REPUBLIC OF KIRIBATI

NATIONALLY DETERMINED CONTRIBUTION (REVISED)

NOVEMBER 2022

Foreword

In His Holy name, I greet you all "Kam na bane ni Mauri"

As the President of the Republic of Kiribati and the Minister responsible for Climate Change and Disaster Risk Management, coordinated through my office, and with the authority bestowed upon me by the people of Kiribati, it is my humble honour to present the Revised Nationally Determined Contributions (NDC) which highlights the ambition and practical actions of Kiribati through targets established to reduce national carbon emissions.

While Adaptation and Resilience continue to be the priority contributing to our development as a country, the Mitigation co-benefits will have major contributions to our overall resilient development efforts.

The IPCC reports scientifically highlight the importance of a 1.5-degree global goal and the need for political will to drive action. Kiribati is doing its part to reduce carbon emissions from a practical and realistic perspective noting the lack of capacities and technologies in place. This however does not alter the ambition level and the willingness of our Government in delivering concrete actions to reduce overall emissions.

The Kiribati Revised NDC puts into perspective sectors and mitigation efforts and planned actions complementary to the 1.5-degree goal. The Revised NDC is aligned well with national policies and strategies in place and looks towards low emission development pathways consistent with the Kiribati Vision for 20 years (KV20) and the Kiribati Development Plan (KDP).

Despite challenges with capacities, technologies and finances faced by Kiribati and the Pacific Island Countries, low emission strategies and pathways continue to be demonstrated as catalysts towards ambition and actions required for a healthier and safer global community and a call for emission reduction targets to be consistent with the 1.5-degree goal.

The discourse should shift beyond communicating political ambition to taking concrete and tangible actions towards a safer and low emission pathway. Small Island Developing States (SIDS) in the Pacific and more importantly atoll nations such as Kiribati are leading this work, but more support is needed.

The Government of Kiribati places its highest consideration in ensuring that Adaptation and Mitigation actions are undertaken practically and as highlighted within our Revised NDC.

May God bless us all

Te Mauri, Te Raoi ao Te Tabomoa

H.E Taneti Maamau

President of the Republic of Kiribati

Acknowledgement

This Revised NDC has been developed by the Government of Kiribati through a multi-stakeholder process led by the Office of The President and the Kiribati National Expert Group on Climate Change and Disaster Risk Management (KNEG).

A special thanks is accorded to the following Government Ministries, sectors and organizations on their cooperation and support in providing the information and data contributing to the development of this revised NDC:

- The Ministry of Infrastructure and Sustainable Energy (MISE)
- The Ministry of Information, Communications, Transport and Tourism Development (MICTTD)
- The Ministry of Environment, Lands and Agricultural Development (MELAD)
- The Ministry of Fisheries and Marine Resources Development (MFMRD)
- The Ministry of Justice (MOJ)
- The Ministry of Health and Medical Services (MHMS)
- The Public Utilities Board (PUB)
- The Kiribati Green Energy Company (KGEC)
- The Kiribati Oil Company (KOIL)

The Government of Kiribati through its 20 year Vision (KV20) has embarked on ensuring that peace, security and prosperity are addressed through a whole of Government approach towards resilient development. The Office of Te Beretitenti through its national stakeholders, development partners and partnership established look towards strengthening the adaptive capacity and resilience of our people and land against the adverse impacts of climate change.

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Acronyms and Abbreviations

AFOLU	Agriculture, Forestry and Other Land Use
BAU	Business as Usual
BTR	Biennial Transparency Report
BUR	Biennial Update Report
GEF	Global Environment Facility
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	Greenhouse gas
HDI	Human Development Index
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial Processes and Product Use
KJIP	Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management 2019 – 2028
KNAPs	Kiribati National Adaptation Priorities
KNEG	Kiribati National Expert Group on Climate Change and Disaster Risk Management
ktCO2e	Kilo (thousands) of tonnes of CO_2e
MPAs	Marine Protected Areas
NAP	National Adaptation Plan
NDC	Nationally Determined Contribution
NGOs	Non-Governmental Organisations
PICs	Pacific Island Countries
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

1.INTRODUCTION

The Republic of Kiribati (hereinafter referred to as Kiribati) is amongst the most vulnerable nations to climate change on Earth. As an atoll nation, Kiribati faces considerable risk from climate variability and sea-level rise. The potential risk of permanent inundation, and land and marine ecosystem degradation link climate change intrinsically with national development in Kiribati.[1] In the context of global greenhouse gas (GHG) emissions, Kiribati's per capita CO_2 emissions are estimated to be 0.6 tCO_2 per person in 2014, and the country's overall GHG emissions represent only 0.0002% of global emissions.[2]

The ratification of the Paris Agreement by Kiribati in 2016 signalled the renewed commitment by Kiribati to act on climate change, including to build resilience and adaptive capacity of the atoll nation as well its people and to address the cause of climate change through mitigation actions based on Kiribati's national circumstances.

In accordance with Article 4 and 7 of the Paris Agreement (Decision 1/CP.21), Kiribati hereby communicates this Revised NDC towards achieving the goals of the Paris Agreement, as well as the accompanying information to facilitate clarity, transparency, and understanding.

The difference between Kiribati's mitigation commitment in the INDC submitted by Kiribati in 2016 and this Revised NDC submitted in 2021 are shown in Table 1 and are briefly described below, further information can be found in Annex A:

TABLE 1: INFORMATION ON INDC AND REVISED NDC MITIGATION COMMITMENTST

Information	INDC	Revised NDC
• Base Year(s)	• 2000 – 2014 for GHG emissions derived from energy	• 2010-2019 for GHG emissions derived from energy, waste, and hydrofluorocarbons.
• GHGs covered	• CO_2	• CO_2, CH_4, N_2O, HFCs
• Quantifiable Information on Reference Year(s),	• Energy Sector 63.0 $ktCO_2e$ in 2014. BAU scenario of 73.5 $ktCO_2e$ in 2025 and 78.3 $ktCO_2e$ in 2030.	• Energy, waste, and hydrofluorocarbons emissions of 96.5 ktCO2e in 2019. With a GHG emissions under a BAU scenario of 120.0 $ktCO_2e$ in 2025 and 138.1 $ktCO_2e$ in 2030.
• Target Relative to the Reference Year(s)	• *TARGET 1*: To unconditionally reduce 13.7% (10.1 $ktCO_2e$) of BAU GHG emissions, and conditionally reduce 48.8% (35.9 $ktCO_2e$) of BAU GHG emissions by 2025. • *TARGET 2*: To unconditionally reduce 12.8% (10.1 $ktCO_2e$) of BAU GHG emissions, and conditionally reduce 49% (38.4 $ktCO_2e$) of BAU GHG emissions by 2030.	• *TARGET 1*: To unconditionally reduce 9.5% (11.3 $ktCO_2e$) of BAU GHG emissions, and conditionally reduce 16.7% (20.0 $ktCO_2e$) of BAU GHG emissions by 2025. • Unconditional carbon sequestration/sink of 0.16 $ktCO_2$ in 2025. • *TARGET 2*: To unconditionally reduce 8.0% (11.0 $ktCO_2e$) of BAU GHG emissions, and conditionally reduce 23.8% (32.9 $ktCO_2e$) of BAU GHG emissions by 2030. • Unconditional carbon sequestration/sinks of 0.15 $ktCO_2$ in 2030.

[1] World Bank and ADB (2021) "Climate Risk Country Profile Kiribati". https://climateknowledgeportal.worldbank.org/sites/default/files/2021-06/15816-WB_Kiribati%20Country%20Profile-WEB.pdf

[2] Government of Kiribati (2016) "Intended Nationally Determined Contribution". https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Kiribati%20First/INDC_KIRIBATI.pdf

Under this Revised NDC the BAU GHG emissions scenario for the years 2020-2030 has increased from that of the INDC, due to the inclusion of GHG emissions from hydrofluorocarbons and waste, and improved data quality and availability for the years 2015-2019, which allows for better BAU GHG emissions projections. Kiribati's mitigation commitments under this Revised NDC are slightly lower than those from the INDC. The reasons for this are: (1) an error was made in the INDC for the potential sequestration/sinks from the mitigation action of mangrove forest enhancement which estimated in the INDC an annual sequestration of 7.1 $ktCO_2$ in 2030, whereas the estimate in this Revised NDC is 0.15 $ktCO_2$ following updated scientific references; (2) INDC relied on the mitigation action for the use of coconut oil as biodiesel for electricity generation and transport, and this technology has not developed further in the Pacific region nor has it scaled, therefore this Revised NDC addresses mitigation actions based on currently available technologies which can be applied to electricity generation and transport. It is noted that the BAU GHG emissions scenario includes fuel consumption from both domestic and international aviation, because bifurcated information is not available. Therefore, the BAU GHG emissions scenario may change in the future when fuel use for international aviation can be accounted for and removed

Kiribati submitted its National Adaptation Plan (NAP) in 2020, which is nationally referred to as the Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management 2019 – 2028 (KJIP). In accordance with the KJIP Kiribati's National Adaptation Priorities (KNAPs) are included in this Revised NDC.

2. NATIONAL CIRCUMSTANCES

GEOGRAPHY

The Republic of Kiribati is made up of three main island groups: The Gilbert, Phoenix and Line Islands and one isolated raised limestone island, Banaba (Ocean Island). The three main island groups stretch over 800 kilometres from north to south and over 3,210 kilometres from east to west. The groups of islands contain 33 scattered atoll islands, dispersed over 3.5 million square kilometres in the central Pacific Ocean. Kiribati's coral atolls are very low-lying, with a maximum elevation of 3 to 4 meters (m) above sea level. The country straddles the equator, with an average annual temperature of 27.5°C.

POPULATION

According to the 2020 Population and Housing Census[3], the total population for Kiribati is 119,940 and is comprised of 50.7% females and 49.3% males, and this is a 9% (9,804 persons) increase from the 2015 Population and Housing Census. The median age of the I-Kiribati population is 22 years and over a third of the population is younger than 15 years of age. The bulk of the population of Kiribati (52.9%) lives in the capital region of South Tarawa, located in the Gilbert Islands.

SOCIO-ECONOMIC PROFILE

Kiribati is categorised as a low-income country by the World Bank, and as a Least Developed Country and Small Island Developing State by the United Nations. As an atoll nation, the country is endowed with an expansive ocean territory with significant potential for marine resources. While a number of challenges systemic to SIDS and LCDs, constrain economic development, the nation's Kiribati Vision for 20 Years Plan (KV20) commits the government of Kiribati to work with development partners to enhance national capacity, increase skilled workers, build national infrastructure, and increase connectivity to international markets. Such attributes demonstrate the nation's potential to build capacity for resilience, to counter challenges of climate change. Kiribati's average annual real GDP growth rate was 4.25% in 2015–19 compared to about 1.5% during 2000–14.[4] The stronger growth is reflected in part due to higher public spending financed by record-high fishing revenue that resulted from the implementation of the Vessel Day Scheme (VDS) in 2012.[5]

[3] Kiribati National Statistics Office (2020). https://nso.gov.ki/population/kiribati-2020-population-and-housing-census-provisional-figures/
[4] ADB (2020). https://www.adb.org/sites/default/files/linked-documents/50028-003-imf-kir.pdf
[5] Webb (2020). https://onlinelibrary.wiley.com/doi/epdf/10.1002/app5.297

Public spending averaged about 75 percent of GDP in 2015-19 (up from the historical average of 25%).[6] The domination in economic activity by the public sector saw increased expenditure on capital projects including road rehabilitation, water and sanitation projects, and renovations to the international airport. Construction activity driven by donor-financed infrastructure investment also contributed to the recent higher economic growth but slowed down due to the COVID-19 pandemic.[7] Agriculture and fishing, heavily supported by the copra price scheme, represent the largest contributor to the Kiribati economy.[8]

[6] Ibid.
[7] ADB (2020). https://www.adb.org/sites/default/files/linked-documents/50028-003-imf-kir.pdf
[8] Webb (2020). https://onlinelibrary.wiley.com/doi/epdf/10.1002/app5.297

3.Institutional Arrangements and National Frameworks

Kiribati's Revised NDC has been informed and developed through a robust national process. This Revised NDC takes as a basis the INDC and has been prepared based on the following national level polices and plans:

- Kiribati 20-year Vision 2016-2036,
- Kiribati Climate Change Policy (KCCP),
- Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management (KJIP) 2019 – 2028,
- Kiribati National Development Plan (KDP) 2016 – 2019,
- Kiribati Integrated Environmental Policy,
- Kiribati Integrated Energy Roadmap 2017 – 2025,
- Intended Nationally Determined Contribution (INDC),
- Nationally Determined Contribution Roadmap for Transport and Energy Efficiency,
- Nationally Determined Contribution Investment Plan for Transport and Energy Efficiency.

The development of the above national level policy and planning were initiated and coordinated by the Office of Te Beretitenti (Office of the President) and driven by the Kiribati National Expert Group on Climate Change and Disaster Risk Management (KNEG), along with representatives from government ministries, private enterprises, development partners, and non-governmental organisations (NGOs).
In addition, this Revised NDC has as its basis additional information developed between 2019 and 2021 found in the developed sectoral GHG baselines and mitigation opportunities for Agriculture, Forestry and Other Land Use (AFOLU), waste, and fluorinated gases.

Impacts, Risks & Vulnerabilities

Key Climate Trends

- *Temperatures* — on Kiribati's islands are generally stable throughout the year, although there are some variations between and within island groups. As reported in Kiribati's INDC, an average increase in maximum temperatures of 0.18°C per decade has been observed during the period 1950 to 2009. For the capital, Tarawa, maximum temperatures rose by 0.13°C per decade from 1950 to 2013.[9] From 1970 to 2009 there have been rises in the sea surface temperature of 0.15°C in the Gilbert group, 0.12°C in the Phoenix group and 0.10°C in the Line group.[10]

[9] *Kiribati (2019). Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management (2019–2028). https://www4.unfccc.int/sites/NAPC/Documents/Parties/Kiribati-Joint-Implementation-Plan-for-Climate-Change-and-Disaster-Risk-Management-2019-2028.pdf*
[10] *World Bank and ADB (2021). https://climateknowledgeportal.worldbank.org/sites/default/files/2021-06/15816-WB_Kiribati%20Country%20Profile-WEB.pdf*

- *Precipitation* — between 1946 and 2013, annual rainfall has increased significantly in Kiritimati Island (in the northern part of the Line islands) whilst in the capital—Tarawa—there has been no significant change in annual precipitation over the same period.[11] The country has been affected by severe droughts at sporadic intervals, with annual rainfall falling below 750mm in 1971, 1985, 1998 and 1999. El Niño Southern Oscillation (ENSO) has a strong influence over interannual precipitation variation over Kiribati's islands.

Climate related Natural Hazards

- *Heatwaves* — with a typically stable temperature regime, further research is required to better understand the implications of climate change, and its interaction with the ENSO phenomenon, for Kiribati's future temperature regime and potential heatwaves, though statistically, the probability of heatwaves is likely to grow significantly, as the average temperature moves away from the historical baseline.[12] Another key concern is marine heatwaves that are projected to extend their spatial footprint and to grow in duration and intensity especially with the identification of Western Tropical Pacific as a global hotspot for climate change impacts on marine heatwaves.[13] The consequences of this trend may be serious for marine ecosystems in the region (and the livelihoods dependent on them), and specifically on Kiribati's productive tuna fishery.

- *Drought* — meteorological drought, associated with a precipitation deficit is the primary type of drought affecting Kiribati. While some studies[14] [15] suggest that the time spent in drought is projected to decrease slightly or remain the same for most PICs, prolonged droughts, particularly during La Niña, can cause extreme water shortage, affecting agriculture and peoples' general wellbeing.

- *Floods, cyclones and storm surge* — climatic patterns currently tend to shelter Kiribati's islands from the direct impact of cyclones however, impacts can still be felt when cyclones pass within a few hundred kilometres. Known risks include sea-level rise, which has risen by 1 – 4mm per year as measured by satellite altimeters thus enhancing the damage caused by cyclone-induced storm surges, and the possibility of increased wind speed and precipitation intensity.[16] Modelling of climate change impacts on cyclone intensity and frequency conducted across the globe points to a general trend of reduced cyclone frequency but increased intensity and frequency of the most extreme events.[17] [18]

[11] *Kiribati Meteorology Service & PACCSAP (2015). Pacific-Australia Climate Change Science and Adaptation Planning Programme: Current and future climate of Kiribati. https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/11_PACCSAP-Kiribati-11pp_WEB.pdf*
[12] *World Bank and ADB (2021). https://climateknowledgeportal.worldbank.org/sites/default/files/2021-06/15816-WB_Kiribati%20Country%20Profile-WEB.pdf*
[13] *Frölicher, T. L., Fischer, E. M., & Gruber, N. (2018). https://www.nature.com/articles/s41586-018-0383-9*
[14] *World Bank and ADB (2021). https://climateknowledgeportal.worldbank.org/sites/default/files/2021-06/15816-WB_Kiribati%20Country%20Profile-WEB.pdf*
[15] *Iese et. al. (2021). https://link.springer.com/article/10.1007/s10584-021-03112-1*
[16] *Government of Kiribati. (2016). https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Kiribati%20First/INDC_KIRIBATI.pdf*
[17] *Walsh, K. et. al. (2015). https://doi.org/10.1002/wcc.371*
[18] *Widlansky, M. J. et. al (2019). https://doi.org/10.1175/WCAS-D-17-0112.1*

- *Ocean acidification* — according to the climate projections presented in Kiribati's initial NDC, there is very high confidence that the acidification of the ocean will continue to increase. The annual maximum aragonite saturation state will reach values below 3.5 by about 2045 in the Gilbert Islands, by about 2030 in the Line Islands, and by about 2055 in the Phoenix Islands. The aragonite saturation will continue to decline thereafter (moderate confidence).[19] Ocean pH will decrease by –0.1 units by 2035 and by –0.2 to –0.3 units by 2100.[20] Coral reefs are projected to degrade progressively with losses of live coral of > 25% by 2035 and > 50% by 2050 due to rising sea-surface temperatures and more acidic oceans.[21]

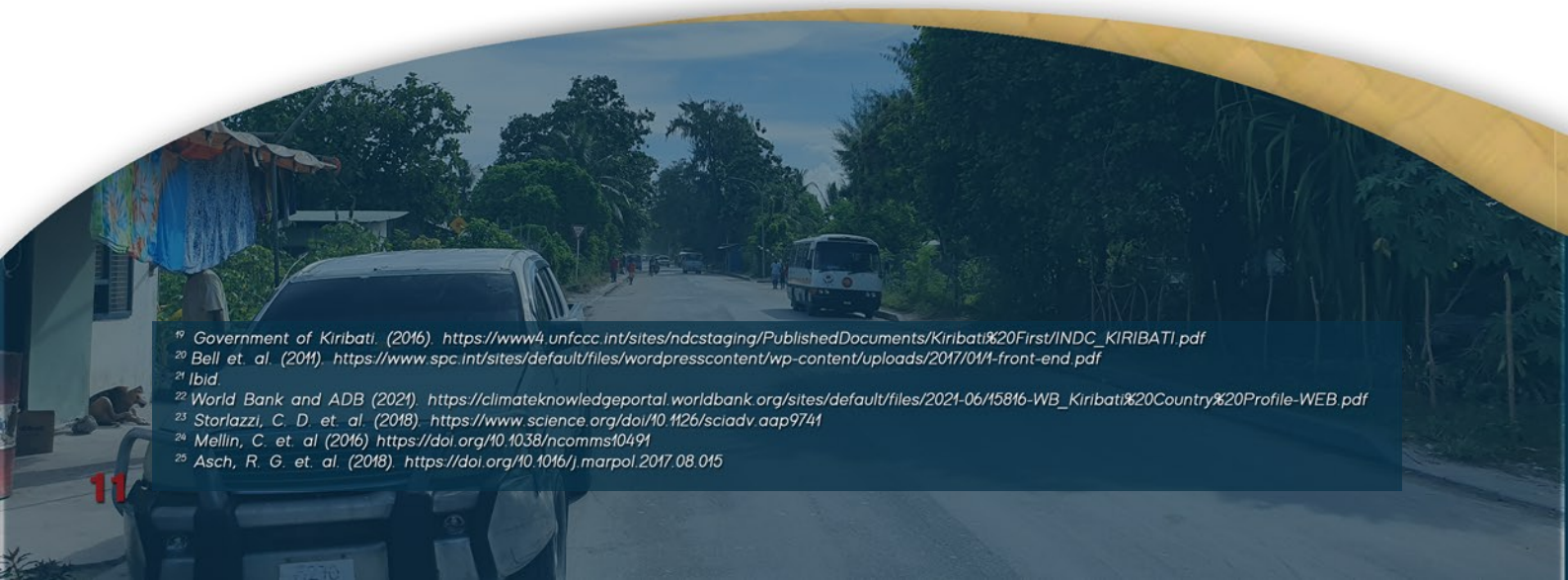
Climate Change Impacts

Natural Resources

- *Water*—water supply on Kiribati's islands depends primarily on rainwater collection and groundwater. Both are highly dependent on rainfall replenishment, and groundwater is vulnerable to saline contamination. Though future trends in water resources are not conclusive, most models agree that extreme hydrological events will grow in intensity and as such Kiribati should develop its capacity to endure droughts, storms, and intense rainfall.[22]

- *Kiribati's coastal zone*—studies have estimated that wave-driven flooding will make life conditions in many atolls (including many in Kiribati's island groups) difficult by the mid-21st century.[23] As documented in Kiribati's second national communication, low-lying islands have experienced serious impacts from sea-level rise induced by climate change. Some communities in outer islands, such as the village of Tebunginako, Abaiang, have already had to undertake managed relocation.

- *Ocean ecosystems and fisheries*—with the projected degradation in coral reefs, species living in and around coral reefs, either permanently or in their juvenile period, and particularly larger species, face a serious threat.[24] In Kiribati's case, the maximum catch potential of currently resident species has been forecasted, on average to decline significantly due to changes in temperature, dissolved oxygen, and acidity.[25]



[19] Government of Kiribati. (2016). https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Kiribati%20First/INDC_KIRIBATI.pdf
[20] Bell et. al. (2011). https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2017/01/1-front-end.pdf
[21] Ibid.
[22] World Bank and ADB (2021). https://climateknowledgeportal.worldbank.org/sites/default/files/2021-06/15816-WB_Kiribati%20Country%20Profile-WEB.pdf
[23] Storlazzi, C. D. et. al. (2018). https://www.science.org/doi/10.1126/sciadv.aap9741
[24] Mellin, C. et. al (2016) https://doi.org/10.1038/ncomms10491
[25] Asch, R. G. et. al. (2018). https://doi.org/10.1016/j.marpol.2017.08.015

Economic Sectors

- *Agriculture* — faces a range of climate impacts, especially at the subsistence level in Kiribati. Specifically, in the context of Kiribati, direct and indirect climate effects include reduced productivity of livestock due to heat stress, stress on water resources and hence reduced agricultural productivity, water quality and salinization damage to agricultural productivity and groundwater reserves, and damage and loss of key production, transport, and storage infrastructure.[26] Crop choices are limited in the country as the local soils have low fertility.[27] Within the agricultural sector, copra has a significant weighting but is also susceptible to climate change, for example lower production of coconuts due to drought.

Human Health

- A 2016 study[28] identified various effects of climate change on the people of Kiribati. These include health impacts of extreme weather events, heat-related illness, water security and safety, food security and malnutrition, vector-borne diseases, respiratory illnesses, non-communicable diseases, and a variety of other disorders.

[26] McSweeney, C. F. et. al (2015). https://link.springer.com/article/10.1007/s00382-014-2418-8
[27] Ibid.
[28] Lachlan, M. et. al (2016). https://pubmed.ncbi.nlm.nih.gov/26645102/

4. ADAPTATION

Kiribati's main focus for sustainable development is building resilience and adaptive capacity of the key systems of development and people to cope with the adverse effects of climate change. In building evidence of the impacts of climate change from the 1990s, Kiribati initiated the process of developing a joint national action plan on climate change and disaster risk management in 2011 that later became the Kiribati Joint Implementation Plan (KJIP). Between 2017 and 2019, the initial KJIP was reviewed and revised to enhance alignment with strategic documents such as the Kiribati Development Plan 2016-2019, the Kiribati 20-Year Vision, and the Climate Change Policy. The KJIP 2019 – 2028 aims to increase resilience through sustainable climate change adaptation and disaster risk reduction using a whole-of-country approach and is the main policy document for climate action in Kiribati. Based on the KJIP 2019 – 2028, in this Revised NDC Kiribati wishes to communicate the following KJIP strategies, and Key National Adaptation Priorities (KNAPs): [29]

Strengthening good governance, policies, strategies and legislation

- All policies, strategies, sector operational plans, ministry annual workplans, ministerial plans of operations, project proposals and monitoring and evaluation systems enable the proactive and inclusive reduction of climate change and disaster risks.

- Appropriate national and sector legislation is providing an enabling environment to enforce climate and disaster risk reduction.

- Enhance coordination between climate change adaptation and disaster risk management programmes and legislation, by government departments, church organisations, island councils, NGOs including communities and the private sector in a collaborative manner across sectors and link these to our development aspirations ***(KNAP - Disaster Risk Management #2).***

Improving knowledge and information generation, management and sharing

- An integrated and up-to-date national database providing all relevant information for resilient development is available and accessible for all.

- Capacities to communicate science and best practices are strengthened by developing and disseminating effective and relevant information, communication and awareness products for decision making and awareness raising across sectors and at all levels.

- Capacities for data collection, assessment, analysis, interpretation, monitoring and reporting are strengthened across sectors.

[29] *Refer to the KJIP 2019 – 2028 for detailed actions and indicators under each priority area. https://www4.unfccc.int/sites/NAPC/Documents/Parties/Kiribati-Joint-Implementation-Plan-for-Climate-Change-and-Disaster-Risk-Management-2019-2028.pdf*

Strengthening and greening the private sector, including small and medium-sized enterprises (SMEs)

- Increased investment by businesses, including small and medium-sized enterprises and women in value-adding marine and agricultural products for the domestic and export niche markets, and benefit women and men equally.

- Private sector implements greening and risk management initiatives (in areas such as tourism, trade, transport, import and export).

- Private sector incorporates climate change and disaster risks into its strategic and business plans (and assesses feasibility of insurance).

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

- Communities with island councils manage and implement climate change adaptation and disaster risk reduction measures as an integral part of their development efforts and inclusive of vulnerable groups ***(KNAP – Environmental Sustainability and Resilience #1).***

- Salt-, drought-, rain- & heat stress-resilient crops, fruit, vegetables and livestock breeds are identified and promoted, and communities preserve local food (fruit trees and seafood) ***(KNAP – Food Security #2, #3, #4).***

- Communities manage coastal fisheries taking into consideration sustainability of marine resources as well as climate change and disaster risks.
  Communities have constant access to local produce and basic food commodities ***(KNAP – Food Security #1).***

- Communities manage their water resources, including during extreme events such as drought, heavy rain and storm surges ***(KNAP – Water Security #4).***

Strengthening health service delivery to address climate change impacts

- The public is aware of water safety and proactively reduces the spread of vector-, water- and food-borne diseases.

- Routine systems for surveillance of environmental health hazards and climate-sensitive diseases are strengthened and the capacity of national and local health systems, institutions and personnel to manage climate change- and disaster-related health risks are enhanced ***(KNAP – Health Security #3, #4).***

- Capacities are enhanced, and equipment provided to the MHMS Central Laboratory and Environmental Health Laboratory to test water and food, conduct vector control activities and analyse results.

- I-Kiribati population's general health status is enhanced to be more resilient to climate-related diseases and health impacts.

- A national climate change, disaster risk, outbreak preparedness governance framework, response plan and a sectoral environmental health plan, which incorporate surveillance and response to climate-sensitive diseases and disaster risks, are in place (***KNAP – Health Security #1, #2).***

- Strengthened support for retrofitting medical facilities and health infrastructure adversely affected by, or susceptible to, the impacts of climate change ***(KNAP – Health Security #5)***.

- Enhanced chemical waste management and alternatives to reduce contamination and pollution ***(KNAP – Health Security #6).***

Promoting sound and reliable infrastructure development and land management

- The livelihood of I-Kiribati is improved through public buildings, infrastructure and utilities that are well maintained and resilient to climate change and disasters (climate proofing).

- Land and marine planning and management for all islands that provide clear regulations on land development with competent planning authorities strengthened to implement & enforce land and marine use regulatory frameworks and water regulations.

- Building coastal resilience through strategic coastal protection initiatives ***(KNAP – Costal Protection and Infrastructure #1, #2, #3, #4).***

- Water reserves are protected, and communities have access to sufficient and adequate fresh water at all times (including during extreme events such as drought, heavy rain and storm surges) and to improved sanitation facilities ***(KNAP – Water Security #1, #2, #3, #5).***

- Establish financial mechanisms to address the risks facing community and public assets (with a focus on climate risk insurance and building on existing initiatives and programmes) ***(KNAP – Unavoidable Climate Change Impacts #2).***

Delivering appropriate education, training and awareness programmes

- Students and professionals have capacities to take action on adaptation along with risk reduction and coping strategies before, during and after disasters and emission mitigation ***(KNAP – Capacity Building and Education #1).***

- The I-Kiribati population is well informed, and all stakeholders have access to up-to-date and accurate, contemporary and traditional information on climate change and disaster risk management and communities take voluntary action to reduce climate change and disaster risks ***(KNAP – Capacity Building and Education #2).***

- The I-Kiribati population (inclusive of vulnerable groups) are well qualified with formal and TVET forms of qualification to improve employability inside outside of Kiribati.

Increasing effectiveness and efficiency of early warnings and disaster and emergency management

- Strengthening disaster risk preparedness (through innovative technology), response and recovery across all sectors including, importantly, at the island and the community levels to reduce loss of life, injuries, damage to infrastructure and properties ***(KNAP - Disaster Risk Management #1, #3) (KNAP – Environmental Sustainability and Resilience #1) (KNAP – Unavoidable Climate Change Impacts #1).***

Promoting the use of sustainable, renewable sources of energy and energy efficiency

- Promote and enhance the transition towards renewable energy sources ***(KNAP – Energy Security #1).***

- Increase energy conservation and energy efficiency on both the supply and demand sides ***(KNAP – Energy Security #3).***

- Renewable energy and energy efficiency are supported by appropriate policy, legislation and regulation ***(KNAP – Energy Security #2).***

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

- Strengthened coordination and collaboration in-country on climate finance and climate change and disaster risk management initiatives ***(KNAP – Climate Finance #3, #4).***

- Increase efforts to mobilise and scale up various sources of financing to implement climate change adaptation, mitigation and disaster risk management needs and priorities ***(KNAP – Climate Finance #1).***

- Line ministries' monitoring, evaluation and performance measures of climate change adaptation and disaster risk management, including budgeting, expenditure, institutional capacity, and internal systems, are strengthened through MFED engagement, as coordination office for climate finance through KCFD to increase Kiribati's access to, and engagement with, various sources of climate finance ***(KNAP – Climate Finance #2).***

Maintaining the existing sovereignty and unique identity and cultural heritage of Kiribati

- The rights of Kiribati over its existing EEZ and the resources within it are protected forever for the people of Kiribati.
- The cultural heritage of Kiribati is protected, preserved and promoted.

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

- Community partnerships and members of vulnerable groups are increasingly engaged in climate change and disaster risk management initiatives and their needs are addressed.
- Members of communities are proactively committed toward long-term partnership that is based on good governance, sustainability and empowerment.
- Locally driven resilience programmes (in identifying issues, strength and opportunities).
- The community participation and engagement to address climate change and disaster risk management issues is well defined and implemented.

5. GHG MITIGATION

Kiribati's Revised NDC addresses mitigation actions in the following sectors/sub-sectors, and are listed in Annex B:

- Energy: power generation, transport, energy efficiency.
- Waste: solid waste and wastewater.
- Hydrofluorocarbons: substitutes for ozone depleting substances.
- Agriculture, Forestry and Other Land Use (AFOLU): Forestry (planting new mangroves)

These mitigation actions lead to the following Revised NDC targets, and are detailed further in Table 2:

- **Target 1:** To unconditionally reduce 9.5% (11.3 $ktCO_2e$) of BAU GHG emissions, and conditionally reduce 16.7% (20.0 $ktCO_2e$) of BAU GHG emissions by 2025.

  Unconditional carbon sequestration/sink of 0.16 $ktCO_2$ in 2025.

- **Target 2:** To unconditionally reduce 8.0% (11.0 $ktCO_2e$) of BAU GHG emissions, and conditionally reduce 23.8% (32.9 $ktCO_2e$) of BAU GHG emissions by 2030.

  Unconditional carbon sequestration/sink of 0.15 $ktCO_2$ in 2030.

Table 2: Possible Unconditional and Conditional Commitments for the RNDC

Unconditional ($ktCO_2e$ in year)	2020	2025	2030
Operating & financed solar systems (from 2015)	2.44	2.38	2.32
Hydrofluorocarbons reduced	0	0.12	0.12
Carbon sequestered	0.07	0.16	0.15
On-going solar systems +	0	8.66	8.44
Total Unconditional	*2.63*	*11.32*	*11.03*
Conditional ($ktCO_2e$ in year)	**2020**	**2025**	**2030**
Planned solar & ocean thermal systems +	-	1.72	1.68
Hydrofluorocarbons reduced +	-	0.40	1.09
Carbon sequestered +	-	-	-
Waste	-	0.05	0.88
Transport	-	14.08	18.06
Energy Efficiency (adjusted)	-	3.97	11.28
Total Conditional	*-*	*20.00*	*33.00*
Total Mitigation (unconditional + conditional)	***2.63***	***31.32***	***44.03***
Percentage from BAU	*3%*	*26%*	*32%*

Power Generation

In power generation, Kiribati is committed to increasing the use of renewable energy and has between 2015 and 2020 installed a total solar PV capacity of 1,890 kWp, and this capacity is expected to increase to 8,110 kWp.[30] Total renewable energy generation is expected to lead to mitigation of 12.44 $ktCO_2e$ in 2030.

Transport

In the transport sector, mitigation actions comprise of actions in maritime and land transport including the operationalisation of a training programme for the aviation sector. Specifically, for the maritime transport sector Kiribati commits to developing a National Action Plan for Decarbonising Maritime Transport, utilisation of fuel-efficient outboard motors, and building and operationalising low-carbon vessels. For land transport the mitigation actions include: increasing the use of bicycles; shifting to public transport; and the use of biofuel blends (also impacting maritime transport). For the aviation sector, Kiribati commits to operationalising a training programme that would re-train the Air Kiribati and Airports Kiribati staff and is expected to yield minor emissions reductions through improved systems management and related operational efficiency measures. Collectively, the proposed mitigation actions for the transport sector have the potential to reach an annual mitigation potential of 18.1 $ktCO_2e$ in 2030. Further information on these actions, and support needed to implement these mitigation actions are summarized in Annex B.

Energy Efficiency

Mitigation through energy efficiency broadly consists of actions in power & appliances and energy efficiency in buildings, industry and government procurement. Under power & appliances, specific actions include sectoral planning, addressing utility and demand side management, and appliance labelling. Actions under energy efficiency in buildings, industry and government procurement, on the other hand include supporting the retrofitting of major hotels and commercial buildings, supporting sustainable procurement through technical assistance and capacity building for the Central Procurement Unit of the Ministry of Finance and Economic Development (MOFED) for integrating the concept of sustainable procurement into existing public procurement rules and processes, and the provision of technical assistance & capacity building to support the upgrading of critical industrial equipment to promote energy efficiency and cost savings. In sum, the priority mitigation opportunities under energy efficiency sector have the potential to reach an annual mitigation potential of 14.9 $ktCO_2e$ in 2030, but this is reduced to 11.3 $ktCO_2e$ in 2030 due to the inclusion of grid connected renewable power generation. Further information on these actions, and support needed to implement these mitigation actions are summarized in Annex B.

[30] *This may also include ocean thermal generation of up to 600 kW capacity.*

Waste

In the waste sector, there is one mitigation action planned to institute composting of biological waste from households, commerce, and industry (limited). This mitigation action would address waste separate at the source and aerobically compost up to 50% of biological waste in central facilities, creating biological fertiliser for domestic use. This proposed mitigation action has the potential to reach an annual mitigation potential of 0.9 $ktCO_2e$ in 2030.

Hydrofluorocarbons

Mitigation through the replacement of hydrofluorocarbons (gases), is planned through three different actions which include: replacing R404A to lower GWP refrigerant in commercial applications, replacing R404A to lower GWP refrigerant in industrial refrigeration, and the general recovery of refrigerants. These proposed mitigation action have the potential to reach an annual mitigation potential of 1.3 $ktCO_2e$ in 2030.

AFOLU

Within the AFOLU sector, there is an action which started between 2015-2020 for the enhancement of mangrove forest, and this planting aims to increase carbon sinks by 0.15 $ktCO_2e$ in 2030.

6. NDC PLANNING, PREPARATION, AND IMPLEMENTATION PROCESSES

Planning and implementing NDCs is not a simple process, especially for a SIDS / LDC like Kiribati. It requires coordination across ministries and sectors, implementing entities and importantly it involves navigating the complex financing architecture. The KJIP and the NDC Roadmap and Investment Plan, inspired by the KV20 and the KDP, have been the main policy and planning documents to inform the enhanced NDC for Kiribati. Developed through robust national processes, these policy documents contain detailed information on NDC priorities, and identify the means and requirements for achieving the NDC targets as well as nationally relevant adaptation actions. The Kiribati National Expert Group (KNEG)—chaired by the Office of Te Beretitenti and consists of representatives from MFED, MFAI, MIA and all line ministries, the private sector, NGOs and FBOs—is the main coordination mechanism for climate change in Kiribati and oversaw the development of the KJIP and the NDC Roadmap and the Investment Plan.

For the NDC Roadmap and the NDC Investment Plan for Transport and Energy Efficiency, approximately twenty-three (23) different national, regional, and international organisations were engaged during the stakeholder engagement process that consisted of one-on-one meetings with key stakeholders, workshops and small-group consultations. The approval process for the NDC Roadmap and Investment Plan included comprehensive consultations, in addition to sectoral information gathered by the Ministry of Infrastructure and Sustainable Energy (MISE). After the stakeholder consultations described above were completed, draft documents were reviewed by the Kiribati National Expert Group (KNEG) and ministries, who provided final feedback during a validation meeting. After the validation meeting the documents were reviewed by the Office of the President, and final approval was obtained. The implementation of the NDC Roadmap requires robust institutional arrangements, including mitigation actions by stakeholders as well as support (technology transfer, capacity building, and finance) needed to implement the mitigation actions. For macro-level roles of different stakeholders, refer to the NDC Roadmap.

For the KJIP, between 2017 and 2019 a review was done to enhance alignment with strategic documents released after 2014, namely: the Kiribati Development Plan 2016-2019, the Kiribati 20-Year Vision, and the Climate Change Policy. The revision process involved several rounds of national consultations which with government ministries, faith-based organisations, local non-governmental organisations and development partners. In particular, the review included the strengthening of gender considerations based on the results of a gender analysis conducted in 2017. The KNEG reviewed the recommendations for changes twice in 2018 and in 2019.

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

There is a gap in planning and preparation for mitigation actions in the waste sector and for hydrofluorocarbons and additional support is needed to address this gap.

7.CROSS-CUTTING ISSUES

Addressing cross-cutting issues like the implementation of the SDGs and promotion of gender, youth, and social inclusion through climate action are important for driving holistic and inclusive response to climate change and sustainable development as are the issues of transparency of action including the fundamental dimensions of means of implementation. As a climate vulnerable country, with limited resources and capacity, Kiribati fully recognises the overlaps in the sustainable development agenda and climate action and that an effective national response should leave no one behind.

Sustainable Development Goals

Kiribati's 20-year vision (KV20) for the development of a wealthy, healthy, and peaceful nation, and the Kiribati Development Plan (KDP), which is a four-yearly national plan broadly aligns to the 2030 Agenda and its SDGs. This alignment ensures that the implementation of the SDGs are mainstreamed into sectorial policies and programs. Kiribati's NDC Roadmap, in particular identifies the linkages between mitigation actions and the SDGs although more detailed quantitative and qualitative assessments will be required during implementation of the mitigation and adaptation actions to determine the full extent of contribution to the SDG targets.

Gender, Youth, and Social Inclusion

Kiribati's national action planning on climate change or the KJIP responds to the gender inclusive policies imperative established at the regional and international levels, and through the:

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

In all strategies of the KJIP, various actions and sub-actions include considerations regarding gender, youth and children, the elderly, people with disabilities and other vulnerable groups. The KJIP and the NDC Roadmap both recognise the need for information on inclusive gender processes in planning and implementation of the mitigation and adaptation actions under NDC. At the planning level the KNEG is the main coordination mechanism for climate change in Kiribati and is empowered to ensure equitable participation by women and organisations promoting gender equality in KNEG. It will ensure that previous mention groups are considered a distinct stakeholder group and that gender considerations are included in KJIP actions.

At the implementation level a few examples are (but at not limited to) of these actions may include the various channels for micro-level training of the trainers, to train leading women in the communities who will train women in individual households in health and water security, energy and energy use, and benefits of household waste management (and resources / e.g. composting). Then include women's groups in the development of these training materials.

Means of Implementation

Support in the form of the Means of Implementation (e.g. finance, technology transfer, and capacity building) are needed for Kiribati to fully achieve the NDC targets. The 15 primary mitigation opportunities presented in the NDC Investment Plan for Transport and Energy Efficiency consist of 9 opportunities in the transport sector, and 6 opportunities in the energy efficiency sector to be implemented from 2020 to the end of 2030. The consolidated temporal financing pathway of the primary mitigation opportunities in both transport and energy efficiency lead to an estimated need for US$ 210.5M in total investment in the sectors. This includes US$ 15.5M in capacity building and technical assistance needs, and US$ 195M in capital investments. The Means of Implementation needed for mitigation actions in renewable energy, waste, and hydrofluorocarbons have not yet been determined, and support is needed for this determination. The implementation of the KJIP is to be financed through existing strategies, ranging from the national budget to overseas development assistance, including additional climate finance and disaster-related humanitarian aid. A summary of the needs for Means of Implementation is presented in Annex B but is not all inclusive.

Progress in Implementing the Enhanced Transparency Framework

Kiribati recognises that Article 13 of the Paris Agreement establishes an enhanced transparency framework for action and support which requires developing country parties to provide information necessary to track progress made in implementing and achieving their NDCs, and for the Means of Implementation support needed and received for implementing the NDCs. Decision 18/CMA.1 establishes the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement, and this requires that parties to submit to the UNFCCC Biennial Transparency Reports (BTR) every two years starting in 2024, and Decision 18/CMA.1 sets out the BTR requirements for reporting. Additional guidance is provided on reporting formats proposed in SBSTA 51 items 11b and 11c.[31]

Kiribati is in the process of finalising its Third National Communication (TNC) and the first Biennial Update Report (BUR) under the UNFCCC. These processes will help Kiribati to transition to the needs of the BTR in 2024 as there are some commonalities between the current UNFCCC monitoring, reporting and verification (MRV) arrangements (national communications and BURs) and the BTR.

[31] TSubsidiary Body for Scientific and Technological Advice (SBSTA) 51. https://unfccc.int/event/sbsta-51

On adaptation, the KJIP has an established monitoring and evaluation system with a refined set of indicators. Selected indicators from major climate funds and indicator frameworks also have been integrated into the KJIP to track finance mobilised for adaptation efforts in Kiribati. The monitoring of ministerial strategic plans provides an additional layer of KJIP monitoring and evaluation. The KJIP Secretariat through the KNEG compiles biannual KJIP Progress Report.

Kiribati's NDC Roadmap, in particular establishes the MRV framework for the transport and energy efficiency sectors. This MRV framework and supporting activities will function in a bottom-up manner and will include the strengthening of data gathering and methodologies used for determining the following components: (a) Information on mitigation actions progress; (b) Combined subsector information (e.g., results of all mitigation actions combined); (c) Support needed & received; and (d) Cross-cutting information. Components (a) and (b) will be determined through activity information reported by implementing entities, and components (c) and (d) will be determined through information reported by ministries and supporting entities.

The MRV framework will utilise existing information and reporting pathways, identify additional data and reporting pathways where needed, use internationally recognized & strengthened methodologies, and incorporate the processes needed for verification. For determining GHG emissions mitigated, IPCC 2006 guidance will be utilised where applicable, especially for activity data and methodologies. The Means of Implementation will be tracked through existing, or strengthened processes, for data and methodologies for tracking support needed and received which are specific to the mitigation actions in the NDC Roadmap. Existing systems will allow for the reporting of sectoral policy & planning and institutional arrangements.

8.FAIRNESS AND AMBITION

The Republic of Kiribati, by any measurable indicator is a negligible contributor of the climate warming GHG emissions yet the country is on the frontlines of climate change and sea level rise. Thus, Kiribati's contribution towards the long-term temperature target of the Paris Agreement serves as a moral imperative as a global citizen, without impeding the country's right to develop its economy and improve the well-being of its population.

Kiribati is committed to ensuring the implementation of its Revised NDC commitments and is working towards reaching the targets therein. Achieving these targets will require unconditional actions by Kiribati, and some of these are in progress, for example, power generation through renewable energy. However, the realization of the full potential for of NDC targets is conditional on Kiribati receiving significant support in the form of Means of Implementation. Given Kiribati's national circumstances, adapting to a rapidly changing climate, however, remains the main focus for sustainable development for Kiribati.

Kiribati is willing to explore further opportunities for GHG mitigation to increase ambition in future NDCs, especially as new technologies are proven or become more accessible to SIDS / LDCs such as Kiribati. Kiribati requires additional Means of Implementation to investigate these future opportunities, which may lay within the energy use, waste, hydrofluorocarbons, and AFOLU categories.

Annex A: Summary of information to facilitate clarity, transparency and understanding of Kiribati's Revised NDC (2021)

1. QUANTIFIED INFORMATION ON THE REFERENCE POINT, INCLUDING, AS APPROPRIATE, A BASE YEAR (DECISION 4/CMA.1)

• Reference year(s), base year(s), reference period(s) or other starting point(s)	• 2010-2019 for GHG emissions derived from energy, waste, and hydrofluorocarbons.
• Quantifiable information on the reference indicators, their values in the reference year(s), base year(s), reference period(s) or other starting point(s), and, as applicable, in the target year	• Energy, waste, and hydrofluorocarbons GHG emissions of 96.5 $ktCO_2e$ in 2019, and a GHG emissions under a BAU scenario of 120.0 $ktCO_2e$ in 2025 and 138.1 $ktCO_2e$ in 2030.[32]
• For strategies, plans and actions referred to in Article 4, paragraph 6, of the Paris Agreement, or polices and measures as components of nationally determined contributions where paragraph 1(b) above is not applicable, Parties to provide other relevant information	• Relevant policies include: Kiribati Climate Change Policy Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management 2019 – 2028 Kiribati 20-Year Vision 2016 – 2036 Kiribati Integrated Environmental Policy Kiribati Integrated Energy Roadmap 2017 – 2025 Kiribati NDC Roadmap for Transport and Energy Efficiency
• Target relative to the reference indicator, expressed numerically, for example in percentage or amount of reduction	• *TARGET 1:* To unconditionally reduce 9.5% (11.3 $ktCO_2e$) of BAU GHG emissions, and conditionally reduce 16.7% (20.0 $ktCO_2e$) of BAU GHG emissions by 2025. Unconditional carbon sequestration of 0.16 $ktCO_2$ in 2025. *TARGET 2:* To unconditionally reduce 8.0% (11.0 $ktCO_2e$) of BAU GHG emissions, and conditionally reduce 23.8% (32.9 $ktCO_2e$) of BAU GHG emissions by 2030. Unconditional carbon sequestration of 0.15 $ktCO_2$ in 2030.
• Information on sources of data used in quantifying the reference point(s)	• For GHG emissions from fuels consumption data is derived from the Kiribati Oil Company Limited (KOIL) who is the only national importer of fuels. For GHG emissions from waste (solid waste and wastewater) data is derived from national statistics and IPCC 2006 default values. For GHG emissions from hydrofluorocarbons data is derived from import data of HFCs gases.
• Information on the circumstances under which the Party may update the values of the reference indicators	• Kiribati may update the reference indicator to account for improvement in data quality and availability. This may be available in connection with the next Biennial Update Report (in 2022) or Biennial Transparency Report (in 2024). Such data improvement may consist of national values, other than the IPCC 2006 default values, for the waste sector and enhanced import data for hydrofluorocarbons. Updates may also occur for the bifurcation of aviation fuels (for domestic and international flights), lubricant oil for the energy sector, and/or the inclusion of AFOLU sinks and agriculture emissions once improved national level data is available.[33]

[32] *Determine in accordance with IPCC 2006 Guidelines, and the GWPs of the Fifth Assessment Report (AR5) of the IPCC.*

[33] *Energy for the years 2010-2019 (including fuels for domestic & international aviation, but excluding lubricant oil), Waste for the years 2015-2019 and hydrofluorocarbons for the years 2016-2019.*

2. FRAMES AND/OR PERIODS FOR IMPLEMENTATION (DECISION 4/CMA.1)

• Time frame and/or period for implementation, including start and end date, consistent with any further relevant decision adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA);	• Prior-start of implementation: 2015 – 2019 prior to the 1st NDC period of the Paris Agreement Start of implementation: 2020, start of the 1st NDC period of the Paris Agreement End date: 2030, end of the 2nd NDC period of the Paris Agreement
• Whether it is a single-year or multi-year target, as applicable.	• Multi-year target, both Target 1: 2025 and Target 2: 2030.

3. SCOPE AND COVERAGE (DECISION 4/CMA.1)

• General description of the target;	• Kiribati's Revised NDC targets include mitigation actions in the energy, waste, and IPPU (only substitutes for ozone depleting substances) sectors. The potential emission reductions of mitigation actions (e.g. X ktCO_2e mitigation in a year) are determined on a per action basis using best available information, application of currently available technologies, IPCC 2006 guidelines where applicable, and industry standard methodologies applied by technical experts in the sectors. Further information on these mitigation actions and targets can be found in the following sources: • Kiribati's renewable power plan; • Nationally Determined Contribution (NDC) Investment Plan: • Investment Planning in Kiribati for the Transport and Energy • Efficiency Sectors; • Baseline and Mitigation Scenario Assessment Report: Waste Sector in Kiribati; • Baseline and Mitigation Scenario Assessment Report: Hydrofluorocarbons in Kiribati; • Baseline and Mitigation Scenario Assessment Report: AFOLU Sector in Kiribati.
• Sectors, gases, categories and pools covered by the nationally determined contribution, including, as applicable, consistent with IPCC guidelines;	• Energy sector (CO_2, CH_4, N_2O): Fuels combustion including IPCC 2006 categories 1A1, 1A2, 1A3, and 1A4. Excluding international aviation & international water-borne navigation, and domestic aviation. Waste sector (CH_4): Solid Wase and Wastewater including IPCC 2006 categories 4A, 4B, and 4D. Hydrofluorocarbons (HFCs): Substitutes for ozone depleting substances including IPCC 2006 category 2F.

- How the Party has taken into consideration paragraphs 31(c) and (d) of decision 1/CP.21;

- This Revised NDC includes the energy sector as did the INDC, in addition this Revised NDC also includes the waste sector and hydrofluorocarbons. Kiribati has basic reliable and available data for these include sectors in the categories indicated in 3(b), and this reliability and availability is expected to continue into the future, and will hopefully be strengthened. For other sectors and categories, data is either not currently available and/or is not currently considered reliable enough to include in the NDC reference or targets for anthropogenic emissions or removals. Kiribati expects that some additional sectors and categories will be included in future NDCs when sufficient support is provided through the Means of Implementation to make data available and strengthen it.

- Mitigation co-benefits resulting from Parties' adaptation actions and/or economic diversification plans, including description of specific projects, measures and initiatives of Parties' adaptation actions and/or economic diversification plans.

- Kiribati's efforts in the maritime and coastal sector development including through mangrove forest preservation and enhancement (a small portion if mangrove planting is included in the mitigation actions in the Revised NDC), coastal vegetation, and seagrass beds will increase the carbon sink potential of the ocean biodiversity.

4.PLANNING PROCESS (DECISION 4/CMA.1)

Information on the planning processes that the Party undertook to prepare its NDC and, if available, on the Party's implementation plans, including, as appropriate:

• Domestic institutional arrangements, public participation and engagement with local communities and indigenous peoples, in a gender-responsive manner;	• Kiribati's Revised NDC has been informed and developed through robust national processes. First, the adaptation and resilience component of this Revised NDC has been informed by the revision of the Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management (KJIP) 2019 – 2028 and the national stakeholder processes included in that. Second, Kiribati undertook a rigorous national process to develop its NDC Roadmap and the NDC Investment Plan for Transport and Energy Efficiency that provide details data on the mitigation actions and included national stakeholder processes. The development of baselines and mitigation scenarios for the waste, hydrofluorocarbons, and AFOLU was also prepared in parallel to this Revised NDC. The development of these documents including the Revised NDC was driven by the Kiribati National Expert Group (KNEG), with representatives from government ministries, private enterprises, and non-governmental organisations (NGOs) under the overall leadership and guidance of the Office of Te Beretitenti.

Contextual matters, including, inter alia, as appropriate:

• National circumstances, such as geography, climate, economy, sustainable development and poverty eradication;	• Kiribati is one of the smallest atoll nations of the Pacific with limited natural resources and hence economic development. As a result of its inherent characteristics as an atoll nation and a least developed country, Kiribati is highly vulnerable to climate change and has very little capacity to cope with natural and man-made disasters, but with great potential to build capacity for resilience. Climate variability is causing—and will continue to cause—more frequent and increasingly intense weather events, and climate change will heighten existing socioeconomic and environmental pressures. Further information can be found in the KJIP 2019 - 2028.
• Best practices and experience related to the preparation of the nationally determined contribution;	• Extensive consultations were taken with relevant stakeholders from government ministries, private enterprises, NGOs, and development agencies to inform both the adaptation priorities & actions and the mitigation actions defined in the national strategies & plans indicated in 1(c) and 3(a) and this Revised NDC. These were principally prepared through cooperation with technical assistance and capacity building provided through bi-lateral and multi-lateral support channels, and Kiribati highly appreciates the qualified and continued support provided by these channels / entities.
• Other contextual aspirations and priorities acknowledged when joining the Paris Agreement;	• Access to finance in critical to Kiribati's ability to address the adaptation and mitigation actions that will contribute to the sustainable development of Kiribati and in achieving the strategies & plans indicated in 1(c) and 3(a).

• Specific information applicable to Parties, including regional economic integration organizations and their member States, that have reached an agreement to act jointly under Article 4, paragraph 2, of the Paris Agreement, including the Parties that agreed to act jointly and the terms of the agreement, in accordance with Article 4, paragraphs 16–18, of the Paris Agreement;	• Not applicable. Kiribati is not part of any joint fulfilment agreement under Article 4, paragraph 2 of the Paris Agreement.
• How the Party's preparation of its NDC has been informed by the outcomes of the global stocktake, in accordance with Article 4, paragraph 9, of the Paris Agreement;	• First global stocktake will be undertaken in 2023 and where appropriate, this will inform further revisions to Kiribati's NDC commitments.

Each Party with an NDC under Article 4 of the Paris Agreement that consists of adaptation action and/or economic diversification plans resulting in mitigation co-benefits consistent with Article 4, paragraph 7, of the Paris Agreement to submit information on:

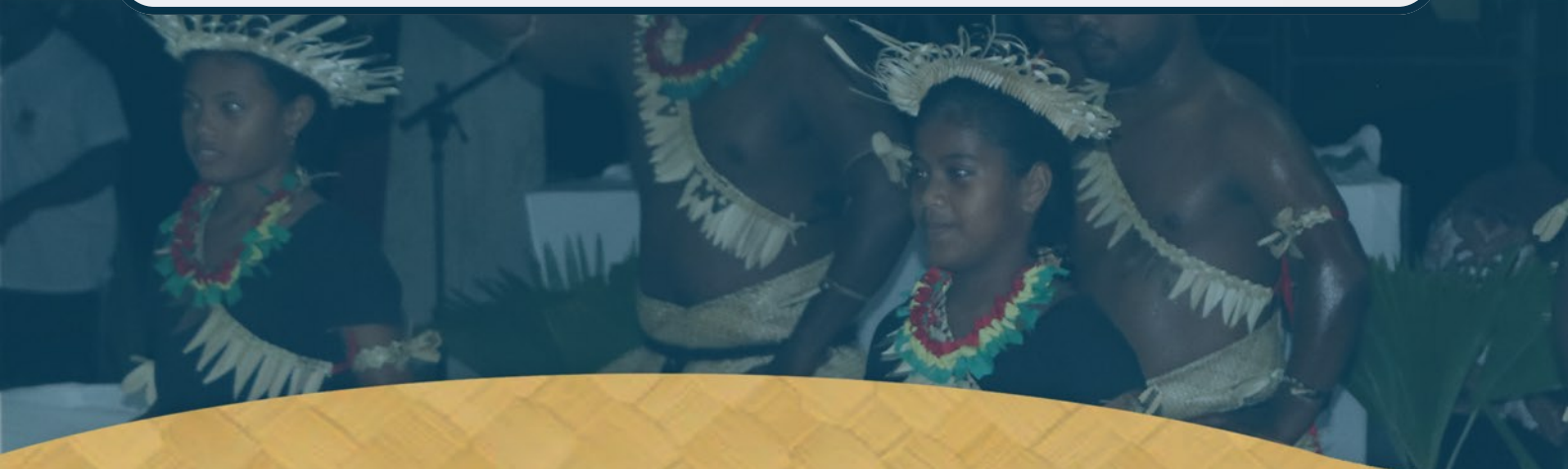
• How the economic and social consequences of response measures have been considered in developing the NDC;	• Kiribati has articulated the economic and social aspects in the KJIP 2019 - 2028.
• Specific projects, measures and activities to be implemented to contribute to mitigation co-benefits, including information on adaptation plans that also yield mitigation co-bentefits, which may cover, but are not limited to, key sectors, such as energy, resources, water resources, coastal resources, human settlements and urban planning, agriculture and forestry; and economic diversification actions, which may cover, but are not limited to, sectors such as manufacturing and industry, energy and mining, transport and communication, construction, tourism, real estate, agriculture and fisheries.	• See KJIP 2019 – 2028 and the Adaptation component of this enhanced NDC. One foreseen action is that to ensure and improve skins through management and increase of mangrove forests. This will be accounted for using IPCC 2006 guidance for category 3A1 Forest Land. A small action (planting of mangrove forest) is planned under this Revised NDC which is expected to lead to sequestration of 0.16 $ktCO_2$ in 2025 and 0.15 $ktCO_2$ in 2025.

5.ASSUMPTIONS AND METHODOLOGICAL APPROACHES, INCLUDING THOSE FOR ESTIMATING AND ACCOUNTING FOR ANTHROPOGENIC GREENHOUSE GAS EMISSIONS AND, AS APPROPRIATE, REMOVALS: (DECISION 4/CMA.1)

• Assumptions and methodological approaches used for accounting for anthropogenic greenhouse gas emissions and removals corresponding to the Party's nationally determined contribution, consistent with decision 1/CP.21, paragraph 31, and accounting guidance adopted by the CMA;	• IPCC 2006 guidelines, and 2019 revisions, were used to prepare GHG emissions for the reference years and GHG emissions under the BAU scenarios (e.g. future projections) of this Revised NDC, and include the sectors and categories indicated in 3(b). This Revised NDC's targets includes mitigation actions in these sectors. The potential emission reductions of mitigation actions (e.g. X $ktCO_2e$ mitigation in a year) are determined on a per action basis using best available information, application of currently available technologies and what they may achieve, IPCC 2006 guidelines where applicable, and industry standard methodologies applied by technical experts in the sectors. Further information can be found in the document referenced in 3(a).
• Assumptions and methodological approaches used for accounting for the implementation of policies and measures or strategies in the nationally determined contribution;	• Kiribati will apply specific assumptions and methodologies, where relevant, when reporting on various policies and measures in its Biennial Update Report and thereafter the Biennial Transparency Report. In relation to this topic, the references in 1(c) and 3(a) provide initial guidance in the form of methodologies and information which needs to be tracked (e.g. MRV and M&E) to show progress in a quantifiable and qualified manner.
• If applicable, information on how the Party will take into account existing methods and guidanceundertheConvention to account for anthropogenic emissions and removals, in accordance with Article 4, paragraph 14, of the Paris Agreement, as appropriate;	• See 5(a) and (b) above.
• IPCC methodologies and metrics used for estimating anthropogenic greenhouse gas emissions and removals;	• See 5(a)
• Sector-, category- or activity-specific assumptions, methodologies and approaches consistent with IPCC guidance, as appropriate, including, as applicable:	
• i. Approach to addressing emissions and subsequent removals from natural disturbances on managed lands;	• Not applicable under the boundary of the Revised NDC.
• ii. Approach used to account for emissions and removals from harvested wood products;	
• iii. Approach used to address the effects of age-class structure in forests;	

Other assumptions and methodological approaches used for understanding the nationally determined contribution and, if applicable, estimating corresponding emissions and removals, including:

• i.How the reference indicators, baseline(s) and/or reference level(s), including, where applicable, sector-, category- or activity-specific reference levels, are constructed, including, for example, key parameters, assumptions, definitions, methodologies, data sources and models used;	• See 5(a)
• ii. For Parties with nationally determined contributions that contain non-greenhouse-gas components, information on assumptions and methodological approaches used in relation to those components, as applicable;	• Not applicable
• iii For climate forcers included in nationally determined contributions not covered by IPCC guidelines, information on how the climate forcers are estimated;	• Not applicable
• iv.Further technical information, as necessary;	• Not applicable
• v.The intention to use voluntary cooperation under Article 6 of the Paris Agreement, if applicable.	• Kiribati may consider to participate in Article 6 subject to further developments and its appropriateness based on national context.



6.HOW THE PARTY CONSIDERS THAT ITS NDC IS FAIR AND AMBITIOUS IN LIGHT OF ITS NATIONAL CIRCUMSTANCES (DECISION 4/CMA.1)

• How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances; • Fairness considerations, including reflecting on equity;	• By any measure the GHG emission from Kiribati are a negligible contributor in atmospheric increase in GHG emissions, global warming, and climate change. Yet Kiribati is a country on the frontlines of climate change and sea level rise. Thus, Kiribati's contribution towards the long-term temperature target of the Paris Agreement serves as a moral imperative as a global citizen, without impinging the country's right to develop its economy and improve the well-being of its population. Nonetheless, Kiribati is committed to ensuring the implementation of this Revised NDC commitments and is working towards reaching the combined (unconditional and conditional) GHG mitigation target of 26% in 2025 and 32% in 2030 from the BAU GHG emissions scenario.
• How the Party has addressed Article 4, paragraph 3, of the Paris Agreement.	• The combined (unconditional and conditional) GHG mitigation targets for Kiribati reflect the 1st and 2nd NDC periods und the Paris Agreement, respectively 29% in 2025 and 37% in 2030 from the BAU scenario. These target as progressive.
• How the Party has addressed Article 4, paragraph 4, of the Paris Agreement.	• Kiribati's Revised NDC includes emissions from the waste sector and fluorinated gases, which are in addition to the only energy sector which was included in the INDC.
• How the Party has addressed Article 4, paragraph 6, of the Paris Agreement.	• See the references in 1(c) and 3(a).

7. HOW THE NDC CONTRIBUTES TOWARDS ACHIEVING THE OBJECTIVES OF THE CONVENTION AS SET OUT IN ITS ARTICLE 2 (DECISION 4/CMA.1)

- How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in its Article 2;

- Through this Revised NDC (and supporting references), and based on its national circumstances, Kiribati has clearly identified the mitigation actions for its emissions reduction targets and the implementation pathway for these actions, and with support through the Means of Implementation, these actions will help stabilise GHG emissions both globally and for Kiribati. In this context, the targets in this Revised NDC will also contribute to efforts to limit the temperature increase to 1.5 °C above pre-industrial levels.

- How the nationally determined contribution contributes towards Article 2, paragraph 1(a), and Article 4, paragraph 1, of the Paris Agreement.

Annex B: Identified Mitigation Potential and Means of Implementation (Support Needed)

Mitigation Actions in Power Generation	Mitigation Potential ($ktCO_2e$) in 2025	Mitigation Potential ($ktCO_2e$) in 2030	Capacity Building & Technical Assistance (US$)	Financing for Implementation (US$)
P1- 1.9 MWp PV prior installation (2015-2020)	2.42	2.32	NA	NA
P2 – 8.1 MWP/MW of grid connected renewable power generation and BESS	9.37	9.13	NA	NA
P3 – 0.8 MWp PV off-grid	1.02	0,99	NA	NA

Mitigation Actions in Transport	Mitigation Potential ($ktCO_2e$) in 2025	Mitigation Potential ($ktCO_2e$) in 2030	Capacity Building & Technical Assistance (US$)	Financing for Implementation (US$)
T1 – Outboard Motor Transition	1.76	3.65	810,000	20,798,000
T2 – Bicycle/E-Bike Financing Initiative	0.81	1.36	790,000	20,314,000
T3 – Aviation Operational Training Programme	0.35	0.42	1,200,000	NA
T4 – National Maritime Action Plan	0.00	0.00	315,000	NA
T5 – Low Carbon Mini-Container Ship	1.40	1.40	970,000	5,000,000
T6 - Small low carbon cargo/passenger freighter	0.39	0.39	950,000	2,000,000
T7 - Biofuel blends in Land and Maritime Transport	3.10	3.10	1,200,000	7,000,000
T8 – Multi-modal Transit Initiative	6.27	6.98	3,850,000	89,400,000
T9 – Zero-impact Cruise Liner (small)	0.00	0.78	1,450,000	7,000,000

Mitigation Actions in Energy Efficiency (EE mitigation numbers are prior to adjustment for RE on-grid capacity)				
E1 – Strengthening and Expanding the Standards and Labelling Programme for Appliances	0.43	2.89	277,000	NA
E2 – Capacity Building for Integrated Energy Planning and Energy Statistics in Kiribati	0.34	1.98	381,000	NA
E3 – Supporting the Retrofitting of Major Hotels and Commercial Buildings	0.38	0.90	937,000	1,500,000
E4 – Promotion of Sustainable Procurement	0.21	1.22	484,000	NA
E5 – Utility Led Programme to Manage Peak Demand and Savings in South Tarawa	4.28	6.77	1,318,000	41,531,000
E6 – Capacity Building in Energy Efficiency in Industry	0.20	1.14	509,000	500,000

Mitigation Actions in Waste	Mitigation Potential ($ktCO_2e$) in 2025	Mitigation Potential ($ktCO_2e$) in 2030	Capacity Building & Technical Assistance (US$)	Financing for Implementation (US$)
W1 – Centralised aerobic composting of biological solid waste	0.05	0.88	N.A	N.A

Conditional Mitigation Actions in Fluorinated Gases				
F1 – Replacing R404A to lower GWP refrigerant in commercial applications	0.02	0.12	N.A	N.A
F2 - Replacing R404A to low GWP refrigerant in industrial refrigeration	0.02	0.11	N.A	N.A
F3 - Refrigerant recovery	0.52	1.04	N.A	N.A

Conditional Mitigation Actions in AFOLU				
A1 – Planting of 7 ha of mangrove forest	0.16	0.15	N.A	N.A

CLIMATE PROMISE

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