide with the four-year sub-plans of the KIEP and the four-year KDPs, by end 2024 WMPP 1.2: Relevant components of both plans for the 2020-24 period have been fully implemented, by end 2024.	■ KWMRRS and POPSNIP have revised timeframes consistent with the KIEP and KDPs. ■ Refer indicators in the KWMRRS.	■ Physical viewing of output documents. ■ Refer indicators in the KWMRRS.	Internal	Internal	MELAD-ECD	■ MISEW ■ Island Councils

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASILINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
WMPP 2 – National Waste Importation Reduction Plan (coordinate with Component 4 of KWMRSS): By end 2024, Kiribati has undertaken a national audit of all imported products and materials to identify those which generate unnecessary waste management demands in the country, and which can be replaced by more sustainable alternatives, and has developed a national plan, including relevant legislation, to prohibit or reduce the importation of such products and materials, including imposition of a waste levy (e.g., through the existing <i>Special Fund (Waste Material Recovery) Act 2004</i>).	▪ Kiribati was one of the first countries in the world to take action to ban products for waste management reasons – since the 1990s the importation of beverages in glass has been banned and only aluminum cans can be used – which are easier to recycle (however more enforcement of the ban is required). ▪ There is currently a wide range of other imported products and materials that generate difficult waste management and pollution prevention problems for the country, which might be replaced by more sustainable alternatives. ▪ There is currently no detailed information on this to enable a plan to be developed. ▪ The Traffic Act 2017 introduced the Ten Year Policy on importation of motor vehicles as an effective measure to control and reduce the number of second-hand motor vehicles imported from Japan.	WMPP 2.1: National imported products waste audit, including recommendations for prohibiting certain imports and identification of suitable alternatives, completed by end of 2022. WMPP 2.2: Legislation to ban specified imports prepared and passed by end of June 2023. WMPP 2.3: Importation bans fully operational by mid-2024. WMPP 2.4: To reduce the number of motor vehicles imported that contribute to waste management issues in Kiribati.	▪ Audit report completed and approved by ECD. ▪ Legislation drafted and passed. ▪ Import bans in place and operating. ▪ The Traffic Act approved in 2017 enforced in 2019 by the Kiribati Police Services and KLTA.	▪ Physical viewing of output documents. ▪ Verification checks on imported products (by Customs). ▪ The Traffic Act 2017 is in place.	▪ Assemble PWM TA Working Group to oversee and guide the process. ▪ Commission consultancy to undertake the national import waste audit, in close consultation with the PWM TA Working Group and partners. ▪ Require participation of ECD staff for 'on-the-job' training and capacity building. ▪ Ensure that key import and trade reps are fully consulted and involved. ▪ Commission legislative drafters and subject matter experts to draft new laws. ▪ Run consultation. ▪ Finalise new laws based on consultation inputs. ▪ Pass through Cabinet and Parliament. ▪ Raise Public Awareness on the Ten Year Policy.	250K	MELAD-ECD	▪ Customs. ▪ Ministry of Trade. ▪ KLTA (re. importing vehicles). ▪ EHU – MHMS. ▪ Kiribati Police Service.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
WMPP 3 – Pollution and Waste Reduction Through Circular Economy (coordinate with Component 4 of KWMRSS): By end 2024, Kiribati has developed a National Circular Economy Strategy (NCES), ready to commence implementation in the next four-year period. The NCES will identify all possible opportunities to reduce production of pollution and waste in all sectors of the economy, will embrace the principles and targets of responsible consumption and production outlined in SDG 12, and will support a return to the use of traditional, natural materials.	▪ Kiribati has practised a true circular economy through sustainable traditional livelihoods for millennia. ▪ Modern economy of Kiribati is shifting away from sustainability and needs to transition to circular model.	WMPP 3.1: NCES addressing all criteria under FYG PW3 is developed and approved by end of 2024.	NCES report completed and approved.	Physical viewing of output documents.	▪ Assemble WMPP TA Working Group to oversee and guide the process. ▪ Commission consultancy to develop the NCES, in close consultation with the WMPP TA Working Group and partners. ▪ Require participation of ECD staff for 'on-the-job' training and capacity building. ▪ Ensure that key economy, business and industry reps are fully consulted and involved.	150K	MFED	▪ MELAD-ECD. ▪ All Ministries involved in economy, business and industry.
WMPP 4 – Building National Waste Management Capacity (coordinate with Component 3 of KWMRRS): ▪ By end 2024, Kiribati has developed and begun to implement the National Waste Management Capacity Plan, which incorporates all relevant elements of FYGs WMPP1 to WMPP3. ▪ Include training on developing waste by-laws and enforcement for outer islands councils.	▪ Household waste surveys have been conducted on 11 outer islands. The survey is based on getting information on problematic wastes and the issues the outer islands are facing in dealing with waste at the household and island level. ▪ Household waste composition surveys have been conducted in 3 islands (2 rural islands and 1 urban island).	WMPP 4.1: Kiribati has developed the National Waste Management Capacity Plan addressing all waste management issues in the outer islands by end 2024.	The National Waste Management Capacity Plan is developed and approved.	Waste management in the outer islands has improved and reduced to zero waste problems.	Waste management actions initiatives (theory and hands on).	200K	MELAD	▪ MIA. ▪ MPLID for Phoenix & Line Islands groups.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
WMPP 5 – Strengthening Vessel Pollution & Waste Management Capacity: - By end 2024, Kiribati has developed and begun to implement a National Vessel Pollution and Waste Management Capacity Plan, which aims to support the Marine Division, supported by ECD and MFMRD, to strengthen their capacity to regulate, control and respond to pollution and wastes from the increasing number of foreign vessels that use Kiribati waters and ports, and in response to the KV20 and KDP 2021–2024 proposals to build new ports/ transshipment hubs at Tarawa and Kiritimati. This plan will include: - Ratifying all outstanding and relevant IMO and SPREP Conventions and Protocols (refer section 4.3). - Reviewing and updating all of Kiribati’s marine legislation to ensure consistency with the IMO regime. - Strengthening the Marine Division’s capacity to undertake Port State Control (PSC) in relation to IMO pollution and environment conventions. - Reviewing and updating Kiribati’s National Marine Spill Response Plan (NATPLAN), including ensuring adequate coverage of outer islands. - Undertaking marine pollution habitat sensitivity and protection priority mapping for all islands, on GIS. - Developing a National Ports Waste Reception and Management Strategy (including the need to cater for the proposed building of new ports/ transshipment hubs). - Upgrading pollution response equipment, including at Kiritimati. - Expanding training and capacity building of Marine Division and other relevant personnel.	- Vessel-source pollution and waste risks are increasing in Kiribati from the increasing number of foreign vessels that use Kiribati waters and ports. - These risks will increase further if the KV20 and KDP 2021–2024 proposals to build new ports/ transshipment hubs at Tarawa and Kiritimati are developed. - Kiribati is not a party to some key IMO Conventions and SPREP Protocols on marine pollution, which are serious gaps (addressed in FYG EG1 MEAs). - Kiribati’s marine legislation is not fully consistent with the globally harmonised IMO regime, which is a significant gap. - The Marine Division has lead responsibility for these issues and receives training and support from the SPREP PACPOL programme from time-to-time, although capacity is limited and needs to grow in relation to the growing risk. - The Marine Division has a Marine Pollution Contingency Plan although this is limited in scope, especially for outer islands, and is not supported by habitat sensitivity and protection priority mapping for all islands, on GIS. - Port waste reception facilities are limited, reflecting the overall challenges of waste management in Kiribati.	WMPP 5.1: Kiribati’s marine legislation is reviewed and updated to align with IMO regime, and passed by end of 2022. WMPP 5.2: Marine Division’s capacity to undertake PSC in relation to IMO pollution and environment conventions is strengthened by end of 2022. WMPP 5.3: Kiribati’s Marine Spill Response Plan reviewed and updated, including adequate coverage of outer islands, by end of 2021. WMPP 5.4: Marine pollution habitat sensitivity and protection priority mapping completed for all islands, on GIS, by end of 2024. WMPP 5.5: National Ports Waste Reception and Management Strategy developed by end of 2023. WMPP 5.6: Marine pollution response equipment, including at Kiritimati upgraded by end of 2024. WMPP 5.7: Training and capacity building of Marine Division and other relevant personnel strengthened by end of 2022.	- Marine laws amended to be consistent with IMO regime, and documents. - Reports and plans completed and approved. - Training delivered and reported.	Physical viewing of output documents.	- Assemble vessel-pollution sub-group under WMPP TA Working Group to oversee and guide the process. - Commission legislative drafters and subject matter experts to draft new marine laws. - Run consultation. - Finalise new laws based on consultation inputs. - Pass through Cabinet and Parliament. - Commission consultancies to address PW5.2 to WMPP 5.7 in close consultation with the WMPP TA Working Group and partners. - Require participation of Marine Division, MFMRD and ECD staff for ‘on-the-job’ training and capacity building. - Ensure that key marine industry reps are fully consulted and involved.	5M	Marine Division	- MELAD-ECD. - MFMRD.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)		BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
WMPP 6 – Addressing Air Pollution: By end 2024, Kiribati has developed a National Air Pollution Prevention Plan, including measures to raise public awareness about air pollution issues and a regulation to ban the burning of plastic wastes, including as a fuel for home-cooking fires, which can have serious health implications.		- Air pollution is an emerging issue in Kiribati, including burning of plastic wastes, including as a fuel for home-cooking fires, which can have serious health implications. - There are currently no measures in place to address air pollution in Kiribati.	WMPP 6.1: Kiribati has developed a National Air Pollution Prevention Plan, including measures to raise public awareness about air pollution issues and a regulation to ban the burning of plastic wastes, including as a fuel for home-cooking, by end of 2024.	National Air Pollution Prevention Plan developed and adopted, ready for implementation.	Copy of the plan.	Assemble air pollution sub-group under WMPP TA Working Group to develop the National Air Pollution Prevention Plan.	500K	MELAD- Health.	ECD.



TA5 Non-living Natural Resources (NNR)

LONG-TERM GOALS (LTGs) (BY END 2036)

LTG-NNR1 - Groundwater supplies protected: By end 2036, the freshwater resources including groundwater lenses that are needed to supply potable water needs are fully protected from pollution and contamination and sustainably managed for the long-term, equitable benefit of all I-Kiribati, within an integrated water resources management framework that considers all supplies and all uses of freshwater resources, building on the previous IWRMP.

LTG-NNR2 – Ecological water needs protected: By end 2036, the freshwater resources and flows that are needed to protect and sustain all of the key freshwater-dependent ecosystems, habitats and species of Kiribati are fully protected and sustainably managed for the long-term, equitable benefit of all I-Kiribati, within an integrated water resources management framework that considers all supplies and all uses of freshwater resources, building on the previous IWRMP.

LTG-NNR3 – All lands sustainably managed: By end 2036, all land on all islands in Kiribati is sustainably managed for the long-term, equitable benefit of all I-Kiribati, and Kiribati has achieved Land Degradation Neutrality (LDN).

LTG-NNR5 – All sand and aggregate sustainably managed: By end 2036, the extraction and exploitation of coastal and lagoon sand and gravel resources in Kiribati are sustainably managed for the long-term, equitable benefit of all I-Kiribati.

LTG-NNR6 – Deep seabed mining sustainably managed: By end 2036, any potential deep seabed mining in Kiribati is subject to the most stringent EIA and environmental regulatory controls and monitoring and is sustainably managed for the long-term, equitable benefit of all I-Kiribati.



LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)		TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
NNR1 – Groundwater Protection Plan: By end 2024, a National Plan, building on any relevant existing plans, has been developed to ensure that the freshwater resources, including groundwater lenses, that are needed to supply potable water needs are fully protected from pollution and contamination and sustainably managed for the long-term, within an integrated water resources management framework, ready for implementation in subsequent years.	■ The challenges faced in the water security and sanitation sector in Kiribati are amongst the most difficult in the world, driven by natural scarcity, variability and vulnerability of water resources in small island environments, demographic trends towards highly dense urbanisation on South Tarawa and Kiritimati, versus widely dispersed and remote villages on other islands, lack of water infrastructure, over-exploitation and contamination of groundwater resources and the impacts of other human activities. ■ The previous IWRMP carried some extremely helpful foundational work in moving Kiribati towards a more integrated approach to water resource management, where all water supplies and all water uses are managed under a coordinated, integrated framework. However, since closure of the IWRMP the management of freshwater resources in Kiribati appears to be fragmenting back to a non-integrated, uncoordinated approach with different Ministries and Divisions having different responsibilities. ■ Water issues are addressed through the multi-agency, whole-of-government National Water Resources Implementation Plan (NWRIP) (latest version 2008-2018), however there is no new plan post-2018. ■ Additional actions are required to ensure long-term protection of freshwater lenses from pollution and contamination.	NNR1.1: Assessment of the freshwater resources threats and protection needs are completed and approved, for each island, by end of 2023. NNR1.2: Freshwater Resource Protection Plan has been developed for each island, ready to commence implementation, by end of 2024.	Reports and plans completed and approved.	Physical viewing of output documents.	■ Assemble freshwater protection sub-group under NNR TA Working Group to oversee and guide the process. ■ Commission consultancies to address NNR1.1 and NNR1.2, in close consultation with NNR2 Working Group, Island Councils and partners. ■ Require participation of ECD and other staff for 'on-the-job' training and capacity building. ■ Ensure that key industry reps are fully consulted and involved.	1M	MELAD -ECD.	■ Island Councils. ■ MELAD-ADD. ■ MELAS-LMD. ■ MISE. ■ MPLID for Phoenix & Line Islands groups.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)			INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
NNR2 – National Ecological Water-needs Assessment and Management Plan: By end 2024, a national assessment of the freshwater resources and flows that are needed to protect and sustain all of the key freshwater-dependent ecosystems, habitats and species of Kiribati has been completed, for each island, and an Ecological Water Needs Management Plan has been developed for each island, within an integrated water resources management framework, ready to commence implementation in the next four-year period.	- From an environmental perspective, which is the primary focus of this KIEP, there has been virtually zero consideration of environmental and ecological water flows and needs in Kiribati to date – the entire focus has been on water security for direct human needs. - Secure, clean and sustainable freshwater resources are also essential to sustain Kiribati's island ecosystems and biodiversity, and if human uses deplete and degrade freshwater resources, then ecosystems, habitats and biodiversity will also deplete and degrade. - Some islands of Kiribati have special and unique freshwater ecosystems, habitats and biodiversity, such as the lakes, swamps and canals of Teraina Island in the Line Islands group, which are already beginning to experience salinisation due to climate change.	NNR2.1: Assessment of the freshwater resources and flows that are needed to protect and sustain all the key freshwater-dependent ecosystems, habitats and species of Kiribati has been completed and approved, for each island, by end of 2022. NNR2.2: Ecological Water Needs Management Plan has been developed for each island, ready to commence implementation, by end of 2024.	Reports and plans completed and approved.	Physical viewing of output documents.	- Assemble ecological water sub-group under NNR TA Working Group to oversee and guide the process, in close coordination with NNR1 working group. - Commission consultancies to address NNR1.1 and NNR1.2, in close consultation with the PW TA Working Group, Island Councils and partners. - Require participation of ECD and other staff for 'on-the-job' training and capacity building. - Ensure that key industry reps are fully consulted and involved.	1M	MELAD -ECD.	- Island Councils. - MELAD-ADD. - MELAS-LMD. - MISE. - MPLID for Phoenix & Line Islands groups.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASLINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
NNR3 – National LDN Report: By end 2024, the 1st National LDN Report has been completed, consistent with UNCCD requirements, which identifies all key problems related to land degradation, proposes a National LDN Strategy and Action Plan to address land degradation problems in Kiribati and establishes a monitoring and information management system to enable reporting to the UNCCD, linked to the National Integrated Environmental Data Monitoring and Management System, and feeding into the regular National State of the Environment Reports (refer TA 8).	Currently no National LDN reporting process in Kiribati.	NNR3.1: The 1st National LDN Report has been completed, consistent with UNCCD requirements, which identifies all key problems related to land degradation, proposes a National LDN Strategy and Action Plan to address land degradation problems in Kiribati and establishes a monitoring and information management system to enable reporting to the UNCCD, linked to the National Integrated Environmental Data Monitoring and Management System, and feeding into the regular National State of the Environment Reports, by end of 2024.	▪ Status of land cover. ▪ Status of land use. ▪ Status of land productivity. ▪ Coastline change (past 10 years). ▪ Drivers of land degradation.	Physical viewing of output documents.	▪ Technical working group meetings. ▪ Assessing land and marine degradation areas – producing map for land cover and use changes. ▪ Public awareness and outreach on the importance of land services and functions.		MELAD-ECD	▪ LMD, MELAD ▪ ALD, MELAD ▪ Geoscience Division, MFMRD ▪ Marine Division, MICTTD ▪ BTC ▪ TUC ▪ MPLID for Phoenix & Line Islands groups.



LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
NNR4 – Island Sustainable Land-use and Urban Management Plans: By end 2024, within the context of Kiribati National Urban Policy 2020, Sustainable Land-use Plans have been completed for each inhabited island, integrating land-use needs for human habitation/ urban development, commerce, industry and infrastructure, agriculture (including traditional subsistence), ecosystem-services and nature conservation, supported by spatial planning, ready to commence implementation in the next four-year period.	▪ Lack of land use planning – especially in the densely populated areas of South Tarawa and Kiritimati, is causing over-crowding and land degradation. ▪ Urban expansion is also reducing land available for agriculture and terrestrial habitats and biodiversity. ▪ There is an urgent need to improve sustainable land use planning in Kiribati, supported by spatial planning.	NNR4.1: Sustainable Land-use (SLU) Plans addressing the criteria under FYG NNR2 have been completed and approved for the high priority islands of Tarawa, Abaiang and Kiritimati by end of 2022. NNR4.2: Sustainable Land-use (SLU) Plans addressing the criteria under FYG NNR2 have been completed and approved for each of the remaining inhabited islands by end of 2024.	Reports and plans completed and approved.	Physical viewing of output documents.	▪ Assemble SLU Planning sub-group under NNR TA Working Group to oversee and guide the process. ▪ Commission consultancies to address NNR2.1 and NNR2.2, in close consultation with the SLU Planning sub-group Island Councils and partners. ▪ Require participation of LMD and other staff for 'on-the-job' training and capacity building. ▪ Ensure that key island reps are fully consulted and involved.	1M	MELAD-LMD.	▪ Island Councils. ▪ MELAD-ADD. ▪ MELAD-ECD. ▪ MISE. ▪ MPLID for Phoenix & Line Islands groups.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
NNR5 – Aggregate Mining SEA: By end 2024, a national-level SEA of all coastal and lagoon sand and aggregate mining has been completed and used to inform development of a National Sustainable Sand and Aggregate Management Plan, for each relevant island, ready to commence implementation in the next four-year period.	While the government has started to implement controls on coastal and lagoon mining in some areas, there is a need to improve compliance and enforcement, and to extend controls to other parts of the country.	NNR5.1: National-level SEA of all coastal and lagoon sand and aggregate mining across all islands has been completed and approved by end of 2022. NNR5.2: National Sustainable Sand and Aggregate Management Plan, for each relevant island, completed and approved by end of 2024.	Reports and plans completed and approved.	Physical viewing of output documents.	- Assemble Sand and Aggregate sub-group under NNR TA Working Group to oversee and guide the process. - Commission consultancies to address NNR3.1 and NNR3.2, in close consultation with the Sand and Aggregate sub-group, Island Councils and partners. - Require participation of Geoscience Division and other staff for 'on-the-job' training and capacity building. - Ensure that key island reps are fully consulted and involved.	300K	MFMRD Geoscience Division.	- Island Councils. - MELAD-LMD. - MELAD-ECD. - MISE.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)		BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
NNR6 – National DSM SEA and Capacity Plan: By end 2024, a national-level SEA of potential DSM in Kiribati has been completed and used to inform development of a National DSM Capacity Plan, designed to significantly strengthen the capacity of ECD and MFMRD in environmental governance, EIA and regulatory control, compliance and monitoring of DSM, ready to commence implementation in the next four-year period.		- DSM SEA already addressed in FYG EG3. - The Regulation on Deep Sea Mining is in draft. - No national guideline on sound environmental monitoring of DSM activities. - Limited capacity and resources to perform regulatory role on DSM activities. - No 'longer term' and 'formal' training programme on DSM issues.	DSM SEA already addressed in FYG EG3. NNR5.1: The draft regulation on deep sea mining is endorsed and implemented by end 2022. NNR5.2: National guideline on sound environmental management & monitoring of DSM activities is developed by end of 2023. NNR5.3: Collaboration with relevant partners such as mining companies and marine research institutions on capacity needs is established by end of 2022. NNR5.4: Formal training programme in relevant DSM activities in the national training priority need.	- The regulation is available. - The national guideline is available. - MOUs and formal agreements between Kiribati and relevant partners on capacity need programme. - Inclusion of formal training programme on DSM in the national training priority need.	Physical viewing of output documents.	- Through the KISMTAC, initiate consultation with the OAG on the formulation of the Seabed Minerals Act Regulations. - Through the KISMTAC and MSR Coordination Committee, develop national guidelines on sound monitoring of DSM activities. - Identify and initiate dialogue with potential DSM partners including mining companies on capacity needs collaboration. - Dialogue with PSO on the identification and inclusion of formal training relevant to DSM activities.	100K	MFMRD	- KISMTAC - MSR Coordination Committee

TA6 Ocean Health and Sustainable Blue Economy (OHSBE)

LONG-TERM GOAL (LTG) (BY END 2036)

LTG-OHSBE1 – Sustainable Blue Economy Developed and Ocean Health Protected: By end 2036, sustainable blue economy sectors have become significant contributors to the independent economic future of Kiribati, all I-Kiribati people are benefitting equitably from well-developed sustainable blue economy sectors, while the health of the ocean, marine biodiversity and marine resources are protected and sustainably managed.

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
OHSBE1 – National Integrated Ocean Governance Policy: By end 2024, a National Integrated Ocean Governance Policy, which coordinates all relevant government ministries and agencies, and all ocean-related sectors, has been developed and adopted; ready to commence implementation in the next four-year period.	▪ The MFMRD has developed a National Fisheries Policy and a National Coastal Fisheries Road Map; however these are subject to some limitations as outlined in section 4.5, Table 5, including limited embracement of EBM and lack of consideration of the environmental impacts of fisheries. ▪ As sector-specific plans they are also not part of a broader, integrated ocean governance framework that considers and accounts for all marine users and uses. ▪ There is a need to take a more holistic, integrated approach ocean governance.	OHSBE1.1: National Integrated Ocean Governance Policy, which addresses the criteria under FYG OHSBE1, has been completed and approved by end of 2022.	Plan completed and approved.	Physical viewing of output documents.	▪ Assemble OHSBE TA Working Group to oversee and guide the process. ▪ Commission consultancy to address OHSBE1.1, in close consultation with the OHSBE TA Working Group, and partners. ▪ Require participation of MFMRD and other staff for 'on-the-job' training and capacity building. ▪ Ensure that key marine sector reps are fully consulted and involved.	150K	MFMRD	MELAD-ECD. Marine Division.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASLINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
OHSBE2 – National Ocean Health and Sustainable Blue Economy (OHSBE) Strategy and Action Plan: By end 2024, a National OHSBE Strategy and Action Plan, which seeks to develop all relevant sectors of the sustainable blue economy (refer separate OHSBE Briefing Paper available from ECD), while also ensuring that the health of the ocean and marine biodiversity are protected, has been developed and adopted, ready to commence implementation in the next four-year period.	- Development of an Ocean Health and Sustainable Blue Economy (OHSBE) which promotes the development of coastal and marine-based businesses and industries, while also ensuring that they are ecologically sustainable and that the health of the ocean and marine biodiversity are protected, perhaps holds the most realistic prospect for a sustainable and independent economic future for Kiribati. - Potential SBS sectors that hold promise for Kiribati are outlined in separate OHSBE Briefing Paper available from ECD. - However, despite the promising potential, there is no overall OHSBE strategy and action plan for Kiribati.	OHSBE1.1: National Plan completed and approved. OHSBE Strategy and Action Plan, which addresses the criteria under FYG OHSBE1, has been completed and approved by end of 2022.	Plan completed and approved.	Physical viewing of output documents.	- Assemble OHSBE TA Working Group to oversee and guide the process. - Commission consultancy to address OHSBE2.1, in close consultation with the OHSBE TA Working Group, and partners. - Require participation of MFMRD and other staff for 'on-the-job' training and capacity building. - Ensure that key marine sector reps are fully consulted and involved.	150K	MFMRD	- MELAD-ECD. - Marine Division. - MPLID for Phoenix & Line Islands groups.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
OHSBE3 – ECD Marine Capacity Strengthened By end 2024, all ECD units will have received training and capacity building to strengthen their marine expertise and capabilities to undertake SEA and EIA and environmental regulatory control and monitoring of all relevant marine industries, including emerging proposals like major dredging and land reclamation, expansion of mariculture and development of DSM.	Marine environmental issues are beginning to increase significantly in Kiribati including new major marine-related proposals in the KV20 and KDP 2021–2024. ■ However, ECD currently has limited specialist expertise in marine science, marine biology and marine environmental issues, and thus limited capacity to assess and manage these major marine projects.	OHSBE3.1: All ECD units will have received training and capacity building to strengthen their marine expertise and capabilities to undertake SEA and EIA and environmental regulatory control and monitoring of all relevant marine industries, including emerging proposals like major dredging and land reclamation, expansion of mariculture and development of DSM, by end of 2024. OHSBE3.2: Procedures are in place for ECD to work closely and cooperatively with MFMRD, Marine Division and other ocean-related agencies in a coordinated, whole-of-government approach to ocean governance and marine environment protection, within the framework of the National Integrated Ocean Governance Policy developed under FYG-OHSBE1, by end of 2024.	■ Marine expertise training and capacity building plan developed. ■ Marine expertise training and capacity building plan implemented. ■ OHSBE3.1q achieved through OHSBE1.1 .	Output documents.	■ Develop marine expertise training and capacity building plan, including gaps and needs assessment. ■ Implement the plan.	200K	MELAD-ECD	MFMRD. Marine Division. KPA. KSCL. MTC.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
OHSBE4 – ECD Marine Environment Protection Unit (MEPU): By end 2024, ECD has undertaken an assessment of the need or not for the formation of a dedicated MEPU within ECD.	No dedicated MEPU in ECD.	OHSBE4.1: ECD has undertaken an assessment of the need or not for the formation of a dedicated MEPU within ECD, by end of 2024.	MEPU needs assessment completed.	Output documents.	Form inter-agency working group led by ECD to undertake the assessment.	50K	MELAD-ECD	- MFMRD. - Marine Division. - KPA. - KSCL. - MTC.
OHSBE5 – Ocean Science, Physical Oceanography and sea level monitoring.	- Product and services: Ocean outlook has been issued to stakeholders. - Wave buoy has been deployed. - Tarawa tide gauge already installed.	- By the end of 2024 – Ocean and marine services improved. - Makin and other island will have wave buoy. - One Physical Oceanographer.	- Issued marine forecast and joint the ocean and marine working group. - Recruit one physical Oceanographer.	- Shared product on daily basis. - Participate in ocean and marine international and national. - Ocean data for Makin incorporated in the forecast.	- Installation of Wave buoy in Makin. - NOWCOF - On job training at SPC.	70K	Met	ALL Ministries



TA7 Environmental Education, Communication and Awareness (EECA)

LONG-TERM GOAL (LTG) (BY END 2036)

LTG-EECA1 – National Environmental Awareness: By end 2036, all sectors of society in Kiribati are fully aware of all the main environmental issues that affect the country, of the best-practice measures for addressing each issue, of their legal obligations under relevant environmental laws and regulations, and of traditional/customary approaches to sustainable environmental and natural resource management.

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
EIDM1 – SOE parameters and Indicators By end 2024, all environment parameters and indicators from all environmental sectors has been identified, assessed, monitored and integrated within the environment data monitoring and management system to feed SOE reports ready to be produced in the next four-year period.	- Lack of SOE parameters and indicators identified with no monitoring and assessment implemented. - Review previous SOE reports and identify SOE indicators for the next SOE report.	EIDM1.1: EIDM SOE parameters and indicators are reviewed and developed.	SOE parameters and indicators approved.	List of parameters and indicators compiled.	- ECD Internal review of environment parameters, indicators and previous SOE report. - Consult Environment Stakeholders committee and user groups. - Regular collection of environment data to feed the SOE report.	50K	MELAD-ECD	- KMS - MFMRD - MHMS - KOIL - KNSO - MELAD-ALD - MIA - OB - MICTTD
EIDM2 – Integrated environmental data monitoring and management system By end 2024, an integrated environmental data monitoring and management system is developed, used for extracting data needed for SOE reports, and easily accessible to ECD staff via offline portal with security measures put in place.	- No integrated environmental data monitoring and management system has been developed. - Lack of data analysis tools. Lack of physical computer hardware.	EIDM2.1: Integrated environment data monitoring and management system developed. EIDM2.2: Data analysis tools and physical computer hardware is to be purchased	System is functional.	System is accessible and used by ECD staff.	- Planning - Designing - Implementing - Testing - Deploying - Maintaining	200K	ECD-MELAD	- EMIS working group. - ECD Data and information Management Committee. - Kiribati Computer and Internet Society.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASLINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
EIDM3 – Environment spatial planning unit By end 2024, an Environment spatial planning unit is established and fully functional in providing terrestrial, costal, cultural historical and other thematic maps needed for some reports, climate change impacts, land degradation, and other visual informative reports needed.	No GIS/Spatial Planning Unit established.	EIDM3.1: GIS/ Spatial Planning Unit is established.	Unit is approved and established.	Officers exist within the Unit.	- Recruitment of unit's officers. - Establishment of officers TOR. - Produce thematic maps needed for reports.	50K	ECD- MELAD	Kiribati GIS User Group.
EIDM4 – Staff training and capacity building By end 2024, EIDMS-ECD staff have the knowledge and skills in system development, database development, networking, cyber security, data security, data mining, GIS mapping, drone operation with license and ability to confidently used an integrated environmental data monitoring and management system to import and export data, while all ECD staff are able to use the system.	Lack of knowledge and skills in system development, database development, networking, cyber security, data security, data mining, GIS mapping, drone operation with license and ability to confidently used an integrated environmental data monitoring and management system to import and export data.	EIDM4.1: Improve capacity building on the knowledge and skills needed.	Number of workshops/ training courses implemented.	- Verified training certificate. - Staff competency in using the system.	- Training/workshops on: - System development. - Database development. - Networking. - Cyber security. - Data security. - Data mining. - GIS mapping. - Drone operation. - System operation. - Environmental data collection and monitoring. - Short term staff attachments.	100K	ECD- MELAD	- MICTTD. - MELAD-ALD. - Kiribati Computer & Internet Society. - EMIS User Group. - ECD Data and Information Management committee.
EIDM5 – Environment Survey and Research By the end of 2024, the research and survey unit established and conducting environment related surveys and research for SOE reporting.	- No Environment Research and Survey Unit established. - Lack of research and surveys implemented recognising traditional knowledge, skills and values for environmental conservation.	- Environment Research and Survey Unit established. - Various research and surveys implemented.	- Unit approved and endorsed. - Number of Environment research and surveys implemented.	- Officers exist in a unit. - Environmental research and survey reports approved and endorsed.	- Recruitment of unit's officers. - Establishment of officers TOR. - Produce surveys and research reports plus SOE report. - Work in collaboration with other sectors on joint research to promote activities that contribute to the conservation of thematic areas of the environment.	50k 60k	MELAD- ECD Culture and Museum Division	- ECD Stakeholder - MELAD-ECD Culture & Museum Division

TA8 Environmental Information and Data Management (EIDM)

LONG-TERM GOAL (LTG) (BY END 2036)

LTG-EIDM1 – Information and Knowledge for More Effective Environmental Management: By end 2036, all environmental planning, assessment and management activities in Kiribati are fully supported and informed by the best available data and information on SMART environmental parameters and indicators, and national SOE reports are undertaken every four years, with feedback loops whereby environmental policies, strategies and programmes can be adjusted and refocused in response to the environmental status and trends that are identified by the SOE reports.

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASELINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
EIDM1 – SOE parameters and Indicators: By end 2024, all environment parameters and indicators from all environmental sectors has been identified, assessed, monitored and integrated within the environment data monitoring and management system to feed SOE reports ready to be produced in the next four-year period.	- Lack of SOE parameters and indicators identified with no monitoring and assessment implemented. - Review previous SOE reports and identify SOE indicators for the next SOE report.	EIDM1.1: EIDM SOE parameters and indicators are reviewed and developed.	SOE parameters and indicators approved.	List of parameters and indicators compiled.	- ECD Internal review of environment parameters, indicators and previous SOE report. - Consult Environment Stakeholders committee and user groups. - Regular collection of environment data to feed the SOE report.	50K	MELAD-ECD	- KMS - MFMRD - MHMS - KOIL - KNSO - MELAD-ALD - MIA - OB - MICTTD
EIDM2 – Integrated environmental data monitoring and management system: By end 2024, an integrated environmental data monitoring and management system is developed, used for extracting data needed for SOE reports, and easily accessible to ECD staff via offline portal with security measures put in place.	- No integrated environmental data monitoring and management system has been developed. - Lack of data analysis tools. Lack of physical computer hardware.	EIDM2.1: Integrated environment data monitoring and management system developed. EIDM2.2: Data analysis tools and physical computer hardware is to be purchased	System is functional.	System is accessible and used by ECD staff.	- Planning - Designing - Implementing - Testing - Deploying - Maintaining	200K	ECD-MELAD	- EMIS working group. - ECD Data and information Management Committee. - Kiribati Computer and Internet Society.

LOGICAL FRAMEWORK

FOUR-YEAR GOAL (FYG) (BY END 2024)	BASLINE (2020)	TARGETS	INDICATORS (THAT TARGETS HAVE BEEN ACHIEVED)	MEANS OF VERIFYING INDICATORS	ACTIVITIES TO ACHIEVE GOAL & TARGETS	INPUTS (BUDGET) USD	LEAD AGENCY	SUPPORTING AGENCY(IES)
EIDM3 – Environment spatial planning unit: By end 2024, an Environment spatial planning unit is established and fully functional in providing terrestrial, coastal, cultural historical and other thematic maps needed for some reports, climate change impacts, land degradation, and other visual informative reports needed.	No GIS/Spatial Planning Unit established.	EIDM3.1: GIS/Spatial Planning Unit is established.	Unit is approved and established.	Officers exist within the Unit.	- Recruitment of unit's officers. - Establishment of officers TOR. - Produce thematic maps needed for reports.	50K	ECD-MELAD	Kiribati GIS User Group.
EIDM4 – Staff training and capacity building: By end 2024, EIDMS-ECD staff have the knowledge and skills in system development, database development, networking, cyber security, data security, data mining, GIS mapping, drone operation with license and ability to confidently used an integrated environmental data monitoring and management system to import and export data, while all ECD staff are able to use the system.	Lack of knowledge and skills in system development, database development, networking, cyber security, data security, data mining, GIS mapping, drone operation with license and ability to confidently used an integrated environmental data monitoring and management system to import and export data.	EIDM4.1: Improve capacity building on the knowledge and skills needed.	Number of workshops/training courses implemented.	- Verified training certificate. - Staff competency in using the system.	- Training/workshops on: - System development. - Database development. - Networking. - Cyber security. - Data security. - Data mining. - GIS mapping. - Drone operation. - System operation. - Environmental data collection and monitoring. - Short term staff attachments.	100K	ECD-MELAD	MICTTD. MELAD-ALD. Kiribati Computer & Internet Society. EMIS User Group. ECD Data and Information Management committee.
EIDM5 – Environment Survey and Research By the end of 2024, the research and survey unit established and conducting environment related surveys and research for SOE reporting.	- No Environment Research and Survey Unit established. - Lack of research and surveys implemented recognising traditional knowledge, skills and values for environmental conservation.	- Environment Research and Survey Unit established. - Various research and surveys implemented.	- Unit approved and endorsed. - Number of Environment research and surveys implemented.	- Officers exist in a unit. - Environmental research and survey reports approved and endorsed.	- Recruitment of unit's officers. - Establishment of officers TOR. - Produce surveys and research reports plus SOE report. - Work in collaboration with other sectors on joint research to promote activities that contribute to the conservation of thematic areas of the environment.	50k 60k	MELAD-ECD Culture and Museum Division	ECD Stakeholder MELAD-ECD Culture & Museum Division

10 GENDER EQUITY AND SOCIAL INCLUSION PLAN



As outlined in section 4.2 above, SDG 5 aims for gender equality and SDG 10 aims for reduced inequalities amongst all members of society, by 2030 – and these are also key objectives of this KIEP.

Social equity and inclusion do not just relate to gender but to all social groups including elders, youth and vulnerable persons such as disabled persons, and remote communities on outer islands. A fundamental principle of this KIEP is that an ecologically sustainable future can only be achieved with the full and equal participation of, and equal flow of benefits to, all members and sectors of society.

Because of a long history of traditional culture that is based on an inclusive society, where the needs of all members of a village and island are taken care of communally, society in Kiribati is already quite egalitarian compared to many other societies. However, inequality is beginning to manifest with the shift to a less traditional, more cash-based economy.

The population of Kiribati has an almost 50/50 gender balance overall (94.4 males per female for all age groups) (theodora.com), and an ecologically sustainable future cannot be achieved if 50% of the population is not fully and equally involved. Both men and women play significant roles, including traditionally defined roles, in Kiribati society and in traditional sustainable livelihoods.

During the development of this KIEP particular attention was paid to ensure that the local groups that represent women, youth, the disabled and the outer islands had adequate opportunity to communicate their views and needs and to make inputs. These efforts will continue during implementation of the KIEP, through the following mechanisms:

- a. There is a dedicated Thematic Area (TA 9) on *Stakeholder engagement and community involvement for KIEP implementation*, through which all relevant members and sectors of society will be involved.
- b. Technical activities across all Thematic Areas have an explicit requirement to actively solicit balanced participation by genders, and where relevant to the activity including elders, youth, vulnerable persons (such as disabled persons), and remote communities on outer islands.
- c. Detailed records will be kept of participation by gender, social groups, stakeholders and partners in all project activities, including consultation meetings, workshops and training sessions, and these will be disaggregated by gender, social group, sector and other socially useful criteria, to enable assessment of the social inclusiveness of the project.
- d. The MEL Plan (section 11) requires reporting of gender and social inclusion in all MEL reports – which will allow the extent of gender and social inclusion to be monitored and assessed as the KIEP is implemented, and for adaptive management and corrective actions to be taken if necessary.

11 MONITORING, EVALUATION AND LEARNING PLAN

The Monitoring, Evaluation and Learning (MEL) Plan is based in the LogFrames for each TA as presented in section 9 above, with the Targets and Indicators for each Four-Year-Goal (FYG) providing the basis for monitoring and evaluating progress with implementation.

The ECD will organise and lead an annual one-day, KIEP MEL review workshop for each TA, in November each year, involving all members of each TA Working Group. Simultaneously, the ECD will explore the development of the KIEP MEL digital platform. The workshop will systematically review the LogFrames, record progress against each Target and Indicator, and make recommendations for any necessary adaptive management and corrective action for the following year.

A template for the annual MEL assessments is attached in Annex 3.

A report on each KIEP MEL review workshop will be produced by ECD before the end of each year, submitted to the KIEP Implementation Overview Committee (KIOC) and also to Cabinet, distributed to all relevant stakeholders and placed on the ECD web site.

In addition to these annual MEL review workshops, an external evaluation by an independent evaluator (consultant) will be commissioned in the first quarter of each four-year period (2021–2024, 2025–2028, 2029–2032 and 2033–2036). This will allow the KIEP be amended and realigned against the new KDP every four years, based on the evaluation findings.



12 FINANCING AND RESOURCING PLAN

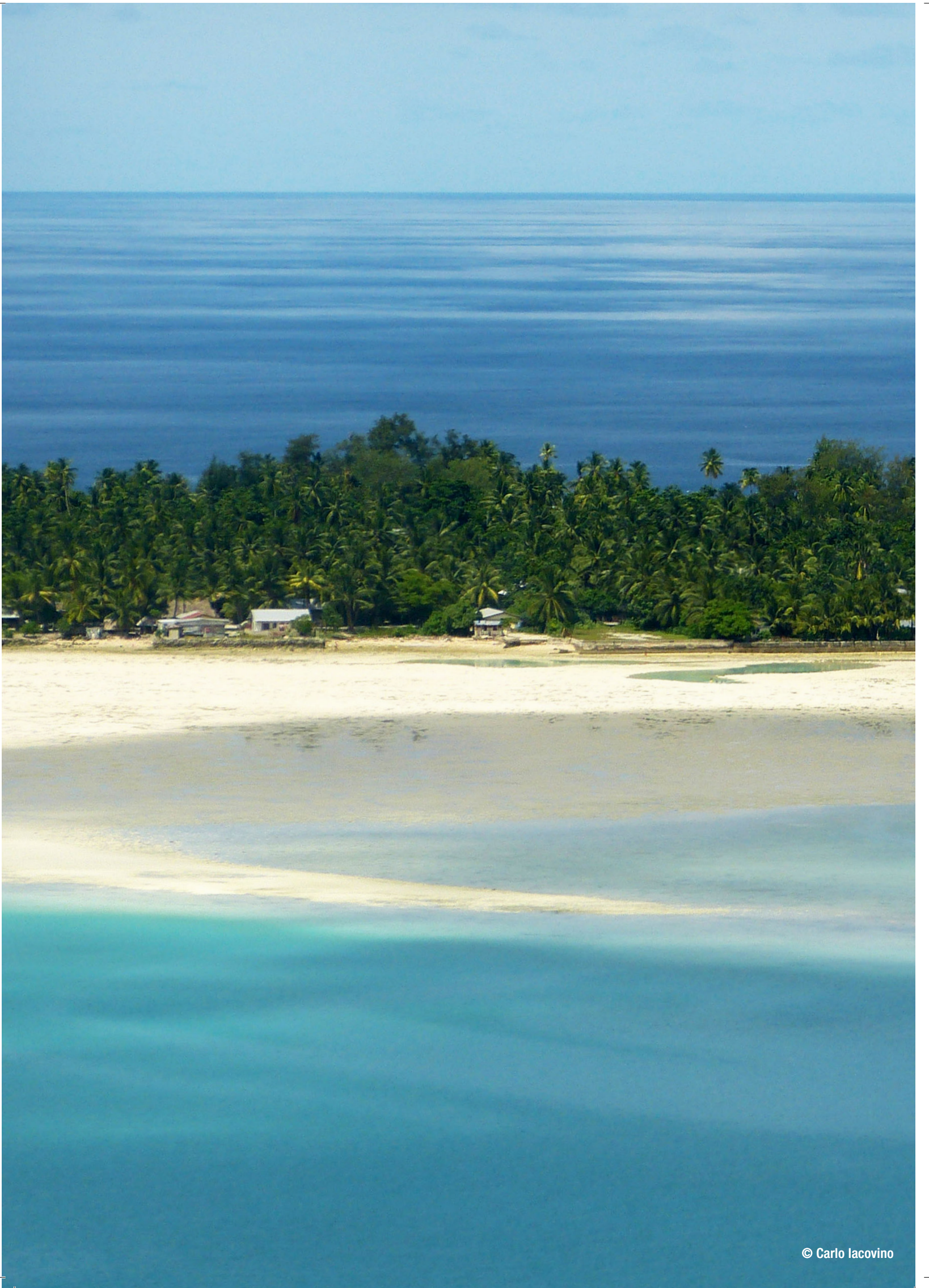
The LFA contained in the SEP in section 9 identifies the estimated budget required for each technical activity under each Thematic Area, for the initial four-year work plan. The budgetary resources required for future four-year work plans have not been identified, and these should be developed during year three of each four-year work plan, based on progress and rates of expenditure.

Specifying the estimated budget required for each technical activity in the first four-year LFA allows ECD and other government partners that are the Lead Agency for certain activities, to assess how much of the activity budget can be covered from their own core budget allocations each year (and how much budget to bid for), and how much will need to be secured from alternative funding mechanisms and external sources.

In addition to allocations by each relevant ministry from their government reoccurring budget allocations, for their respective activities under the KIEP, the following sources will be developed for implementation of relevant parts of the KIEP:

- a. The GEF, Green Climate Fund (GCF), MEA Fund and other development partners.
- b. Philanthropic Foundations (e.g., Packard, Pew, Nippon etc.).
- c. User pays and polluter pays fee systems (including legislative amendments to introduce such fees).
- d. National environmental charge on international visitor arrivals, similar to that used in Palau and New Zealand (subject to COVID-related travel restrictions ending).

A separate Briefing Paper on 'Green Financing Options' has been developed by the KIEP Consultant and submitted to ECD, which provides guidance to GoK on potential options to secure funding for KIEP implementation.



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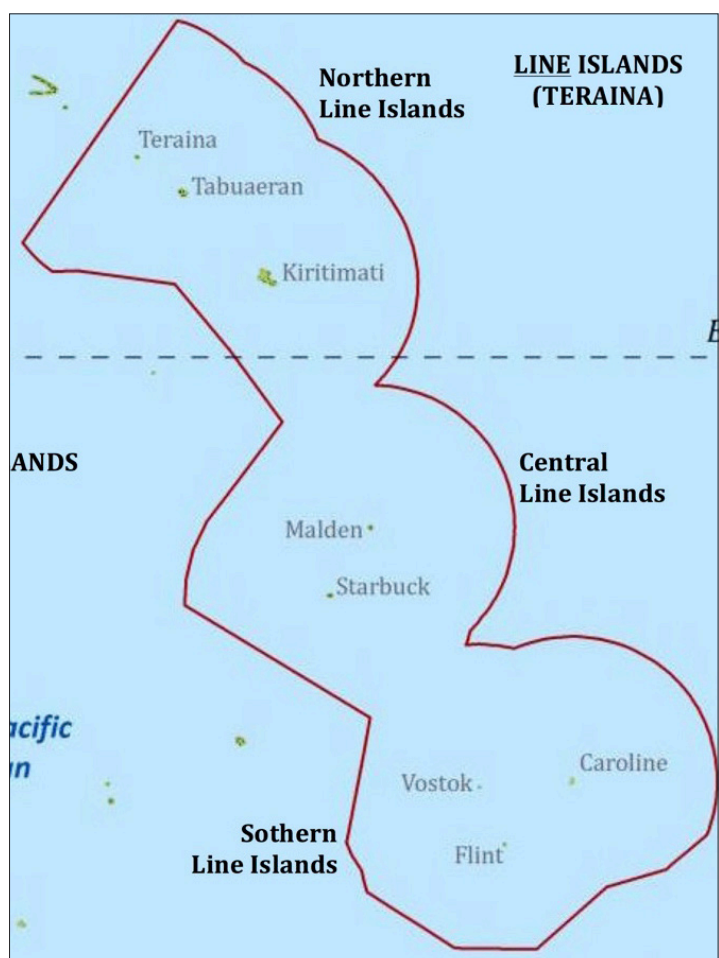
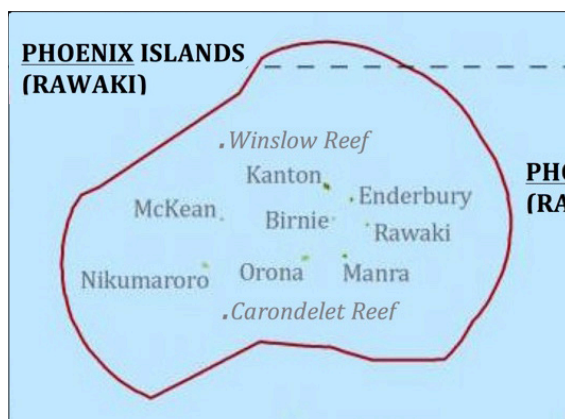
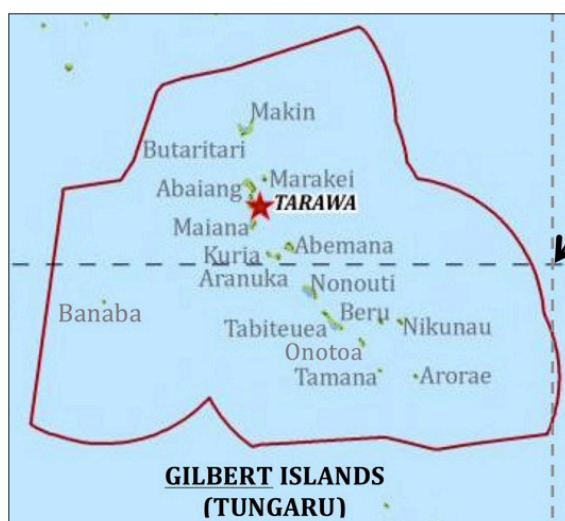
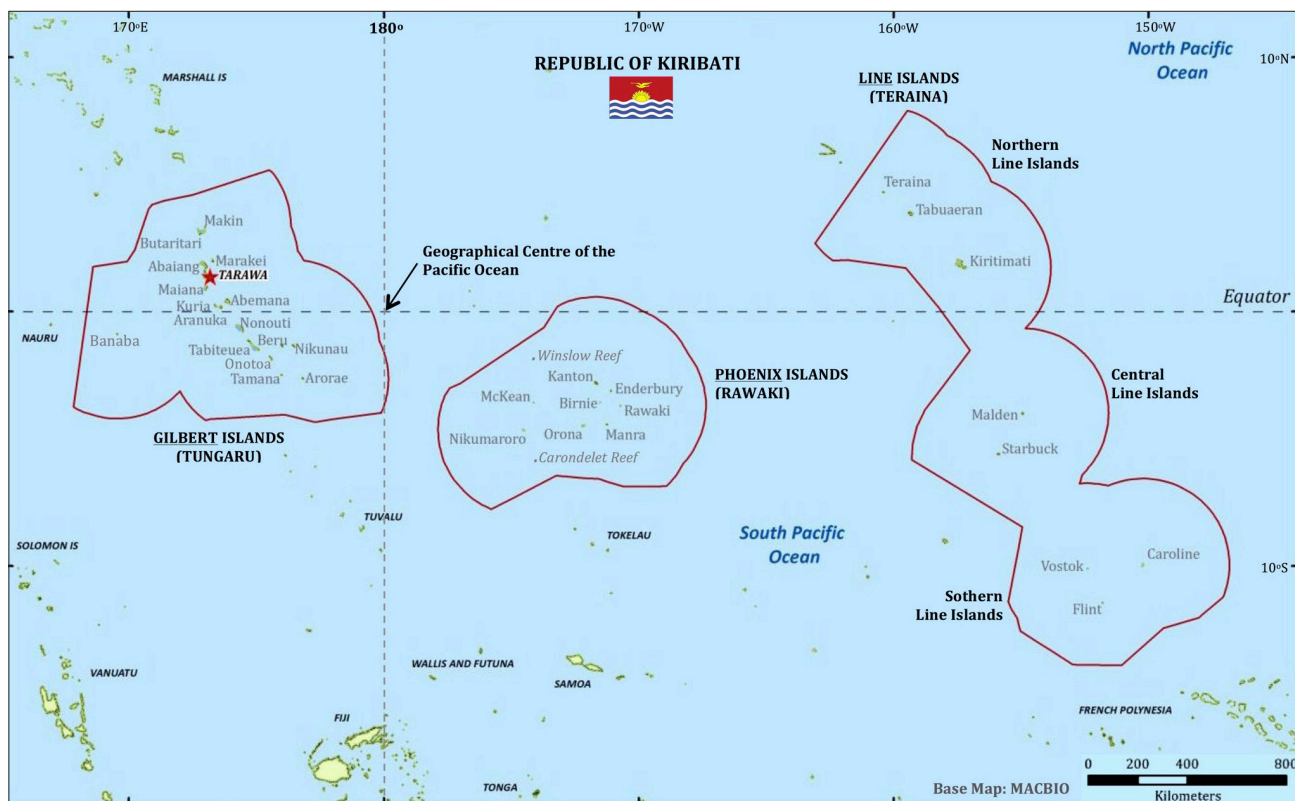
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ANNEX 1 KIRIBATI ISLAND PROFILES



Island Profiles Table – Gilbert Islands

(islands listed from north to south)

(Banaba is a western outlier but included in the Gilbert Group for this report)

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
01. MAKIN Island 03°23'N 173°00'E - Max Elevation: 3 m - Total Area: 14 km² - Dry land: 7.89 km² - Popn²: 1,990 - Density: 252/km²	- Island Type: Atoll Extension. - Makin is actually a northern extension of neighboring Butaritari Atoll (both atolls sit atop the same seamount). - The island is a linear reef feature, 12.3 km long north-south, with five islets rising above the reef. - The two larger islets are inhabited (Makin in the north and Kiebu the second most southerly islet). - The southern-most islet of Onne is habitable but does not have a permanent community. - There is well-developed fringing coral reef around the entire atoll. - There is a large, shallow, saltwater lagoon on Makin Islet, almost fully enclosed but open to the sea on the eastern side. - Dominant vegetation is extensive coconut plantation on all five islets.	- Airstrip: Yes with flights from Tarawa. - Seaport: No constructed facilities. Vessels must cross the reef with beach landings located on the south west of Makin Islet and the west side of Kiebu Islet. - No tourism facilities. - Protestant Church & Island Council maintains guest houses.	- Traditional subsistence: - Fish & shellfish. - Pigs & chickens. - Coconut. - Taro (bwabwai). - Breadfruit. - Banana. - Papaya and other fruits. - Copra production. - A few government & Island Council jobs. - Remittances from family working on Tarawa or overseas. 200 NM EEZ with rich tuna fisheries.	- Climate change-induced sea-level rise causing coastal erosion and saltwater intrusion into freshwater lens and taro (bwabwai) pits. - Construction of causeway across entrance and within the Makin Islet lagoon, reducing lagoonal flushing (Uriam 2011). - Mining of sand and aggregate from shoreline and lagoon. - Over-exploitation of coastal and reef fisheries resources. - Lack of solid waste management. - Lack of water and sanitation facilities. - Reliance on diesel fuel for electricity generation.
02. BUTARITARI Atoll 03°09'N 172°50'E - Max Elevation: 3 m - Total Area 400 km² (mostly lagoon) - Dry land: 13.49 km² - Popn²: 3,224 - Density: 239/km²	- Island Type: Submerging Atoll. - Large 'u-shaped' atoll approx. 30 km across from west to east. - Large, deep lagoon is ringed by continuous reef and an elongated, almost continuous island along the south (with a single break linked by a causeway), and ringed by reef with a few small islets along the north and west. - There are several large openings to the ocean on the western side where the atoll is submerging due to tectonic subsidence – hence the term 'submerging atoll' (the atoll is sinking on one side and the lagoon is not fully enclosed by the encircling reef). - There are 12 village communities, mostly spread linearly along the main southern islet, but also one on Bikaati Islet in the northwest. - The largest village is Taubukinmeang which accommodates the Island Council, airstrip and jetty, on the southwest of the atoll.	- Airstrip: Yes, with flights from Tarawa via Makin. - Seaport: Small jetty on lagoon side at Taubukinmeang on the southwest of the atoll. - The lagoon is deep and can accommodate large ships, although the entrance passages are relatively narrow. - Three guesthouses.	- It is the most fertile of the Gilbert Islands, with relatively good soils (for an atoll) and high rainfall. - Traditional subsistence. - Copra production. - A few government & Island Council jobs. - Remittances from family working on Tarawa or overseas. 200 NM EEZ with rich tuna fisheries.	- Mangroves are well developed along the southern lagoon shores. - Only island in Kiribati to have four different species of mangroves, in a dense forest near Ukiangang Village. - Coral reef along the north of the atoll is remote from village impacts. - Kotabu and Nabina Islets host natural Pisonia forest and seabird rookeries. - Important cultural sites and history, including custom of whale- and dolphin-calling and the 'Kings Pond', connected to the sea by an underground cave, and where ancient Kings would demand various fish species to dine on. - Environmental issues are similar to Makin as listed above.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
03. MARAKEI Atoll ▪ 02°00'N 173°17'E ▪ Max Elevation: 3 m ▪ Total Area: 40 km² (mostly lagoon) ▪ Dry land: 14.23 km² ▪ Popn²: 2,799 ▪ Density: 197/km²	▪ Island Type: Complete Atoll. ▪ Marakei is a very small atoll with the longest axis (north to south) being approx. 15 km. ▪ The central lagoon saltwater but non-tidal, as it is almost completely enclosed, being encircled by two large islands which are separated by two narrow channels. ▪ The channel on the west coast (Baretoa Pass) connect to the sea through the reef, but is extremely narrow and shallow, and is not navigable at low tide. ▪ The channel on the east coast (Reweta Pass) splits the islands but does not connect to the sea through the reef. ▪ There are 8 villages spread around the perimeter of the island, with the main village of Rawannawi located on the northwest coast.	▪ Airstrip: Yes with flights from Tarawa and link to Abaiang. ▪ Seaport: No constructed facilities. There is a gap in the reef and a small boat-landing site on the beach at the main village of Rawannawi, on the northwest coast, near the airstrip. ▪ One Island Council guesthouse.	▪ Traditional subsistence. ▪ A few government & Island Council jobs. ▪ Remittances from family working on Tarawa or overseas. ▪ 200 NM EEZ with rich tuna fisheries.	▪ Environmental issues are similar to Makin as listed above. ▪ Inner lagoon has been impacted by sand and aggregate mining and causeway construction, and reportedly no longer produces fish. ▪ Significant cultural values in that all of Marakei's spiritual guardians are female goddesses. These are Nei Reei who protects the island in the west, Nei Rotebenua protector of the south side, Nei Tangangau protector of the east side, and Nei Naantekimam who protects the island in the north. ▪ It is compulsory for all newcomers to Marakei to make an anticlockwise tour and to stop at the shrines of goddesses to offer tobacco as gifts. ▪ Marakei is also known nationally for its delicious swamp taro 'bwabwai.'



ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
04. ABAIANG Atoll ▪ 01°50'N 172°57'E ▪ Max Elevation: 3 m ▪ Total Area: 340 km² (mostly lagoon) ▪ Dry land: 17.48 km² ▪ Popn²: 5,568 ▪ Density: 318/km²	▪ Island Type: Submerging Atoll. ▪ Large rectangular-shaped atoll with a single, 37 km long main island (Teiro) encircling the entire southern and eastern perimeter of the inner lagoon, and several smaller islets along the northern and western perimeter. ▪ There are several large openings to the ocean on the western side where the atoll is submerging due to tectonic subsidence – hence the term 'submerging atoll' (the atoll is sinking on one side and the lagoon is not fully enclosed by the encircling reef). ▪ There are 16 villages spread around the perimeter of Teirio Island, and also a village each on the much smaller islets of Riboono and Nuotaea. ▪ The main village of Taburao including the Island Council is located on the southeast coast of Teiro Island, near the airstrip.	▪ Airstrip: Yes, with flights from Tarawa and link to Marakai. ▪ Seaport: No constructed facilities. Vessels can access the lagoon from the ocean via Bingham Passage in the western side of the atoll and small boats can land on much of the beach along the inner side of Teiro Islet. ▪ One Island Council guesthouse and to small private guesthouses: ▪ Ouba Islet EcoResort. ▪ Teirio Islet Beach Escape.	▪ Relative to other islands of Kiribati, Abaiang has some important economic advantages. ▪ Its large lagoon supports a striking diversity of coral and fish species, providing plentiful seafood to the local population and attracting tourists from Tarawa. ▪ While the island is prone to drought, in normal years the rainfall is sufficient to support breadfruit, banana and papaya as well as the ubiquitous coconut. ▪ The closeness of Abaiang to Tarawa also facilitates a significant, though largely informal; trade in local food of all types. ▪ However, like all outer islands of Kiribati, Abaiang is basically a subsistence economy. ▪ Copra production. ▪ A few government & Island Council jobs. ▪ Remittances from family working on Tarawa or overseas. ▪ 200 NM EEZ with rich tuna fisheries.	▪ Environmental issues are similar to Makin and other islands as listed above. ▪ Abaiang hosts some excellent coral reef areas. ▪ Climate change-induced sea-level rise impacts are severe – houses in Tebunginako village have been abandoned. ▪ Vegetation is dying off due to increased salt in the water table.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
05. TARAWA Atoll ▪ 01°20'N 173°00'E ▪ Max Elevation: 3 m ▪ Total Area: 500 km² (mostly lagoon) ▪ Dry land: 31 km² ▪ N Tarawa: 15.26 ▪ S Tarawa: 15.76 ▪ Popn²: 63,017 ▪ N Tarawa: 6,629 ▪ S Tarawa: 56,388 ▪ Density: 2,033/km² ▪ N Tarawa: 434/km² ▪ S Tarawa: 3,578/km²	▪ Island Type: Submerging Atoll. ▪ National capital: ▪ Parliament. ▪ State House. ▪ Offices of National Government Ministries. ▪ International airport & seaport. ▪ Diplomatic missions from Australia, China and NZ). ▪ Large triangular-shaped atoll stretching 35 km from south to north, with two distinct divisions – South Tarawa and North Tarawa. ▪ South Tarawa comprises a string of elongated islets stretching along the southern perimeter of the atoll, from Betio in the west to Bonriki in the east – linked by causeways creating a single, interconnected area of land. ▪ South Tarawa hosts all major national political, government and commercial facilities and with a population of 56,000 accounts for over 50% of the overall national population of Kiribati. ▪ North Tarawa comprises a string of elongated islets stretching from Buota, just north of Bonriki, northwards to Naa at that northern tip of the atoll. The islets of North Tarawa are not linked by causeways and must be accessed by boat or the channels crossed at low tide. ▪ The islets of North Tarawa do not have the same population density as South Tarawa, with only 6,600 inhabitants and islands that are larger than in South Tarawa. They resemble the more rural, subsistence communities of the outer islands of Kiribati. ▪ The western side of the atoll is largely open to the ocean, where the atoll is submerging due to tectonic subsidence – hence the term ‘submerging atoll’ (the atoll is sinking on one side and the lagoon is not fully enclosed by the encircling reef).	▪ Airstrip: Yes, international airport at Bonriki, the eastern-most island of South Tarawa. ▪ Seaport: Yes, international seaport at Betio, the western-most island of South Tarawa, served by deep-water channel from the west.	▪ South Tarawa is the economic center of Kiribati and in addition to government hosts all major commercial businesses. ▪ The commercial port is also used by foreign fishing vessels and returns from foreign fishing licences, mainly for tuna and other pelagic species – are a major contributor to the national economy. ▪ North Tarawa has a more subsistence economy, similar to the outer islands of Kiribati. ▪ 200 NM EEZ with rich tuna fisheries.	▪ Environmental issues are similar to Makin and other islands as listed above, except they are much more severe and intense. ▪ The very high population density at South Tarawa, and especially at Bettie and Bairiki, is causing a wide range of significant environmental issues, including major waste management challenges, groundwater and lagoon pollution, major pressures on water and sanitation (Carden 2003), and land degradation (Biribo 2012). ▪ Environmental impacts in South Tarawa have higher human-health implications than on other islands, again because of very high population density.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
06. MAIANA Atoll 00°55'N 173°00'E - Max Elevation: 3 m - Total Area: 212 km² (mostly lagoon): - Dry land: 16.72 km² - Popn²: 1,982 - Density: 118.5/km²	- Island Type: Submerging Atoll. - Small rectangular shaped atoll with a longest axis (north-south) of 14 km, located 44 km south of Tarawa. - There is a single elongated island encircling the eastern and northern sides of the atoll. - The southern point has many uninhabited islets. - The western side of the atoll is largely open to the ocean, where the atoll is submerging due to tectonic subsidence – hence the term ‘submerging atoll’ (the atoll is sinking on one side and the lagoon is not fully enclosed by the encircling reef). - There are 10 villages spread along the coast of the eastern island, from south to north. - The largest village is Bubutei in the south, the Island Council is at Tebangetua in the mid-east and the airstrip is at Tekaranga in the north.	- Airstrip: Yes, with flights from Tarawa. - Seaport: No constructed facilities. Vessels can access the lagoon from the ocean via the open western side of the atoll and small boats can land on much of the beach along the inner side of the islets. - One Island Council guesthouse and one small private guest house – Tateraka Island Bungalows.	- Traditional subsistence. - A few government & Island Council jobs. - Remittances from family working on Tarawa or overseas. - Small-scale tourism from Tarawa including fishing, kayaking and cultural tours. 200 NM EEZ with rich tuna fisheries.	- Environmental issues are similar to Makin and other islands as listed above. - Climate change-induced sea-level rise is causing coastal erosion, with the villages of Tekaranga and Tematantongo being particularly affected (Uriam 2011).
07. ABEMANA Atoll 00°24'N 173°50'E - Max Elevation: 3 m - Total Area: 260 km² (mostly lagoon): - Dry land: 27.4 km² - Popn²: 3,262 - Density: 119/km²	- Island Type: Atoll. - Medium-sized teardrop-shaped atoll with a longest axis (north-south) of 25 km, located 150 km southeast of Tarawa and just north of the Equator. - The island has 3 main islets; the largest and main islet (actually several very close islets linked by causeways) encircles the entire southern, eastern and northern perimeter of the atoll, has 11 villages and is home to most of the population. - Abatiku, an islet located at the north-western reef, and Bliike just south of it, have much smaller populations. - The Island Council is at the largest village of Kariatebike in the mid-east and the airstrip is at Tabiang in the north.	- Airstrip: Yes, with flights from Tarawa. - Seaport: No formally engineered facilities although there is a rock causeway-type jetty at Tekatirirake, just east of the airstrip where cargo is unloaded. - Vessels can access the lagoon from the ocean via the channels on the western side of the atoll and small boats can land on much of the beach along the inner side of the islets. - There are three guest houses/small hotels on Abemama; the Island Council guest house, Abemama Green EcoHotel and Monivae Hotel.	- Traditional subsistence. - A few government & Island Council jobs. - Remittances from family working on Tarawa or overseas. - Small-scale tourism from Tarawa including eco-tourism, cultural tourism, fishing and lagoon, islet and beach attractions. - Some seaweed farms. - Copra. 200 NM EEZ with rich tuna fisheries.	- Abemama has beautiful beaches with a crystal clear blue lagoon, with well-developed and still healthy coral reef ecosystem. - The atoll suffers from the same impacts as listed for Makin and other islands as described above, but generally the environment is in better condition than many other islands. - Cultural heritage values are significant including history of Gilberts Royalty.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
08. KURIA Island 00°13'N 173°24'E - Max Elevation: 3 m - Total Area: 30 km² (inc. reef): - Dry land: 15.48 km² - Popn²: 1,046 - Density: 67.6/km²	- Island Type: Atoll Extension. - Kuria is actually a northern extension of neighboring Aranuka Atoll (both sit atop the same seamount). Kuria is formed by a pair of islets – Buariki and Oneeke, separated by a 20-metre-wide channel, which is crossed by a bridge of the connecting road. - The islands are surrounded by fringing reef, which is broadest on the eastern side. - The main islet, Buariki, has five villages; the admin centre of Buariki itself, plus Marenaua, Bouatoa, Tabontebike and Norauea. - Oneeke Islet has one village – Onneke. - The two islets are relatively wide compared to most islands in the Gilbert group. The widest portion measures 4.26 km from lagoon to the ocean side and the length from north to south is 8.94 km. There are two natural brackish-water ponds at east-southern tip of the main islet. - Kuria is one of the least densely populated islands in Kiribati.	- Airstrip: Yes, with flights from Tarawa and link to Aranuka. - Seaport: No formally engineered facilities although there is a boat landing on the beach through a reef passage on the west side of Buariki. - The Island Council operates a guest house.	- Traditional subsistence. - A few government & Island Council jobs. - Remittances from family working on Tarawa or overseas. 200 NM EEZ with rich tuna fisheries.	- The island suffers from the same impacts as listed for Makin and other islands as described above, but generally the environment is in better condition than many other islands, due to low population density. - The people of Kuria have an effective approach to invasive species. In early European times, imported animals in Kuria were not considered a welcome addition to the ecosystem; they were considered a subject of supernatural fears and were slaughtered and thrown into the lagoon.
09. ARANUKA Atoll 00°09'N 173°35'E - Max Elevation: 3 m - Total Area: 75 km² (mostly lagoon): - Dry land: 13.23 km² - Popn²: 1,125 - Density: 85/km²	- Island Type: Complete Island Atoll. - By local tradition, Aranuka is the central island of the Gilbert group. - Aranuka is a triangular-shaped atoll, with one large island – Buariki – encircling the entire south-east perimeter of the atoll, and Takaeang located on the northwest point of the atoll. - Both islets are unusually large for an atoll of this size, and are connected by long sandbanks on the northern side and an underwater reef crest on the southern side, which also has a wide pass to the lagoon in the centre.	- Airstrip: Yes, with flights from Tarawa and link to Kuria. - Seaport: No constructed facilities. Vessels can access the lagoon from the ocean via the reef passage on the western side of the atoll and small boats can land on much of the beach along the inner side of the islets. - The Island Council operates a guest house.	- Traditional subsistence. - A few government & Island Council jobs. - Remittances from family working on Tarawa or overseas. 200 NM EEZ with rich tuna fisheries.	- Aranuka is known for its old stand of <i>Rhizophora stylosa</i> mangroves that have grown as tall as coconut trees (15 m+) and are now a breeding site for birds. These mangroves can be found towards the northern end of mainland Aranuka. - Aranuka has white sandy beaches and blue waters, although the lagoon is not as biological diverse or productive as some of the nearby, larger atolls. - The island suffers from the same impacts as listed for Makin and other islands as described above, but generally the environment is in better condition than many other islands, due to low population density.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
10. NONOUTI Atoll ▪ 00°40'S 174°20'E ▪ Max Elevation: 3 m ▪ Total Area: 645 km² (mostly lagoon): ▪ Dry land: 21 km² ▪ Popn²: 2,743 ▪ Density: 130/km²	▪ Island Type: Submerging Atoll. ▪ Nonouti is the 3rd largest in the Gilbert Islands and the 5th largest in Kiribati overall. ▪ Like many of the larger atolls in the Gilbert Group, there is a continuous, elongated island linked to a 'string' of smaller islets by causeways, ringing part of the perimeter of the atoll – in this case along the whole eastern perimeter. ▪ The western side of the atoll is largely open to the ocean, where the atoll is submerging due to tectonic subsidence – hence the term 'submerging atoll' (the atoll is sinking on one side and the lagoon is not fully enclosed by the encircling reef). ▪ It is the island where the Catholic religion was first established in Kiribati, in 1888. ▪ There are 9 villages spread linearly along the main islands, and the government station is located in the village of Matang.	▪ Airstrip: Yes, with flights from Tarawa. ▪ Seaport: No constructed facilities. Vessels can access the lagoon from the ocean via the reef passage on the western side of the atoll and small boats can land on much of the beach along the inner side of the islets. ▪ The Island Council operates a guest house.	▪ Traditional subsistence. ▪ A few government & Island Council jobs. ▪ Remittances from family working on Tarawa or overseas. ▪ 200 NM EEZ with rich tuna fisheries.	▪ There is an islet on the northwest side of the atoll called Noumatong, which is uninhabited and is reserved as a bird sanctuary. ▪ The island suffers from the same impacts as listed for Makin and other islands as described above, but generally the environment is in better condition than many other islands, due to low population density.



ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
11. BANABA Island ■ 00°51'S 169°32'E ■ Max Elevation: 81 m ■ Total Area: 6 km ² : ■ Dry land: 6 km ² ■ Popn ² : 268 ■ Density: 44.7/km ²	■ Island Type: Raised coral island. ■ Being a 'western outlier', geographically, Banaba is not actually part of the Gilbert Group, but is grouped in this table as it is closer to the Gilberts than other parts of Kiribati. ■ Banaba is a very small, remote, solitary raised coral island located over 500 km west of the Gilbert Island chain and is the western-most island of Kiribati. It is 298 km east of Nauru (a similar raised coral island but a separate country). ■ The highest point on the island is also the highest point in Kiribati, at 81 m. ■ Along with Nauru to the west and Makatea in French Polynesia, Banaba is one of the three important elevated phosphate-rich islands in the Pacific. ■ The indigenous population of Banaba has been subjected to several major impacts throughout history, including a three-year drought from 1873 which killed over 75% of the population, massacre by Japanese troops during World War II and relocation to Rabi Island in Fiji by British colonial authorities at the end of the war, with subsequent waves of emigration in 1977 and 1981-1983. ■ Today, more Banabans live on Rabi Island in Fiji than on Banaba itself. On Rabi Island the names of settlements are the same authentic four names from Banaba Island. ■ Banaba Island is a political anomaly. Despite being part of Kiribati, its municipal administration is by the Rabi Council of Leaders & Elders, which is based on Rabi Island in Fiji.	■ Airstrip: No. ■ Seaport: Yes – small harbor constructed on the southeast coast.	■ Traditional subsistence. ■ A few government & Island Council jobs. ■ Remittances from family on Tarawa or overseas. ■ 200 NM EEZ with rich tuna fisheries.	■ Because of its higher, rocky nature Banaba is not as susceptible to the coastal erosion and other impacts of climate change-induced sea-level rise as the low-lying and more dynamic atolls of Kiribati. ■ Banaba is prone to drought, as it is a high island with no natural streams and no water lens. A three-year drought starting in 1873 killed over three quarters of the population and wiped out almost all the trees (Office of Te Beretitenti & T'Makei Services 2012b). ■ The phosphate mining (for fertiliser) carried out from 1900 to 1979 stripped away 90% of the island's surface, the same process that occurred on Nauru from 1907 to the 1980s. ■ The fringing coral reef is extremely narrow and drops away steeply to very deep ocean around the island.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
12. TABITEUEA Atoll ■ 01°20'S 174°47'E ■ Max Elevation: 3 m ■ Total Area: 700 km ² (mostly lagoon): ■ Dry land: 38 km ² ■ N Tabiteuea: 26 ■ S Tabiteuea: 12 ■ Popn ² : 5,261 ■ N Tabiteuea: 3,995 ■ S Tabiteuea: 1,306 ■ Density: 138.5/km ² ■ N Tabiteuea: 153.7/km ² ■ S Tabiteuea: 108.8/km ²	■ Island Type: Submerging Atoll. ■ A long, narrow atoll with a reef and islets along the eastern perimeter, stretching 67 km from north to south, and a long lagoon which is wider in the south and narrows to the north, with submerged reef largely open to the ocean along the western perimeter. ■ There are two main islands – Eanikai (North Tabiteuea) and Nuguti (South Tabiteuea), and numerous smaller, uninhabited islets in between along the eastern rim of the atoll. ■ N Tabiteuea has 12 villages with Island Council at Bakokoia just north of Utiroa. ■ S Tabiteuea has 6 villages with Island Council at Buariki. ■ “Tabiteuea” is Gilbertese for “no chief allowed” – the island is traditionally egalitarian.	■ Airstrip: Yes x 2 (one each on both North & South Tabiteuea) with links to Tarawa. ■ Seaport: No constructed facilities. Vessels can access the lagoon from the ocean via the open western side of the atoll and small boats can land on much of the beach along the inner side of the islets. ■ There is a small land reclamation built into to the lagoon near Bakokoia on North Tabiteuea which could form a wharf, however surrounding water depths are very shallow. ■ There is an Island Council guesthouse and a private guesthouse on North Tabiteuea and an Island Council guesthouse only on South Tabiteuea.	■ Traditional subsistence. ■ A few government & Island Council jobs. ■ Remittances from family on Tarawa or overseas. ■ Limited tourism. ■ 200 NM EEZ with rich tuna fisheries.	■ Tabiteuea has a rich cultural history. ■ The bones and skull of a well-known warrior named Kourabi are well looked after by villagers of Buota until today. ■ The story of Ten Nnabakana (stone warriors) erected between Teabuaeroa and Biken-te-Inai Islet, are still standing today. ■ Customary fisheries management practices, both reef/lagoon and offshore, are still strong on Tabiteuea. ■ The coral reefs and lagoon habitats of Tabiteuea are diverse and productive and there are significant mangroves in some areas along the lagoon shore. ■ The island suffers from the same impacts as listed for Makin and other islands as described above, and coastal erosion is quite severe in some areas, causing relocation of infrastructure (Uriam, 2011). ■ The freshwater lenses of the islets are suffering depletion and salinisation.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
13. BERU Island ▪ 01°20'S 175°59'E ▪ Max Elevation: 6 m ▪ Total Area: 56 km² (inc. lagoon) ▪ Dry land: 17.65 km² ▪ Popn²: 2,051 ▪ Density: 116/km²	▪ Island Type: Emergent Seamount with Reef. ▪ Beru Island is the summit of a seamount that emerges above the sea surface. While a coral reef has developed around the island, including a shallow coral lagoon on the western side (Nuka Lagoon), it does not have the fully developed structure of a true coral atoll. ▪ The island is 15 km long (NW-SE) and 4.75 km wide at the widest point (NE-SW). ▪ There are 2 main settlements – Rongorongo in the north and Taubukinberu in the south, which hosts the Island Council. There are several smaller settlements along the island.	▪ Airstrip: Yes, with links to Tarawa. ▪ Seaport: There is a blasted, very narrow boat passage through the reef at the northwest end of the island leading to a small, reclaimed wharf and boat harbor at Tebikeeriki. ▪ There is also a blasted, very narrow boat passage through the reef at the southwest end of the island leading to the beach at Taboiaki. ▪ There is an Island Council guesthouse.	▪ Traditional subsistence. ▪ Milkfish ponds. ▪ A few government & Island Council jobs. ▪ Remittances from family on Tarawa or overseas. ▪ 200 NM EEZ with rich tuna fisheries.	▪ Extensive spit development has created the nearly enclosed Tabiang Lagoon at the north end where mangroves are present. ▪ A small lagoon or barachois at the northern tip is surrounded by man-made fishponds to hold Milkfish, as is a similar feature at the south end of the islet. ▪ A 3 km (2 mi) long barachois with extensive mangroves occupies the interior south of Nuka Lagoon. A causeway is present across the inlet mouth. ▪ There are indications that fish, crab and shellfish are declining due to closure of inland lagoons at both ends of the island with causeways. Mangroves and ironwood trees are dying (Uriam, 2011). ▪ The windward side of the atoll is experiencing coastal erosion due to wave action (Tebano and Abeta 2008). ▪ The construction of causeways has been thought to change the currents in the lagoon and along the shoreline.¹ ▪ Frequent and stronger sea surges are damaging the seawalls that have been constructed by the islanders.¹ ▪ Aggregate mining and the removal of coral boulders is exacerbating coastal erosion (Tebano and Abeta 2008).

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
14. NIKUNAU Island ▪ 01°20'S 176°27'E ▪ Max Elevation: 3 m ▪ Dry land: 17.63 km ² ▪ Popn ² : 1,789 ▪ Density: 101.5/km ²	▪ Island Type: Emergent Seamount Island. ▪ Nikunau Island is the summit of a seamount that emerges above the sea surface. While a narrow, fringing coral reef has developed around the island, there is no central coral lagoon or typical ring-reef structure of a true coral atoll. ▪ The island consists of two parts, a larger area in the northwest and a smaller area in the southeast, joined by an isthmus about 150 m wide. ▪ The island is 14 km long (NW-SE) and 2.6 km wide at the widest point. ▪ The northern part accommodates the main service infrastructures such as the council offices, airstrip, seaport and the villages of Muribenua, Tabutoa, Rungataa and Mwanriiki. ▪ The southern part accommodates the remaining two villages of Nikumanu and Tabomatang. ▪ The Island Council is located at Bukerua in the village of Rungataa.	▪ Airstrip: Yes, with links to Tarawa via Beru. ▪ Seaport: There is a blasted, very narrow boat passage through the reef on the west side of the island and several natural reef passages and beach landing sites along the west coast, which is the leeward side. ▪ There is a church-run guesthouse.	▪ Traditional subsistence. ▪ The reef is limited and fishing focuses mainly on pelagic species. ▪ Copra. ▪ A few government & Island Council jobs. ▪ Remittances from family on Tarawa or overseas. ▪ 200 NM EEZ with rich tuna fisheries.	▪ There are several landlocked, hyper-saline, shallow lagoons within the island. ▪ Vegetation on Nikunau is moderately dense and consists largely of coconut palms and pandanus. ▪ The island suffers from the same impacts as listed for Makin and other islands as described above.
15. ONOTOA Atoll ▪ 01°53'S 175°34'E ▪ Max Elevation: 3 m ▪ Total Area: 117 km ² (mostly lagoon): ▪ Dry land: 15.62 km ² ▪ Popn ² : 1,393 ▪ Density: 89.2/km ²	▪ Island Type: Submerging Atoll. ▪ A long, narrow, 'double curved' atoll with a reef and islets along the eastern perimeter, stretching 20 km from north to south, and a wide lagoon which is wider in the south (7 km wide), with submerged reef largely open to the ocean along the western perimeter. ▪ There are three main larger islands, one in the north and two in the south, linked by a series of causeways across smaller islets. ▪ The population of Onotoa is very evenly spread across the seven villages, with no one village predominating – the largest village of Buariki has 299 people which is not quite double the population of the smallest village, Tekawa.	▪ Airstrip: Yes, with links to Tarawa. ▪ Seaport: There are two small boat landings on the western leeward coast, one in the north and one in south of the atoll. ▪ There is an Island Council guesthouse.	▪ Traditional subsistence. ▪ The reef and lagoon are extensive and highly productive. ▪ Copra. ▪ A few government & Island Council jobs. ▪ Remittances from family on Tarawa or overseas. ▪ 200 NM EEZ with rich tuna fisheries.	▪ The island suffers from the same impacts as listed for Makin and other islands as described above.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
16. TAMANA Island ▪ 02°30'S 175°59'E ▪ Max Elevation: 3 m ▪ Dry land: 4.73 km² ▪ Popn²: 1,104 ▪ Density: 233.4/km²	▪ Island Type: Emergent Seamount Island. ▪ Tamana Island is the smallest island in the Gilbert Islands and the smallest inhabited island in Kiribati overall. ▪ It is the summit of a seamount that emerges above the sea surface. While a narrow, fringing coral reef has developed around the island, there is no central coral lagoon or typical ring-reef structure of a true coral atoll. ▪ The island is a small elongate rectangle with a length of 6 km aligned northwest to southeast, and an average width of just under 1 km. ▪ There are three villages – Barebuka in the north, Bakaakaa in the center, which hosts the Island Council and facilities, and Bakarawa in the south.	▪ Airstrip: Yes with links to Tarawa. ▪ Seaport: There is a blasted, very narrow boat passage through the reef at the entre of the west coast leading to a beach landing at Bakaakaa. ▪ There is an Island Council guesthouse.	▪ Traditional subsistence with a very high reliance on pelagic fishing. ▪ A few government & Island Council jobs. ▪ Remittances from family on Tarawa or overseas. ▪ 200 NM EEZ with rich tuna fisheries.	▪ In Kiribati, people sometimes describe an island as “te aba n aine” (a women’s island) if it has abundant food resources that are traditionally collected by women, a wide lagoon reef rich in shellfish, good soil, and regular rainfall which can support breadfruit, banana, pawpaw and other crops which grow close to the house. Tamana has none of these environmental qualities and is an extreme example of “te aba ni mwane” – a man’s land where lazy people cannot survive. ▪ Tamana has no lagoon at all and a narrow reef, with the reef area per person being the least of any of the islands of Kiribati – less than 2,000 m² per person. ▪ The island has poor soil and is prone to droughts. ▪ Given the environmental constraints of the island, the men of Tamana fish almost every day when the weather permits, and pride themselves on being the hardest working community in Kiribati, and the first to rise each morning. ▪ Like all of the southern islands Tamana has very variable rainfall with frequent and prolonged droughts. However, the water lens of Tamana is unusually large and deep, covering more than 80% of the island’s land area and with a maximum depth of over 16 metres (Office of Te Beretitenti & T’Makei Services 2012a). ▪ This water resource is enough to sustain the people of Tamana through even the most severe drought (Office of Te Beretitenti & T’Makei Services 2012a). ▪ The island suffers from the same impacts as listed for Makin and other islands as described above, and waste management an increasingly significant problem.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
17. ARORAE Island ■ 02°38'S 176°49'E ■ Max Elevation: 3 m ■ Dry land: 9.48 km ² ■ Popn ² : 1,011 ■ Density: 106.7/km ²	■ Island Type: Emergent Seamount Island. ■ Arorae is the southern-most of the Gilbert Group – and is the summit of a seamount that emerges above the sea surface. While a narrow, fringing coral reef has developed around the island, there is no central coral lagoon or typical ring-reef structure of a true coral atoll. ■ The island is a small elongate ‘cigar shape’ with a length of 9 km aligned northwest to southeast, and an average width of just under 1 km. ■ There are only two villages on the island, Tamaroa in the north and Roreti in the south. ■ The government station, with Island Council, schools and services, is located midway, between the two villages, at Taribo.	■ Airstrip: Yes with links to Tarawa. ■ Seaport: There is a blasted, very narrow boat passage through the reef at the entre of the west coast leading to a beach landing at Taribo. ■ There is an Island Council guesthouse.	■ Traditional subsistence with a very high reliance on pelagic fishing. ■ A few government & Island Council jobs. ■ Remittances from family on Tarawa or overseas. ■ 200 NM EEZ with rich tuna fisheries.	■ The island has similar environmental characteristics and issues to Tamana as described above. ■ Because it is a more remote outer island within the Gilbert line of the Republic of Kiribati, it is known for maintaining a more traditional culture held together mostly under the authority of “unimwane” (village elders). ■ At the northern tip of Arorae is a set of stones (circa 1000 – 1500 AD) that mark out the initial directions for voyages to the other islands – Tamana, Nikunau, Beru and Onotoa. These stones are no longer visible from the sea but are still called “Te Atibu ni Borau” or “navigational stones”.

1 Includes atoll lagoon and reef.

2 Based on last national census in 2015. Next census is in late 2020.



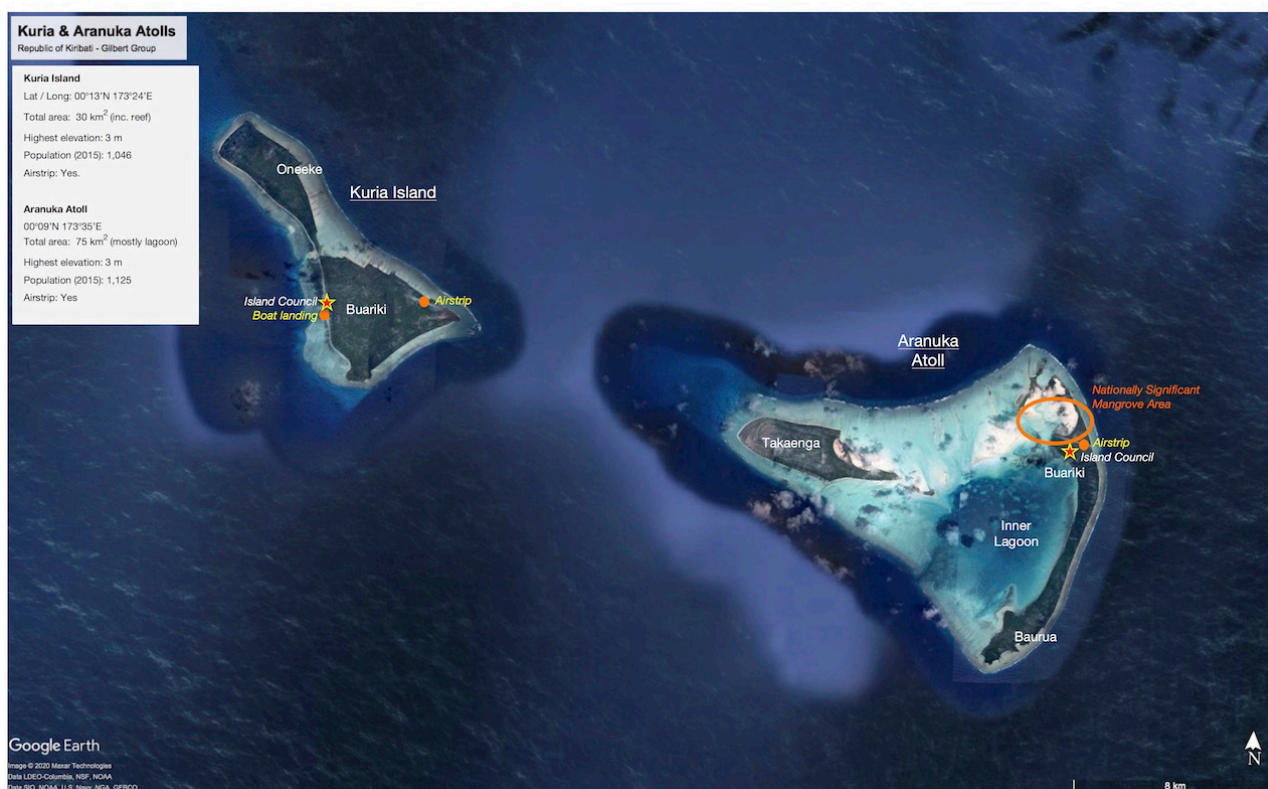
Satellite Maps – Gilbert Islands

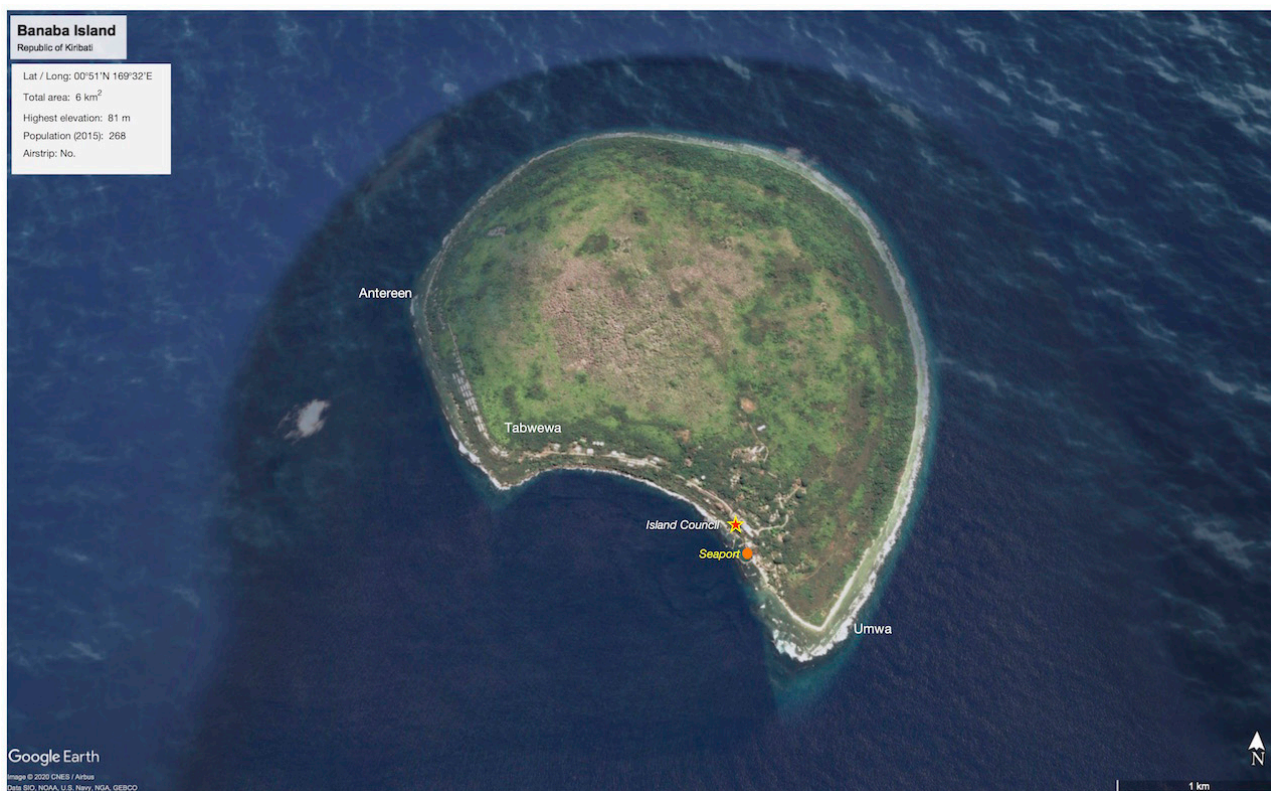
(Islands listed from north to south)





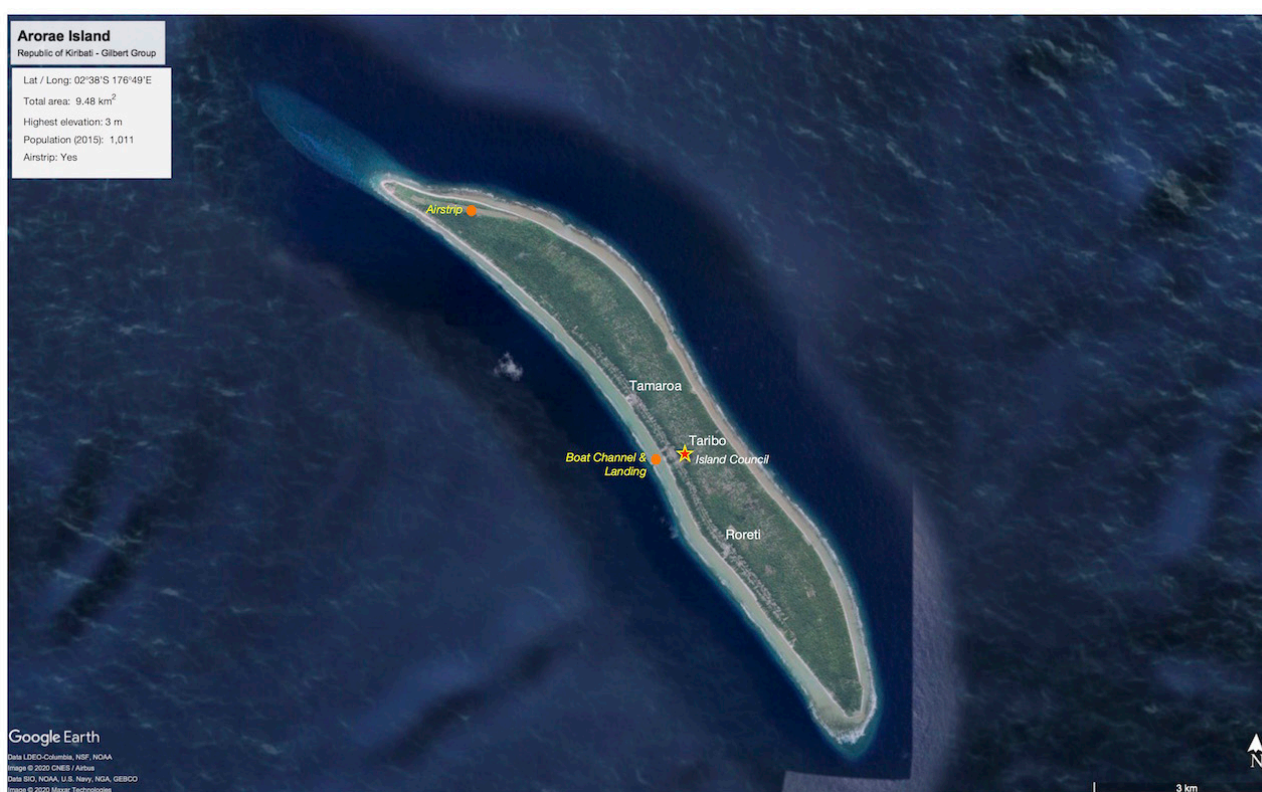












Island Profiles Table – Phoenix Islands

(islands listed from north to south)

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
01. KANTON Atoll ▪ 02°49'S 171°40'W ▪ Max Elevation: 3 m ▪ Total Area: 69 km² (mostly lagoon) ▪ Dry land: 40 km² ▪ Popn²: 20 ▪ Density: 0.5/km²	▪ Island Type: Complete Atoll. ▪ Kanton is the largest, northern-most and only inhabited island in the Phoenix Group. ▪ It is a classic atoll structure with a broad (but relatively shallow) inner lagoon, almost completely encircled by a coral reef and a continuous narrow island, with natural reef passage from the open ocean at the north-west part of the atoll. ▪ The longest axis is 14.5 km (NW to SE). ▪ Kanton Atoll has a long history as a fueling stop for long-haul trans-Pacific flights between the USA and Australia and New Zealand. It was jointly administered by the US and UK until being absorbed into Kiribati in 1979. ▪ Today there is a small population of 20 and much of the infrastructure left from the US-UK era is in ruin.	▪ Airstrip: Yes but no scheduled flights. ▪ Seaport: Reef passage and wharf facilities left from the US-UK administration days.	▪ Traditional subsistence with a very high reliance on seafood. ▪ 200 NM EEZ with rich tuna fisheries.	▪ Part of Phoenix Islands Protected Area (PIPA). ▪ As the only island in the Phoenix Group to be inhabited and have an airstrip and a seaport, Kanton is the only land-base for supporting research, enforcement management activities throughout the PIPA. ▪ Much of Kanton's land surface is bare coral rock, sparsely covered with shrubs and bunch grass. Larger trees are only found near the village site. ▪ Rainfall is sparse, and there is no freshwater on Kanton, which is a problem for inhabitants. Rainwater is caught in cisterns. ▪ The lagoon has high biological productivity.
02. ENDERBURY Island ▪ 03°08"S 171°05"W ▪ Max Elevation: 7 m ▪ Total Area: 7 km² ▪ Dry land: 7 km² ▪ Popn²: None. ▪ Density: N/A.	▪ Island Type: Emergent Seamount Island. ▪ Enderbury is the summit of a seamount that emerges above the sea surface. The fringing coral reef is extremely narrow due to the near vertical drop-off to deep ocean, preventing limited surface area for coral reef development. ▪ The island is a small elongate rectangle with a length of 5 km aligned north to south, and an average width of just under 1.3 km.	None	▪ None. ▪ The island was mined for phosphate (guano) by US interests in the late 1800s. ▪ 200 NM EEZ with rich tuna fisheries.	▪ Part of PIPA. ▪ Identified as the most important green sea turtle nesting area in the Phoenix Islands group. ▪ It is also an important roosting and nesting site for a range of seabird species. ▪ The terrestrial environment on Enderbury is dry and desolate with limited, low-lying vegetation. ▪ There are several depressions left from historical phosphate mining that have become hyper-saline ponds. ▪ There is an abundant rat population.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
03. BIRNIE Island ■ 03°35'S 171°33'W ■ Max Elevation: 5 m ■ Total Area: 0.7 km ² ■ Dry land: 0.7 km ² ■ Popn ² : None ■ Density: N/a	■ Island Type: Emergent Seamount with Reef. ■ Birnie is the summit of a seamount that emerges above the sea surface. The fringing coral reef is extremely narrow but a submerged reef extends 1 km to the south of the island atop part of the seamount that is below the sea surface. ■ The island is a small, elongated oval shape with a longer axis of 1.3 km and a width of 700 m.	None	■ None. ■ 200 NM EEZ with rich tuna fisheries.	■ Part of PIPA. ■ The terrestrial environment on Birnie is dry and desolate with limited, low-lying vegetation. ■ There is a small, shallow lagoon in the southeast part of the island which is all but dried up. ■ Important roosting and nesting site for a number of seabird species. ■ Rats were a problem but have been eradicated. ■ Turtle nesting island.
04. RAWAKI Island ■ 03°43'S 170°43'W ■ Max Elevation: 6 m ■ Total Area: 0.8 km ² ■ Dry land: 0.8 km ² ■ Popn ² : None ■ Density: N/a	■ Island Type: Emergent Seamount with Reef. ■ Rawaki is the summit of a seamount that emerges above the sea surface. The fringing coral reef is extremely narrow due to the near vertical drop-off to deep ocean, preventing limited surface area for coral reef development. ■ The island is a small, teardrop oval shape with a longer axis of 1.2 km and a widest axis of 800 m.	None	■ None. ■ The island was mined for phosphate (guano) by US interests in the late 1800s. ■ 200 NM EEZ with rich tuna fisheries.	■ Part of PIPA. ■ The terrestrial environment on Rawaki is dry and desolate with limited, low-lying vegetation. ■ There is a small, shallow, hyper-saline lagoon in the eastern part of the island which is all but dried up. ■ Important roosting and nesting site for a number of seabird species. ■ Never invaded by rats, which has protected the seabird populations. ■ Turtle nesting island.
05. McKean Island ■ 03°36'S 174°07'W ■ Max Elevation: 5 m ■ Total Area: 0.7 km ² ■ Dry land: 0.7 km ² ■ Popn ² : None ■ Density: N/a	■ Island Type: Emergent Seamount. ■ McKean is the summit of a seamount that emerges above the sea surface. The fringing coral reef is extremely narrow due to the near vertical drop-off to deep ocean, preventing limited surface area for coral reef development. ■ The island is a small oval shape with a diameter of 1 km.	None	■ None. ■ The island was mined for phosphate (guano) by US interests in the late 1800s. ■ 200 NM EEZ with rich tuna fisheries.	■ Part of PIPA. ■ McKean hosts the world's largest nesting population of lesser Frigate bird (<i>Fregata ariel</i>) with up to 85,000 birds (King 1973). ■ 29 other species of birds have been described as using the island. ■ In 2002, the wreck of the fishing trawler <i>Chance</i> on McKean released the Asian rat onto the island, which decimated the native populations of storm petrels, blue noddies and other petrels and shearwaters (Jamieson 2012). ■ In 2008 NZAID funded the rat eradication of McKean Island, which was proven successful in late 2009 (Jamieson 2012). ■ McKean has no sources of fresh water, and no water lens. ■ Turtle nesting island.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
06. MANRA Island ▪ 04°27'S 171°16'W ▪ Max Elevation: 6 m ▪ Total Area: 4.4 km ² ▪ Dry land: 4.4 km ² ▪ Popn ² : None ▪ Density: N/a	▪ Island Type: Emergent Seamount. ▪ Manra is the summit of a seamount that emerges above the sea surface. The fringing coral reef is extremely narrow due to the near vertical drop-off to deep ocean, preventing limited surface area for coral reef development. ▪ The island is a small, four-pointed oval shape with a longer axis of 4.3 km and a widest axis of 4.2 km. ▪ There is a central, shallow, hyper-saline lagoon. ▪ Manra was depopulated between 1958 and 1963 and has remained uninhabited since.	None	▪ None. ▪ Manra was formerly a functioning copra plantation, though it is no longer. ▪ The island was mined for phosphate (guano) by US interests in the late 1800s. ▪ 200 NM EEZ with rich tuna fisheries.	▪ Part of PIPA. ▪ Bird life is similar to the other Phoenix Islands but has been described as “less abundant”. ▪ Rats are plentiful on the island, which also supports colonies of feral dogs, pigs and cats, all of which will impact on bird populations. ▪ Unlike some of the other Phoenix Islands, Manra contains definite evidence of prehistoric inhabitation, in the form of at least a dozen platforms and remains of enclosures in the northeast and northwest portions of the island. ▪ Bishop Museum estimates that two groups of people were present there, one from eastern Polynesia, the other from Micronesia. ▪ Wells and pits from these early inhabitants were also found.
07. ORONA Atoll ▪ 04°31'S 172°11'W ▪ Max Elevation: 9 m ▪ Total Area: 37 km ² ▪ Dry land: 3.9 km ² ▪ Popn ² : None ▪ Density: N/a	▪ Island Type: Complete Atoll ▪ Orona is a small, fully enclosed, rectangular atoll with a central lagoon encircled by reef and an almost continuous series of islets around the perimeter. ▪ There are several passages across the reef connecting the lagoon to the open ocean; however these are extremely narrow and shallow. ▪ The longest axis (north east to south west) is 9.5 km and the width is 4 km. ▪ Although occupied at various times during the past, including as late as 2004, Orona is uninhabited today.	None	▪ None. ▪ Orona was formerly a functioning copra plantation, though it is no longer. ▪ 200 NM EEZ with rich tuna fisheries.	▪ Part of PIPA. ▪ Turtle nesting island. ▪ Orona is covered with coconut palms (mostly on the western side). ▪ The remainder of the atoll is covered with scrub forest, herbs, and grasses, with a maximum height of 6–12 metres. ▪ Feral cats exist on the island, together with rats, pigs, and dogs. Ducks and chickens were raised by the former inhabitants, but it is unknown whether any remain. ▪ Like Manra, Orona contains evidence of prehistoric Polynesian inhabitation. An ancient stone marae stands on the eastern tip of the island, together with ruins of shelters, graves and other platforms.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL ISSUES
08. NIKUMARORO Atoll ■ 04°40'S 174°32'W ■ Max Elevation: 3 m ■ Total Area: 13 km ² ■ Dry land: km ² ■ Popn ² : None ■ Density: /km ²	■ Island Type: Complete Atoll ■ Nikumaroro is a small, fully enclosed, elongated atoll with a central lagoon encircled by reef and an almost continuous pair of islets around the perimeter. ■ There are no passages through the reef connecting the lagoon to the open ocean; however a small boat passage has been blasted through the reef on the west of the atoll, allowing small boats to land on the seaward beach of the atoll's south-west islet. ■ The longest axis (north west to south east) is 7.4 km and the average width is 2 km. ■ It is the southern-most of the Phoenix Islands.	None	■ None. ■ Nikumaroro was formerly a functioning copra plantation, though it is no longer. ■ 200 NM EEZ with rich tuna fisheries.	■ Part of PIPA. ■ Thick scrub and <i>Pisonia</i> forest cover the land surface. ■ Coconut palms remain from the attempts to operate a plantation on the island from 1893–1894 and later 1938–1963. ■ The scarcity of fresh water on Nikumaroro has proven problematic for residents in the past, and contributed directly to the failure of a British project to colonise the island from 1938–1963. ■ The atoll has populations of coconut crabs and migratory birds, and rats abound.

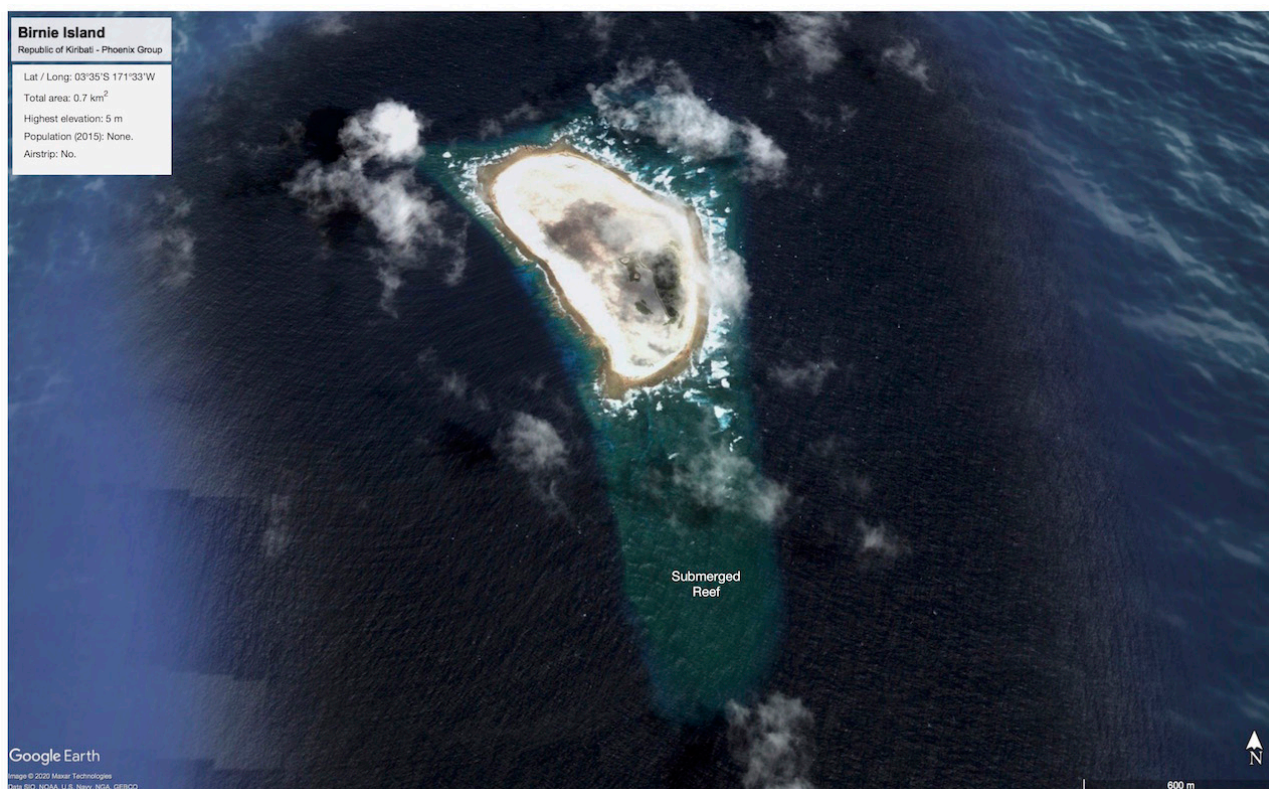
1 Includes atoll lagoon and reef. 2 Based on last national census in 2015. Next census is in late 2020.

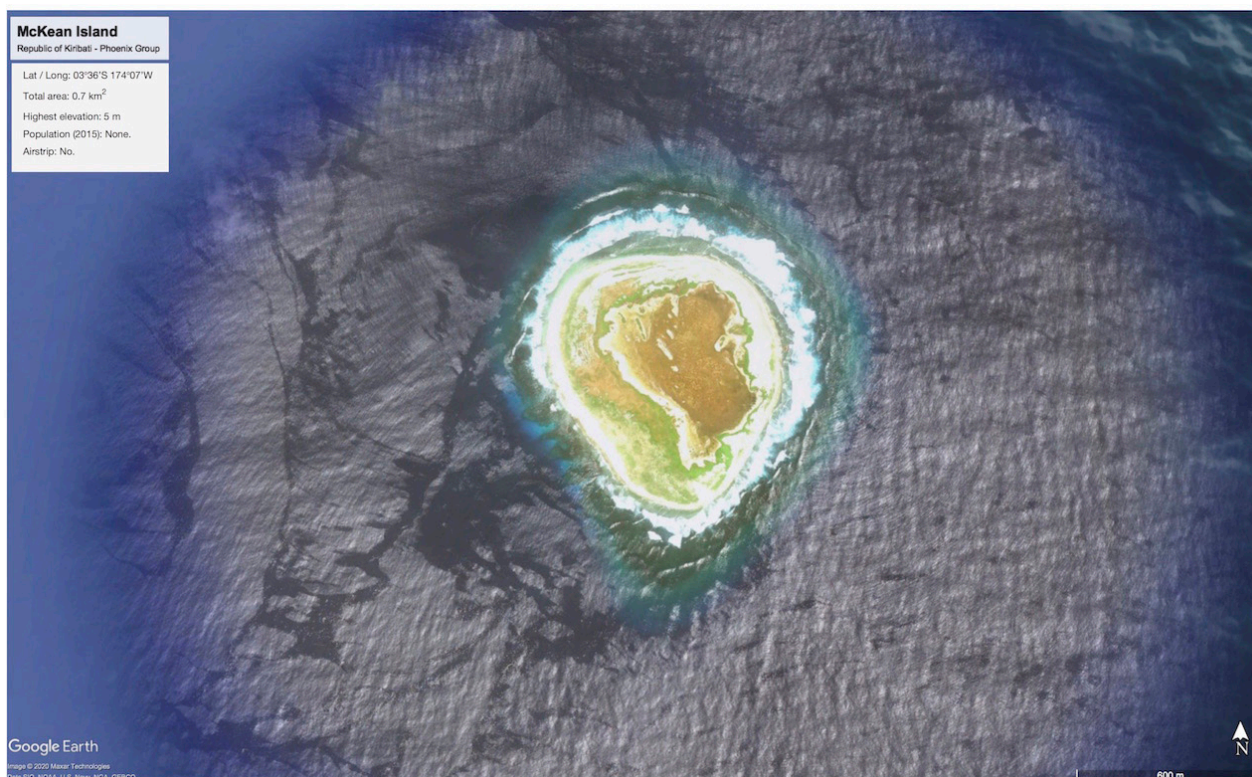


Satellite Maps – Phoenix Islands

(Islands listed from north to south)









Island Profiles Table – Line Islands

(islands listed from north to south)

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL VALUES
01. TERAINA Island ▪ 04°41'N 160°22'W ▪ Max Elevation: 5 m ▪ Total Area: 9.55 km² ▪ Popn²: 1,712 ▪ Density: 179.27/km²	▪ Island Type: Raised Coral Island. ▪ Teraina is the northern-most of the Line Islands and the most remote inhabited island of Kiribati. It is very small with a longest axis of 5.4 km and widest axis of 2.1 km. ▪ It is an atoll that has been lifted high enough above sea-level by tectonic forces to protect it from scouring by storms and enable soils and diverse species of flora and fauna to develop. ▪ However, unlike other raised atolls (e.g., Banaba in the far west of Kiribati), it has not completely filled up with sand and soil, and still retains a significant remnant of the former atoll lagoon, in the form of a shallow (max.) lake, and two smaller swamp areas (peat bogs), which are remnant lakes. ▪ Because the lake and swamps are not connected to the sea, and because Teraina is only 520 km from the equator and has very high rainfall, they are mainly freshwater and only slightly brackish during dry periods. ▪ Teraina is unique amongst Pacific Islands in that it has a network of canals connecting the swamps and lake with some of the villages, which can be used for transport by small boat. ▪ There are nine villages with the Island Council and government services being located at the largest village of Tangkore at the north-west tip of the island.	▪ Airstrip: Yes – but floods during wet weather and is sometimes inoperable. ▪ Seaport: There is a small boat passage blasted through the reef on the south-west end of the island where cargo can be landed and copra exports lighted out to the inter-island cargo ship, which visits irregularly. The boat landing is near to a connection to the canal system. ▪ There is an Island Council guesthouse.	▪ Traditional subsistence – the high rainfall, rich soils and freshwater lake and bogs make Teraina very fertile and productive. ▪ There is extensive well-developed coconut forests across the island interspersed with numerous, productive breadfruit trees. ▪ The lake produces milkfish, Tilapia, freshwater eels and a brackish-water species of Trevally. ▪ A few government & Island Council jobs. ▪ Remittances from family on Tarawa or overseas. ▪ Copra exports. ▪ 200 NM EEZ with rich tuna fisheries.	Although not well-known and not subject to formal environmental protection or biodiversity conservation regimes like PIPA in the Phoenix Islands to the west, Teraina Island has some of the most significant, unique and interesting environmental values of Kiribati, including: ▪ It hosts several ecosystems whose combination is unique in the world, including fringing coral reef, enclosed freshwater/brackish peat-bog swamps and lake, coconut forest with various understories and <i>Pisonia</i> forest at the eastern end. ▪ Teraina hosts the world's largest population (~1,000) of the globally endangered Rimatara Lorikeet (<i>Vini kuhlii</i>) (BirdLife International, 2016), even though Teraina is located >2,500 km from the bird's original home range in the southern Cook Islands and Austral and Society Islands, where it is almost extinct (the lorikeet was likely brought to Teraina with Polynesian navigators). The Rimatara Lorikeet has brilliant plumage and an endearing and highly social behaviour, and was treasured by ancient Polynesians as a pet, for its feathers and as a trade item. The health of the population on Teraina is assisted by the abundant coconut forests, as it feeds on the nectar of coconut flowers and nests in old coconut shells and husks (BirdLife International, 2016). The presence of feral cats on the island also keeps the island rat-free, which helps to protect the lorikeets. The Teraina population comprises some 60% of the remaining global wild population, is considered crucially important for its global survival, and could be a source to re-populate islands in the bird's original range in SE Polynesia. ▪ Teraina also hosts some endemic bird species associated with the unique bog and lake habitats, including the Reed Warbler (<i>Acrocephalus aequinoctialis</i>) and a now extinct duck species. ▪ The lake also hosts healthy populations of the marbled eel (<i>Anguilla marmorata</i>) which makes Teraina unique amongst the other islands of the area, which as atolls or emergent seamounts do not have freshwater eel habitat. ▪ A range of seabird species nest on the island although numbers are not as great as on other dryer and less-vegetated islands in the Line and Phoenix Groups, as the heavily forested nature of Teraina limits ground-nesting space. ▪ There is a need to develop more formal protection and conservation measures for the unique and special environmental and biodiversity values of Teraina. ▪ The island also has ancient cultural values in the form of coral 'marae' (holy) platforms probably built by Polynesian visitors/temporary settlers navigating between SE Polynesia and Hawaii around 1,200 AD.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL VALUES
02. TABUAERAN Atoll ▪ 03°51'N 159°22'W ▪ Max Elevation: 3 m ▪ Total Area: 150 km² ▪ Dry land: 33.73 km² ▪ Popn²: 2,315 ▪ Density: 68.6/km²	▪ Island Type: Complete Atoll. ▪ Tabuaeran is a medium-sized coral atoll with a relatively shallow inner lagoon which is almost entirely enclosed by a typical ring of coral islets atop the encircling coral reef, with a navigable pass through the reef on the western side and a smaller, non-navigable pass through the reef on the south-eastern side of the atoll. ▪ There are eight villages spaced along the lagoon coast on the western side of the island, with the administrative centre at Paelau on the west aide.	▪ Airstrip: Yes, with scheduled flights to Kiritimati. ▪ Seaport: There is a navigable passage through the reef on the west side of the atoll, with two wharves on the inner lagoon side of the passage – one on the northern side and one of the southern – servicing the respective communities.	▪ Traditional subsistence – with a high reliance on seafood. ▪ Tourism income from cruising yachts and occasional cruise ship visits out of Hawaii and sale of handicrafts to passengers. ▪ Seaweed farming (now much reduced). ▪ A few government & Island Council jobs. ▪ Remittances from family on Tarawa or overseas. ▪ Copra exports. ▪ 200 NM EEZ with rich tuna fisheries.	▪ The coral reefs and lagoon habitats of Tabuaeran are diverse and productive although subject to localized overfishing. ▪ The islets along the more exposed eastern side is set aside as a nature reserve. ▪ Tabuaeran was formerly an important seabird rookery with 12 breeding species, but populations are now much reduced and only about six species still breed regularly (Office of Te Beretitenti & T'Makei Services 2012c). ▪ There is a small population of the globally endangered Rimatara Lorikeet (<i>Vini kuhlii</i>) on the northwestern islet, believed to have been introduced by early Polynesian colonists (as for Teraina Island). ▪ The atoll suffers from the same impacts as listed for Makin and other islands as described above, including coastal erosion – believed to be caused at least in part by the construction of causeways linking the islets in the southern part of the atoll. ▪ The freshwater lenses of the islets are suffering depletion, pollution and salinisation. ▪ Artefacts have been discovered that indicate possible early settlements by Polynesians navigating between SE Polynesia and Hawaii around 1,200 AD.



ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL VALUES
03. KIRITIMATI Atoll ▪ 01°52'N 157°24'W ▪ Max Elevation: 5 m ▪ Total Area: 665 km² ▪ Dry land: 388 km² ▪ Popn²: 6,456 ▪ Density: 16.64/km²	▪ Island Type: Submerging Atoll. ▪ Kiritimati is Kiribati's "Eastern Capital". ▪ With 388 km² of land, Kiritimati comprises over 70% of the total national land area of the whole of Kiribati. ▪ While Kiritimati is by no means the largest coral atoll in the world, it has the largest land area of any atoll – as for most atolls the majority of the area comprises the atoll lagoon with dry land restricted to the narrow ring of islets around the atoll perimeter. At Kiritimati much of the atoll area is land, with the lagoon taking up around 0.5 of the total area at the northwest end of the atoll. There are also numerous 'depressions' forming small saline lagoons across the landmass. ▪ The main villages on Kiritimati are Banana, Tabwakea and London, which are located along the main road on the northern tip of the island, and Poland, which is across the main lagoon to the South. London is the administrative centre and port facility.	▪ Airstrip: Yes, including international flights by Fiji Airways. ▪ Seaport: There is a navigable passage through the reef on the west side of the atoll, with two wharves, one on the ocean side of London and one inside the lagoon at London. ▪ There are seven guesthouses on Kiritimati, four privately owned and three church-owned.	▪ Traditional subsistence – with a high reliance on seafood. ▪ A few government & Island Council jobs. ▪ Remittances from family on Tarawa or overseas. ▪ Exports of the atoll are mainly copra and the state-owned coconut plantation covers about 51 km². ▪ Aquarium fish are exported and seaweed used to be exported but no longer. ▪ A 1970s project to commercially breed <i>Artemia saline</i> brine shrimp in the salt ponds was abandoned in 1978. ▪ In recent years there have been attempts to explore the viability of live crayfish and chilled fish exports and salt production.¹ ▪ There is a small amount of tourism, mainly associated with anglers interested in lagoon fishing (for bonefish in particular) or offshore fishing. ▪ Week-long ecotourism packages during which some of the normally closed areas can be visited are also available. ▪ In recent years, surfers have discovered that there are good waves during the Northern Hemisphere's winter season and there are interests developing to service these recreational tourists. ▪ There is some tourism-related infrastructure, such as a small hotel, rental facilities, and food services. ▪ 200 NM EEZ with rich tuna fisheries.	▪ The entire island is a Wildlife Sanctuary and access to five particularly sensitive areas is restricted. ▪ Kiritimati is one of the most important breeding grounds anywhere in the world for several seabird species. ▪ Invasive species are a major problem especially feral cat predation on the nesting seabird populations and on eggs. ▪ The lagoon is famous among sea anglers worldwide for its bonefish (<i>Albula glossodonta</i>), and has been stocked with Tilapia to decrease overfishing of marine species. Though the Tilapias thrive in brackish water of the flats, they will not last long should they escape into the surrounding ocean. ▪ The settled areas of Kiritimati are extremely densely populated and are facing many of the same environmental impacts from poorly planned urbanisation as South Tarawa, including poor sanitation, pollution of groundwater and coastal waters and severe waste management challenges. ▪ Being a low-lying atoll, Kiritimati is vulnerable to climate change impacts, as with the rest of Kiribati. ▪ Nuclear tests were conducted on and around Kiritimati by the United Kingdom in the late 1950s, and by the United States in 1962. During these tests the island was not evacuated. Subsequently, British, New Zealand and Fijian servicemen, as well as local islanders, were exposed to the radiation from these blasts. ▪ The island also has ancient cultural values in the form of stone structures probably built by Polynesian settlers navigating between SE Polynesia and Hawaii around 1,200 AD.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL VALUES
04. MALDEN Island ■ 04°1.4'S 154°54'W ■ Max Elevation: 10 m ■ Total Area: 39 km ² ■ Popn ² : None. ■ Density: N/a	■ Island Type: Emergent Seamount. ■ Malden is the summit of a seamount that emerges above the sea surface. The fringing coral reef is extremely narrow due to the near-vertical drop-off to deep ocean, preventing limited surface area for coral reef development. ■ A central, very shallow lagoon is entirely enclosed by land; however it is connected to the sea by underground channels, and is quite salty. ■ Malden is currently uninhabited but has previously been inhabited by Polynesians (as it is on the sailing route between SE Polynesia and Hawaii), western whalers in the early 1800s, and US and British guano (phosphate) miners (1860s to 1927). It was also used by the UK for nuclear testing in the 1950s.	■ Airstrip: Inoperable. ■ Seaport: No.	■ None. ■ 200 NM EEZ with rich tuna fisheries.	■ Because of Malden's isolation and aridity, its vegetation is extremely limited. ■ The island is designated as the <i>Malden Island Wildlife Sanctuary</i> , mainly due to its importance as a seabird-nesting site (as per many of the other Line and also the Phoenix Islands). ■ In 1956 the UK selected Malden as the "instrumentation site" for its first H-Bomb tests. British officials insisted that Malden should not be called a "target island". Nevertheless, the bombing target marker was located at the south point of the island and three thermonuclear devices were detonated at high altitude a short distance offshore in 1957. ■ The airstrip constructed on the island by the Royal Engineers in 1956–57 remained usable in July 1979. ■ The island also has ancient cultural values in the form of stone structures probably built by Polynesian settlers navigating between SE Polynesia and Hawaii around 1,200 AD.
05. STARBUCK Island ■ 05°38'S 155°53'W ■ Max Elevation: 8 m ■ Total Area: 16 km ² ■ Popn ² : None ■ Density: N/a	■ Island Type: Emergent Seamount. ■ Starbuck is the summit of a seamount that emerges above the sea surface. The fringing coral reef is extremely narrow due to the near-vertical drop-off to deep ocean, preventing limited surface area for coral reef development. ■ It is an extremely small, dry, barren, flat island with no central lagoon but there are some depressions that pond with saline water. ■ Starbuck Island was mined for phosphate between 1870 and 1893.	■ Airstrip: No. ■ Seaport: No.	■ None. ■ 200 NM EEZ with rich tuna fisheries.	■ There is no freshwater on the island, which is one of the drier atolls in the Line Island group. Annual yearly rainfall averages approximately 800 mm. ■ The island boasts a large colony of sooty terns, estimated at 1.5 million pairs (BirdLife International, 2020), together with Polynesian rats, feral cats, green turtles, and around fifteen other species of seabirds. ¹ Other accounts estimate the sooty tern population to be as high as three to six million birds. ■ Starbuck Island has been designated as the <i>Starbuck Island Wildlife Sanctuary</i> . ■ In 2014 the Kiribati government established a 12 NM fishing exclusion zone around Starbuck and each of the other southern Line Islands.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL VALUES
06. CAROLINE Atoll ■ 09°59'S 150°13'W ■ Max Elevation: 6 m ■ Total Area: 24 km ² ■ Dry land: 3.76 km ² ■ Popn ² : None ■ Density: N/a	■ Island Type: Coral Atoll. ■ Caroline Atoll is among the most remote islands on earth. ■ It is a very small, slightly crescent-shaped atoll consisting of 39 separate islets surrounding a very narrow, shallow lagoon.	■ Airstrip: No. ■ Seaport: No.	■ None. ■ 200 NM EEZ with rich tuna fisheries.	■ Despite more than three centuries of occasional human impact on Caroline, it is considered to be one of very few remaining near-pristine tropical islands and has been rated as one of the most unspoiled Pacific atolls. ■ Its relatively undisturbed state has led to Caroline being considered for designation as a World Heritage Site and as a Biosphere Reserve. Ecological surveys documenting the island's flora and fauna have been made intermittently through the later 20th century ■ It is home to one of the world's largest populations of the coconut crab and is an important breeding site for seabirds, most notably the sooty tern. ■ Densities of giant clams reach up to four per square foot in parts of the lagoon. ■ The atoll is currently designated as a wildlife sanctuary. ■ In 2014 the Kiribati government established a 12-nautical-mile fishing exclusion zone around each of the southern Line Islands. ■ As with the other Line Islands, there is evidence of settlement by Polynesian peoples on the largest islets from before European contact. Graves and temple platforms were uncovered by early expeditions to the island, and a large marae exists on the west side of Nake Islet. To date, these artefacts have not been surveyed by archaeologists.
07. VOSTOCK Island ■ 10°04'S 152°18.5'W ■ Max Elevation: 3 m ■ Total Area: 0.24 km ² ■ Popn ² : None ■ Density: N/a	■ Island Type: Emergent Seamount. ■ Vostock is the summit of a seamount that emerges above the sea surface. The fringing coral reef is extremely narrow due to the near-vertical drop-off to deep ocean, preventing limited surface area for coral reef development. ■ It is an extremely small, dry, barren, flat island. At only 0.24 km ² it is by far the smallest unitary island in Kiribati. ■ It is unknown whether the island has ever been inhabited, although the presence of rats suggests that ancient Polynesians might have at least visited. ■ No evidence of permanent settlement has ever been found.	■ Airstrip: No. ■ Seaport: No.	■ None. ■ 200 NM EEZ with rich tuna fisheries.	■ There is no lagoon or fresh water on the island, and no known freshwater lens, and virtually no vegetation, except for some wind-shorn <i>Pisonia</i> trees. ■ Like most of the other Line Islands, it is a seabird nesting site, although its extremely small size limits its habitat value. ■ The island is currently designated as a wildlife sanctuary. ■ In 2014 the Kiribati government established a 12-nautical-mile fishing exclusion zone around each of the southern Line Islands.

ISLAND	DESCRIPTION	FACILITIES	ECONOMY	KEY ENVIRONMENTAL VALUES
08. FLINT Island ■ 11°26'S 151°49'W ■ Max Elevation: 3 m ■ Total Area: 2.6 km ² ■ Popn ² : None ■ Density: N/a	■ Island Type: Emergent Seamount. ■ Flint is the summit of a seamount that emerges above the sea surface. The fringing coral reef is extremely narrow due to the near-vertical drop-off to deep ocean, preventing limited surface area for coral reef development. ■ Flint was leased by the British to Houlder Brothers and Co. of London who carried out guano digging in the central part of the island from 1875 to 1880 under field manager John T. Arundel. ■ From 1881 John T. Arundel & Co. carried on the mining business. The excavated areas have since filled with brackish water, forming two or three small lagoons. ■ Coconut palms were planted on the island by Arundel in 1881 and copra was produced until 1891. The island was leased in 1911 to S.R. Maxwell and Co., Ltd. who employed 30 men and one manager to harvest copra from the approximately 30,000 coconut palms.	■ Airstrip: No. ■ Seaport: No.	■ None. ■ 200 NM EEZ with rich tuna fisheries.	■ According to the U.S. Exploring Expedition (February 5, 1841), the island was thickly wooded with primeval forest, however the island is now mostly covered with planted coconut palms. ■ The island is currently designated as a wildlife sanctuary. ■ In 2014 the Kiribati government established a 12-nautical-mile fishing exclusion zone around each of the southern Line Islands.

1 Includes atoll lagoon and reef.

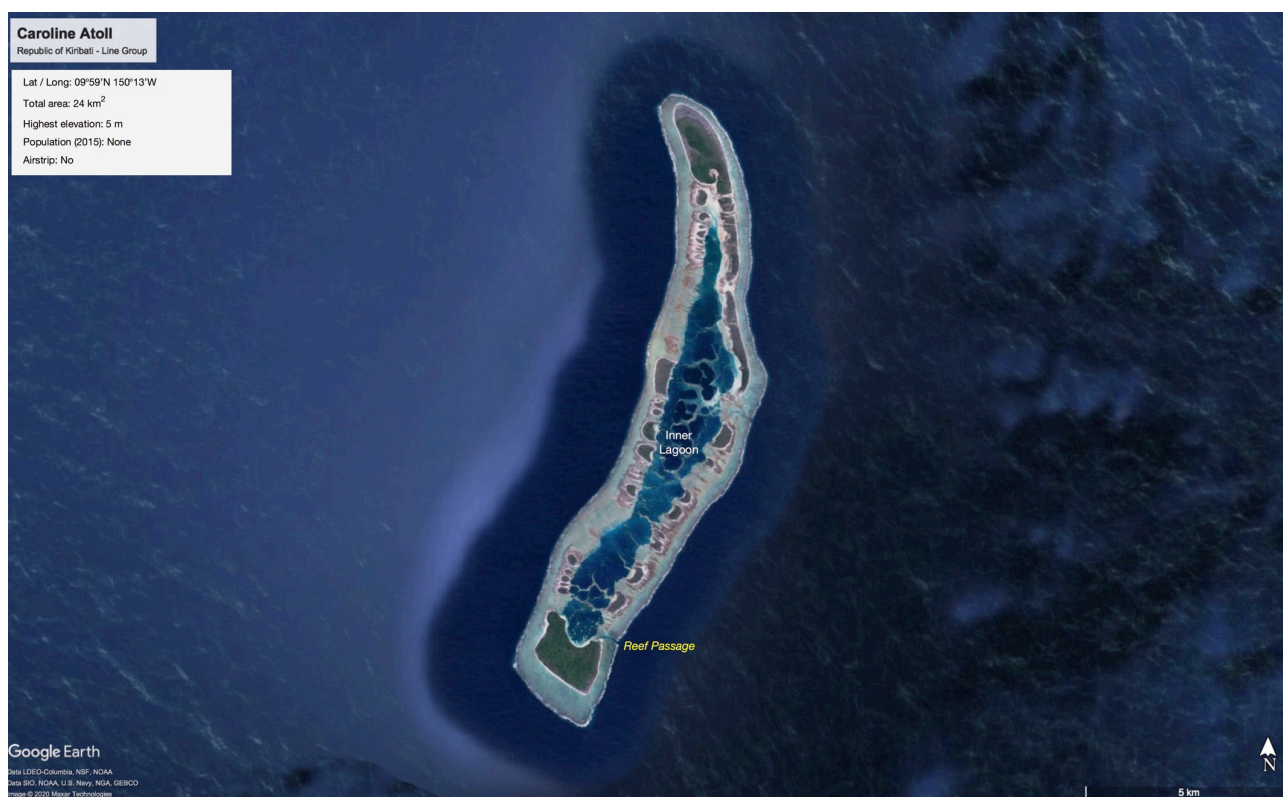
2 Based on last national census in 2015. Next census is in late 2020.

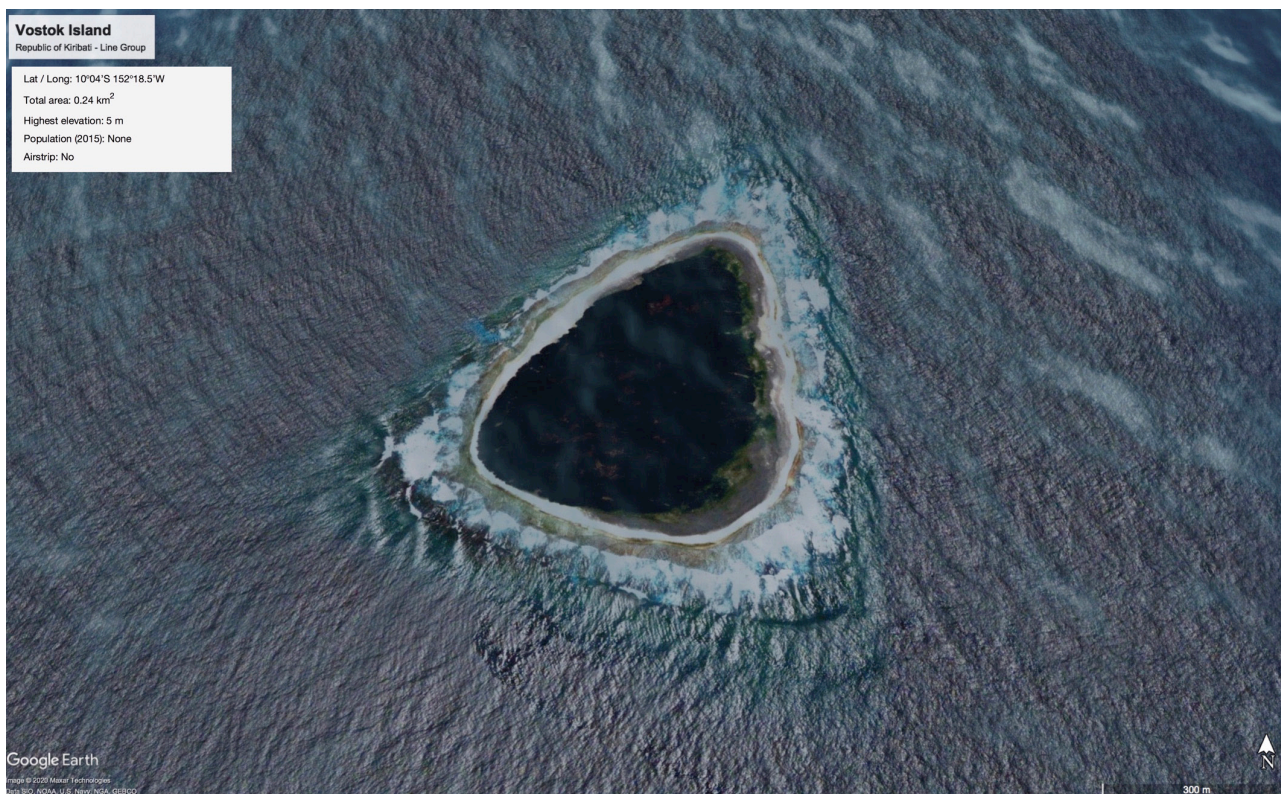
Satellite Maps – Line Islands

(islands listed from north to south)









ANNEX 2 KIEP IMPLEMENTATION OVERSIGHT COMMITTEE – TOR

Kiribati Integrated Environment Policy (KIEP) 2021–2036

KIEP IMPLEMENTATION OVERSIGHT COMMITTEE (KIOC)

Terms of Reference (ToR)

PURPOSE OF THE KIOC:

- 1.** Lead responsibility for coordinating the overall implementation of the KIEP 2021–2036 rests with the Director of ECD, under the direction of the Secretary and the Minister of MELAD.
- 2.** However, the KIEP adopts an integrated, whole-of-government approach and seeks to mainstream environmental sustainability into all government ministries and divisions and all socioeconomic sectors, and responsibility for implementing many key KIEP activities rests with ministries and divisions other than ECD.
- 3.** It is therefore necessary to have a high-level committee to oversee the implementation of the KIEP 2021–2036, and to ensure that all ministries, divisions and socioeconomic sectors are coordinated. This is the purpose of the KIOC.
- 4.** The KIOC will not replace the various other committees, task forces and working groups that already exist or are planned to be formed for specific thematic areas and technical issues – such sub-groups will oversee technical work in their respective areas, while the KIOC plays an overarching coordination role across all thematic areas, sectors and issues.

ROLE OF THE KIOC:

The role of the KIOC is to:

- a.** Coordinate KIEP activities across ministries, divisions and socioeconomic sectors.
- b.** Provide a high-level forum for the input of strategic views, needs, priorities and perspectives of stakeholders.
- c.** Advise and assist in securing resources and finances for KIEP implementation.
- d.** Review progress with KIEP implementation, including the Annual KIEP Monitoring, Evaluation and Learning (MEL) Reports that will

be prepared and submitted by ECD, for review by the KIOC before submission to Cabinet.

- e.** Recommend and oversee any adaptive management and corrective actions to keep KIEP implementation on track.

CHAIR:

The KIOC will be chaired by the Minister or the Secretary of MELAD, as available.

SECRETARIAT:

The Director of ECD will ensure that all secretariat functions are provided to support the KIOC, including:

- a.** Planning and organising meetings of the KIOC.
- b.** Drafting meeting agendas.
- c.** Taking minutes during KIOC meetings and generating meeting reports for distribution.
- d.** Ensuring that all follow-up actions agreed at KIOC meetings are implemented.

MEMBERSHIP:

The KIOC will comprise senior representatives from:

- a.** All relevant ministries and divisions of government.
- b.** Relevant private sector businesses and industries.
- c.** Civil society, including NGOs, women's', youth and vulnerable groups.
- d.** Outer islands.
- e.** Development partners.

FREQUENCY OF MEETINGS:

The KIOC will meet twice a year (every six months).

REPORTING:

The final minutes of all KIOC meetings will be distributed to KIOC members and to Cabinet, and published on the ECD web site.

ANNEX 3 KIEP ANNUAL MEL TEMPLATE

Kiribati Integrated Environment Policy (KIEP) 2021–2036

ANNUAL MONITORING, EVALUATION AND LEARNING (MEL) TEMPLATE

A separate MEL Report, using this Template, should be completed for each Thematic Area, in the last quarter of each financial year.

The MEL Report should be completed by the relevant Thematic Working Group, through a one-day MEL workshop, led by ECD.

Year:	[insert year]
Date MEL Report Completed:	[insert date]
Thematic Area:	[insert relevant Thematic Area that is subject of this MEL report]

PROGRESS AGAINST LONG TERM GOALS (LTGs)	STATUS AT MEL DATE
[inset LTG from LogFrame]	[insert summary dot points on progress at MEL date]
"	"
etc	"

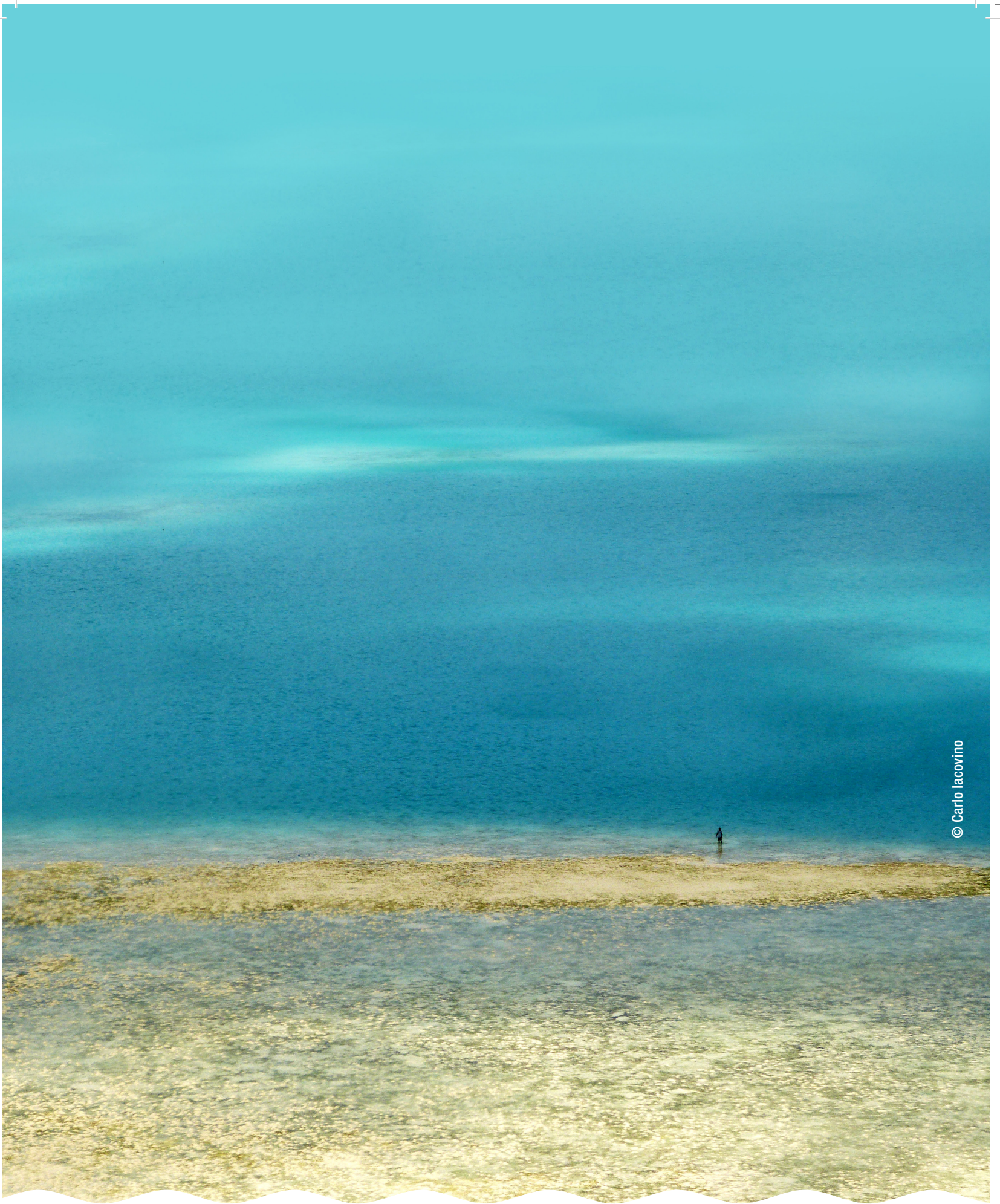
PROGRESS AGAINST INITIAL FOUR YEAR GOALS (FYGs)	TARGET	INDICATORS	STATUS AT MEL DATE (REPORT PRECISELY AGAINST THE TARGET)	CORRECTIVE ACTION REQUIRED?
[inset FYG from LogFrame]	[inset from LogFrame]	[inset from LogFrame]	[insert status]	[insert any corrective action required]
"	"	"	"	"
"	"	"	"	"
etc	etc	etc	etc	etc

Summary of progress at MEL date: [insert narrative]

Summary of corrective action needed: [insert dot points for each FYG]

Allocation of responsibilities and target dates for corrective actions: [insert dot points for each corrective action]

MEL participants: [list the Thematic Working Group members who participated in the MEL workshop for this Thematic Area]



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