



## United Nations Development Programme

### PROJECT DOCUMENT

**Project Title:** Enhancing national food security in the context of global climate change

**Regional UNDAF Focus Area:** Environmental Management, Climate Change and Disaster Risk Management

**Regional UNDAF Outcome 1.1:** Improved resilience of PICTs, with particular focus on communities, through integrated implementation of sustainable environmental management, climate change adaptation/mitigation, and disaster risk management (*Strengthen knowledge and information management, risk assessment and reporting capacities in environmental, climate and disaster risk management for greater evidence base in decision-making*).

**Regional UNDAF Outcome 5.1:** Regional, national, local and traditional governance systems are strengthened, respecting and upholding human rights, especially women's rights in line with international standards.

**Kiribati UNDAF Outcome 1.1:** Resilience strengthened at national and community level through integrated sustainable environment management, climate change adaptation/ mitigation and disaster risk management

**UNDP Strategic Plan Environment and Sustainable Development Primary Outcome:** Outcome 1: Growth and development are inclusive and sustainable, incorporating productive capacities that create employment and livelihoods for the poor and excluded.

**Executing Entity/Implementing Partners:** Ministry of Environment, Lands and Agriculture Development (MELAD)

**Implementing Entity/Responsible Partners:** Ministry of Fisheries and Marine Resources Development (MFMRD)

#### Brief Description

Kiribati is a nation comprised of 33 atolls (21 inhabited) spread across a vast Pacific Ocean territory. The people of rural Kiribati are largely reliant upon a limited land base and coastal zone fisheries for both nutrition and livelihood.

As the population grows and climate change advances, the security of island resources will be challenged. Already, the ecosystem integrity upon which islanders depend for climate change resilience is being eroded. This is evinced by many factors including deteriorating quality of near-shore fisheries, degraded lagoon health, and reduced freshwater quality. The primary reason for this is that current management regimes for both atoll and lagoon resources are defined by open resource access. There is very little active management, research, and/or regulation to make certain use of lagoon resources is maintained within sustainable limits. The nation has very little experience with the design and implementation of community-based management regimes to incentivize improved and more innovative management techniques. There are few tools in place to support better management of lagoon resource in light of expanding economic use and demand for these resources. This situation challenges resource management both within the lagoon and on the atoll. Climate change will certainly exacerbates an already very high level of vulnerability.

The project objective is to build the adaptive capacity of vulnerable Kiribati communities to ensure food security under conditions of climate change.

To address these challenges and reach the project's objective, the LDCF investment will support the realization of two components and related activities. Both components will be closely aligned so that national and site-based activities are designed to build synergies, increase awareness, and generate much more informed and strategic use of natural resources so that ecosystem integrity is able to continue to function as the foundation of food security needs.

Under Component One, the project will assist Kiribati to address urgent institutional capacity building needs primarily on the national level. This will include helping to set in place an improved regulatory environment, strengthened institutional planning and policy frameworks, and generation of data required to support informed decision-making.

Under Component Two, the project will assist Kiribati to address climate change vulnerabilities by implementing and demonstrating community-based adaptation measures. The project will work on a select number of atolls to set in place models for land and lagoon resources management that is predicated upon informed planning and management processes. The general awareness of rural communities regarding fisheries management and climate change impacts will be increased. Community-based monitoring systems will be established. This will be used to inform decision-making, serve as an early warning system for climate change impacts, and be linked to island-wide vulnerability assessments. The monitoring system will be linked to national level programming so that national level decision-making benefits from more broad-based information sources. The project will support the generation, adoption, and implementation of model council by-laws designed to be ecosystem inclusive and enhance ecosystem integrity. This will include model regulations for the management of fisheries, including permit and reporting mechanisms for both subsistence, commercial and tourism use of lagoon resources. The project will work with extension officers responsible for both agriculture and fisheries resources. This will include building the capacities of officers, responsible government agencies, island councils, and rural stakeholders through formal training programs utilizing fisheries field schools. Model programs for more sustainable and climate resilient practices will be tested, assessed, and ready for national replication.

All project activity will target the reduction of food security issues by setting in place capacities required for local communities to maintain and enhance ecosystem integrity. By project close, Kiribati should have operational models showing that food security, ecosystem integrity and climate change resilience can be enhanced through improved management approaches.

<b>Programme Period:</b>	60 months
<b>Atlas Award ID:</b>	60087627
<b>Project ID:</b>	00094574
<b>PIMS #:</b>	4570
<b>Start date:</b>	January 15, 2015
<b>End Date:</b>	January 15, 2020
<b>Management Arrangements:</b>	NIM
<b>PAC Meeting Date:</b>	TBD

<b>Total resources required (total project funds)</b>	\$11,586,210
<b>Total allocated resources</b>	
LDCF	\$4,446,210
Regular (UNDP)	\$ 140,000
<b>Other (partner managed resources)</b>	
Government	\$7,000,000

Agreed by: Secretary MELAD  14/1/16  
 Date/Month/Year

Agreed by: UNDP  20/1/16  
 Date/Month/Year



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## ACRONYMS AND ABBREVIATIONS

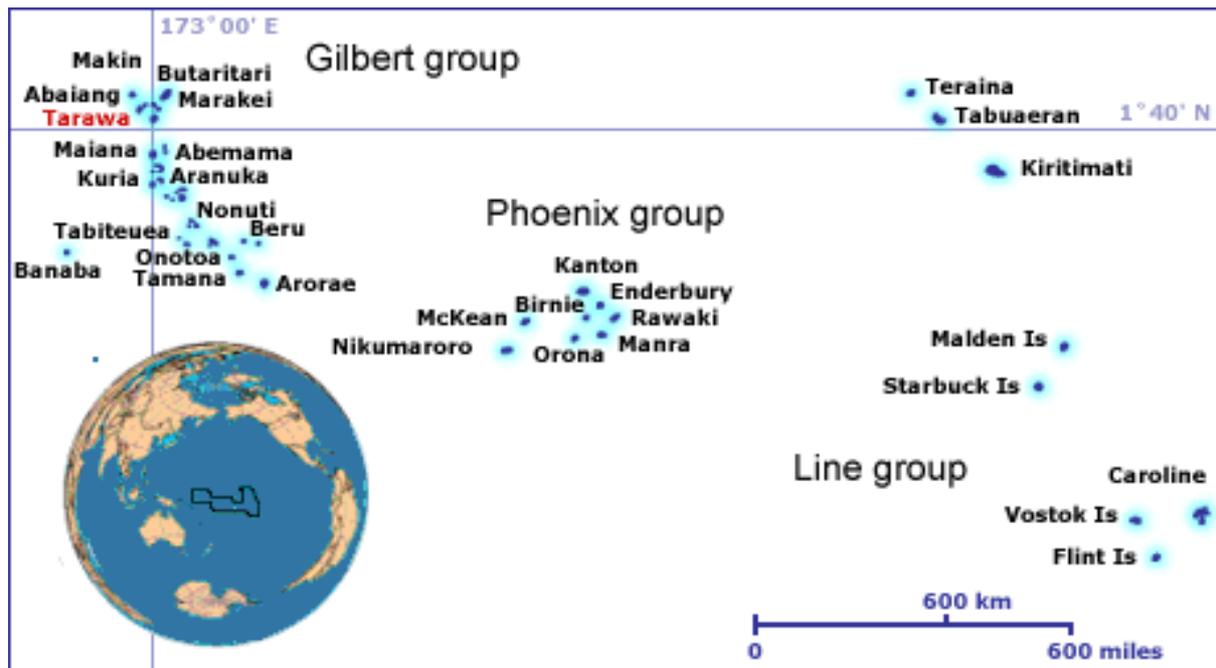
AMAT	Adaptation Monitoring and Assessment Tool
APR	Annual Project Review
AusAid	Australian Agency for International Development
CBO	Community-Based organization
CC	Climate Change
CITES	Convention on International Trade of Endangered Species
CO	Country Office
CPAP	Common Country Programme Action Plan
DRM	Disaster Risk Reducation
ECD	Environment & Conservation Division
EEZ	Exclusive Economic Zone
ERC	UNDP Evaluation Office Evaluation Resource Center
EU	European Union
FAD	Fish Attraction Device
FAO	United Nations Food and Agriculture Organization
FCFS	Fisheries Conservation Field Schools
GEF	Global Environment Facility
IFAD	International Fund for Agricultural Development
ISS	Implementation Support Services
JICA	Japanese International Cooperation Agency
KAP	Kiribati Adaptation Project
KDP	Kiribati Development Plan
KFL	Kiribati Fish Limited
KIRICAN	Kiribati Climate Action Network
KJIP	Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management
KNEG	Kiribati National Expert Group on Climate Change and Disaster Risk Management
LDC	Least Developed Country
LDCF	Least Developed Country Fund
M&E	Monitoring and Evaluation
MCIC	Ministry for Commerce, Industry, and Cooperatives
MCTTD	Ministry of Communication, Transport and Tourism Development
MELAD	Ministry of Environment, Lands and Agriculture Development
MET	Meteorological
MFED	Ministry of Finance and Economic Development
MFMRD	Ministry of Fisheries and Marine Resources Development
MIA	Ministry of Internal Affairs
MoE	Ministry for Education
NAPA	National Adaptation Program of Action
NDRMP	National Disaster Risk Management Plan
NGO	Non-Governmental Organization
NZ	Government of New Zealand
OB	Office of Te Beretitenti
PIF	Pre-Investment Feasibility
PIR	Project Implementation Reports
PM	Project Manager
PMU	Project Management Unit
PPG	Project Preparation Grant
RTA	Regional Technical Advisor
SID	Small Island Developing State

SLM	Sustainable Land Management
SOPAC	SPC Applied Geoscience and Technology Division
SPC	Secretariat of the Pacific Community
STA	Senior Technical Advisor
TML	Te Mautari Co. Ltd
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
VCO	Training on Virgin Coconut Oil
WOI	Whole of Island Approach

## PART I: SITUATION ANALYSIS

### 1.1. Brief Country Overview

1. Kiribati is situated in the Central Pacific Ocean. The nation is composed of 33 islands arranged in three groups: The Line, Phoenix, and Gilbert islands. There are 21 inhabited islands. The nation has very little land and a very large exclusive economic zone (EEZ). Kiribati's EEZ is 3.5 million km<sup>2</sup> or roughly the size of Australia. The total land area is 771 km<sup>2</sup>. Kiritimati (Christmas) island has by far the most land at 384 km<sup>2</sup>. The remaining 32 islands average 17 km<sup>2</sup> or less of land. All of Kiribati's atolls are long, narrow and less than 4 meters above mean sea level. Distance between islands is immense and transportation is extremely limited.



2. The nation's population is expanding. The population grew from 85,000 in 2000 to a current 110,000 residents. Nearly 50% of residents live within the confines of the capital city, Tarawa. The population density in Tarawa is nearly 3,500 persons per square kilometre. Christmas Island has approximately 8,000 persons. This is the largest population outside of Tarawa. The remaining outer islands have populations of between 2,500 and 4,000 persons. Two commodities, bonefish (*Albula glossodonta*) and coconut, dominate the diets of rural I-Kiribati. There is very little hunger in Kiribati and nutrition levels are generally considered quite good.

3. Kiribati is a Small Island Developing State and one of the Least Developed Countries in the world. The country's international economy relies upon overseas development assistance, fees from EEZ tuna licenses, remittances and copra (coconut) export. The government estimates that donor aid accounts for nearly 25% of GDP with nearly US\$ 15 million annually received from an Australian trust fund. According to the 2013 Human Development Index, Kiribati ranks 133 from 188 evaluated nations. Kiribati has one of the world's lowest GDP and is ranked 212 globally. The per capita GDP is slightly better, estimated at US\$ 6,200 as of 2012 or 144th globally. Import of all commodities, including food, is exorbitant. The nation's primary work force depends upon a combination of remittances, fishing and limited agriculture for both food security and limited income. Although figures do not exist, unemployment and/or under-employment are considered to be very high. The government employs nearly 35% of the paid labour force. Although rural populations are not significantly involved in the tuna trade, tuna fishing is vitally important nationally. Tuna fisheries provide roughly 42% of the GDP.

4. The democratic nation gained independence in 1979. The President serves as Head of State and Government. Presidential candidates are nominated by Parliament. The position is elected nationally.

The nation has adopted a number of germane laws and policies, including the Environmental Act of 1999.

5. Most immediate natural resource management decisions occur on the island level. Local Island Councils are responsible for setting and implementing island policies. Twenty islands in Kiribati have Island Councils. The Councils are generally composed of representatives from villages located on the island. Individual members then work at the behest of the village's chief and/or group of elders. According to the Local Government Act, the Island Council has direct jurisdiction over natural resource use. This includes land use, agriculture, and all fisheries located within 5.5 kilometres of the island.

6. Almost all land is privately owned. Ownership is generally hereditary and highly complex. Lands may be registered under the most senior family member, but there are generally multiple owners sharing lineal rights. Exceptions are a few atolls such as Christmas Island and the Phoenix Islands that are owned primarily by the government. On these islands, government leases property to individuals and businesses.

7. Agriculture is challenged and limited. There is very little land. Where land does exist, the soils are generally poor. According to FAO, Kiribati's soils are some of the world's poorest. Droughts are prolonged. Fresh water is lacking and limited to ground water which is often brackish. Drought induced salinization of ground water in the mid-1950's and 1960's forced the permanent resettling of all inhabitants from the Phoenix Islands. The few crops that do exist consist of pandanus, bwabwai, breadfruit, banana, and coconut. Most agriculture production tends to be organic. Overgrazing is not a common problem. Livestock is generally limited to a few household pigs. Traditional and highly complex ownership patterns restrict land development.

8. Coconuts are highly important for both subsistence and commerce. Copra (dried coconut) is a major export subsidized by the government. On many islands, coconuts are still used as a form of barter. The ownership of coconut fields is generally familial. Although the family to whom the plot belongs is known, the owner often does not reside on the island. As a result, coconut groves on Kiribati tend to be "wild". The understory is often densely vegetated. This situation is very positive both in terms of food security, land degradation and climate resilience. There is a marked and obvious difference in terms of soil erosion where coconut groves that do and do not have understory. The dense understory promotes ground water retention and contributes greatly to the stabilization of coastal zones.

9. There is very little tourism to Kiribati, yet government estimates that tourism provides 20% of the GDP. The only "major" tourism location is Kiritimati (Christmas) Island. The island is relatively easy to access via Hawaii and Fiji. The island has become a destination for international sport fishing. This is primarily catch and release fly-fishing targeting bonefish and trevally. Although specific numbers are not available, recreational fisheries represents a significant and growing revenue stream for this island.

10. Coastal (lagoon) fisheries are the backbone of the nation's domestic livelihood and food security. Subsistence fishing is the primary food source for nearly all of rural Kiribati. Nearly every islander relies upon the riches of the nation's marine wealth for their survival. This means that food security and ecological integrity are highly entwined. The nation has the highest per capita fish consumption for all Pacific Island nations. On average, each person consumes 115 kg fish annually. Very few fishing families have access to motorized craft. Most islanders estimate that less than 5% of the total fishing families own a motorboat. This is slowly changing with many "cooperatives" forming with teams of few fishing families pooling financing to purchase motors. Bonefish are by far the most popular and important food source for I-Kiribati. The IUCN red list description states that an estimated 1,000,000 and 5,000,000 bonefish were harvested from the Tarawa lagoon in 2008.

11. The nation's marine biodiversity is significant. The atolls and reefs spread throughout the EEZ are critical to the maintenance of the entire region's marine fisheries resources. However, biodiversity located close to any inhabited islands is generally not afforded substantial protection and tends to be highly exploited based upon open resource access regimes. There are hundreds of marine species, including many CITES I species. Species of note include Green (*Chelonia mydas*), Hawksbill (*Eretmochelys imbricata*), Loggerhead (*Caretta caretta*), Olive Ridley (*Lepidochelys olivacea*) and

Leatherback (*Dermochelys coriacea*) turtles. The nation's remote atolls provide critical refuge for a host of migratory bird species. Recognizing the importance of the nation's biodiversity, the people of Kiribati recently announced the creation of Phoenix Islands Protected Area. This protected area covers over 400,000 km<sup>2</sup>.

#### Pilot Sites

12. The project will be implemented on the following islands: Abemama, Nonouti, South Tarawa, and Maiana. Each island selected represents a unique opportunity to address food security and climate change resilience improvements. Activities at each site will demonstrate improved coastal zone management regimes suitable for national replication and upscaling. Stakeholders, including Island Councils, have expressed a strong desire/willingness to support this innovative project. Due to logistical challenges and associated costs, the three outer islands (Abemama, Nonouti, and Maiana) selected are located a reasonable distance from Tarawa. The three outer islands are also locations with relatively few existing donor activities. Avoidance of stacking donor activity was purposeful. This approach will limit duplication of effort and increase synergies.

13. The food security and climate change challenges issues found on the proposed pilot site islands is emblematic to those found throughout Kiribati. Local residents do not currently face food security challenges. Residents will face severe future challenges if current trends are not reversed.

14. Coastal-zone fisheries are the prime source of nutrition. These same fisheries are also targeted for expanding commercial operations, particularly the drying and selling of fish to the urban areas of Tarawa. Coastal zone fisheries at each pilot site are over-exploited. Rigorous fisheries data does not exist. However, generally accepted anecdotal data indicates that fisheries are in decline at each pilot site. Fisheries declines are compounded by the negative impacts of population growth, shifting economic demands (e.g., requirements to generate school fees), and on-shore land degradation (e.g., removal of mangroves to construct causeways, pollution and algae blooms from livestock and human waste, etc.). This combination of factors is slowly degrading ecosystem integrity and dependent food security. Climate change is and will continue to accelerate all of these issues.

15. In spite of emerging environmental challenges such as climate change, the overall ecological conditions necessary to support sustainable fisheries exist at each pilot site. Reefs are in good condition. Coastal zone fisheries beyond the reach of artisanal fishing families are very healthy. The problem is that the regulatory and management regimes required to support sustainable fisheries do not exist in Kiribati and/or the selected pilot sites.

16. Communities at both sites must shift current "open access" practices to more sustainable "community-managed" regimes. This requires communities to embrace more creative management approaches and realize economic alternatives that will both compensate and incentivize management improvements. Commercial and subsistence use must be better regulated to allow for maximized production within tolerable limits. Simultaneously, non-exploitive alternatives must be generated to replace lost resource access. For Kiribati communities to build resilience into their management of coastal zone resources, they must have a means to derive an economic benefit from these resources that is a viable alternative to direct take. Although opportunities for improved management, regulation, and valuation are present, the investments and capacity necessary to catalyse these improvements are not in place.



**Map of Tarawa, Maiana (Gilbert Ridge), Abemama and Nonouti Pilot Sites**

Abemama Pilot Site

17. Abemama is within the Gilbert Group approximately 152 km southeast of Tarawa. The total land area is 27 square kilometres. Atoll width varies from 50 m to 2 km. The atoll has more than 150 square kilometres of lagoon and nearly 70 square kilometres of reef.

18. There are eleven villages and approximately 583 households. The average household size is 4.8 people. The population has shown steady growth over the last forty years: 2,300 (1973), 3,218 (1990), 3,142 (2000), and 3,200 (2010). Over 90% of the population is literate. More than 1,000 students attend the atoll's 8 schools. The island has four clinics and one health centre. The island is serviced by both air and ship from Tarawa. Most residents use non-motorized boats, bicycles or motor scooters for transport. There are fewer than twenty cars on Abemama.

19. Nearly all land is privately owned. The island has no surface water, but relatively high rainfall. According to the Government of Kiribati, nearly all households rely upon groundwater while only a few (6%) have cisterns for rainwater.

20. In spite of poor soils, food crops such as coconut, giant taro, pandanus and breadfruit grow well. Home gardens are also common relative to other islands. Nearly 25% of households have home gardens growing sweet potato, cabbage and other vegetables for consumption. Most families keep 1 -

2 pigs that are butchered for special occasions. There are several thousand chickens also maintained by households.



### Map of Abemama Island

21. Copra production is very important at Abemama. The island averages between 2,000 - 3,000 tons annually. This is very high for Kiribati. The annual value of copra is approximately US\$ 1.3 million. Copra production is highly volatile, depending upon price. Some years, households report copra earnings of more than US\$ 1,000. Other years, the value is US\$ 500 or less.

22. Although figures do not exist quantifying the extent of consumption, fish is the undisputed main food source for islanders. Fish are regularly dried and stored for both household use and commercial sale. Due to proximity to Tarawa, the island is a prime location for commercial exploitation.

#### Nonouti Pilot Site

23. Nonouti is in the Gilbert group. The atoll is approximately 100 kilometres southeast of Abemama and 260 kilometres from Tarawa. The atoll is nearly 40 kilometres long and less than 1 kilometre wide. The total land area is 20 square kilometres. The island has over 400 square kilometres of lagoon and 40 square kilometres of reef.

24. There are nine villages on Nonouti. The island's population has risen and fallen slightly over the past forty years: 2,223 (1973), 2,930 (1985), 3,042 (1995) and 2,683 (2010). However, the island has a young population with more than 40% under the age of 15. There are nine schools on the island with a total enrolment of approximately 800 students. The island has six clinics and one health centre.

Nearly all land is privately owned. Approximately 35% of the island's population reports receiving remittances from relatives living/working overseas.

25. Nearly all inhabitants rely upon ground water extracted from shallow, 3 - 5 meter wells. Wells are unprotected and the quality of water is considered to be poor. The water is often brackish.

26. There is a single protected area on the atoll. The Noumatong Bird Sanctuary is located at the far north of the atoll. The Island Council manages this sanctuary. The total area is estimated to be 250 hectares.



### Map of Nonouti Island

27. Fisheries are the island's primary food source. Almost 100% of households engage in near-shore fishing. Very few venture into the deep ocean beyond the reef. As with other areas of Kiribati, most fishing is done with set nets and by either wading or using small sailboats. The primary target is bonefish. The fish are dried for domestic consumption and commercial sales, including export to Tarawa. The islanders gather sea cucumber and sea worms, both considered important cash crops for Nonouti. Some estimate that more than 50% of the island residents generate income from the sale of marine resources.

28. For agricultural products, most residents rely upon coconuts, bwabwai, breadfruit (*Artocarpus altillia*), te bero, bananas, and pandanus (*Pandanus tectorius*) tree. According to the Government of Kiribati, only 4% of all Nonouti households keep home gardens. Production of copra is a very important

source of cash. Annual production ranges widely from 150 tonnes to nearly 2,000 tonnes. Production swings based upon commodity prices not copra availability and/or food security requirements. Residents do not rely upon copra cash for food security. During high price years, the perceived effort relative to benefit ratio aligns and production increases dramatically.

### Maiana Pilot Site

29. Maiana is also in the Gilbert group. The atoll is approximately 44 kilometres south of Tarawa. The total land area is just over 16 square kilometres. The large lagoon is more than 73 square kilometres. The reef system is nearly 30 square kilometres. The atoll has more than 2,000 inhabitants and approximately 13 villages. The population has remained relatively stable over the past thirty years. There are 383 households on the island with an average household size is 5.3 people. The literacy rate is approximately 90%. However, the island has no secondary school. Students aged fifteen and older generally attend boarding school in Tarawa. The island has a government staffed health centre.



### **Map of Maiana Pilot Site**

30. The island is covered with dense brush. Vegetation grows well due to relatively high rainfall. The island received extensive mangrove replanting support. In 1996, there were 21 hectares of mangroves. Between 2008 and 2010, an additional 250 hectares of mangroves were planted.

31. Most cropping is done with limited cultivation. Main crops include coconut, taro, pandanus and banana. Residents of Maiana often grow food crops along the islands swampy interior. These crops

are often inundated by sea water incursion. Copra production is very important at Maiana. The most recent estimates place the value of copra at US\$ 240,000 or US\$ 118/person.

32. The island has over 300 wells and nearly 40 rainwater cisterns upon which residents depend for fresh water. Unlike many islands, nearly fifty-percent of Maiana households have flushing toilets with septic tanks.

33. As with all of Kiribati, Maiana islanders depend upon marine resources for subsistence and commerce. There are approximately twenty outboard motors on the island. Although rigorous data does not exist to quantify the extent of exploitation, the proximity of Maiana to Tarawa drives commercial fishing. Rigorous data does not exist to quantify the extent of exploitation for commercial or subsistence use. Anecdotal evidence indicates that both sharks and sea cucumbers are targeted for export and quickly disappearing.

#### South Tarawa Pilot Site

34. South Tarawa is the capital of Kiribati. The total Tarawa lagoon (north and south Tarawa) covers over 500 square kilometres. The reef area is nearly 130 square kilometres. The port accommodates the large tuna fleet that fishes the county's EEZ. The southern atoll is composed of three separate islets: Bonriki, Bairiki, and Betio. The atoll also has three administrative subdivisions: Betio Town Council, Teinainano Urban Council, and Eutan Tarawa Council. Tarawa is one of the most densely populated places on earth. The total land area of South Tarawa is approximately 15 square kilometres. In 1985, the population of Tarawa was 25,000. Currently, the population is estimated to be more than 50,000. This population growth is the result of both birth rates and emigration. South Tarawa unemployment is estimated to be more than 20%.

35. Due to overcrowding there is very little open space and traditional agriculture is almost impossible. Unlike most of Kiribati, land in South Tarawa is privately owned.

36. The rapid population growth has contributed to the decline of overall ecosystem health. Sanitation, waste disposal, etc. are generally substandard and substantial amounts of waste end up in the adjacent seas. Sand extraction for construction, development of causeways, and the impacts of the large fleet all contribute to degradation. Freshwater is scarce and water borne diseases prevalent.

37. In spite of the lagoon's degraded water quality, families continue to practice fishing. Recreationalists and at risk community members (e.g., unemployed and underemployed) engage in near shore fishing. Larger commercial operators with power boats engage in fishing further from town. Firm data does not exist and estimates vary widely, but as recently as the late 1990's between 1,000,000 and 5,000,000 bonefish were harvested annually from the Tarawa lagoon. Much of this harvest is sold through fish mongers at the Tarawa market. As with most of Kiribati, coastal zone fishing in South Tarawa is not regulated and overharvest of marine life is very acute. Nearly all fish stocks, including bonefish, are in rapid decline.



**Map of South and North Tarawa**

## 1.2. Climate Change Induced Problem

38. As a country comprised of dry atolls reliant up lagoon fisheries for daily survival, Kiribati is extremely vulnerable to climate change. The NAPA identifies several potential climate induced problems. If measures are not taken to strengthen resilience, impacts may have significant negative impacts on the country’s already tenuous ecosystem integrity and associated food production system.

39. Kiribati is highly dependent upon coastal zone fisheries for both subsistence and commerce. Lagoon fisheries have historically provided amply and fishing methods have tended to be fairly sustainable. However, increased population, shifting economic demands, and environmental degradation are all converging to deplete lagoon fisheries. This situation, when combined with the impacts of climate change, poses a very high risk to both food security.

40. Climate change compounded with current unsustainable management practices may collapse coastal zone fisheries. Climate change alterations to water temperature, water levels, currents and marine food chains will almost certainly negatively impact the integrity of coastal zone ecosystems. Increased sea temperatures will cause stresses on coral reefs and fish species and will hinder coral reef recovery in cases of seasonal or annual variations in temperatures causing coral bleaching. The impacts of climate change will be particularly evident for coastal zones that already suffer from over-

exploitation of fish stocks and pollution from nearby communities. This may include increased turbidity and delivery of waste to lagoons due to erosion and run-off. The ecological integrity of key habitats (coral reefs, mangroves, sea-grasses and intertidal flats) will be diminished. Climate variability may increase probability and severity of storm surges and associated adverse effects such as erosion.

41. The nation’s agricultural sector is generally weak due to factors such as very poor soil fertility and limited fresh water. The soil is high in alkaline coral and very porous. There are generally no surface water sources. The only water supply is rain or ground water. Most of the islands lie within the equatorial dry belt. These islands must endure prolonged periods of drought. The limited groundwater is already threatened by increased salinity and pollution from human and domestic livestock waste. Substantial shifts in rainfall events and associated unreliability of water systems will further diminish the resilience of already weak agricultural systems. Although coconut is a relatively resilient crop, other produce upon which islanders depend for added nutritional value requires fresh water to produce and will be threatened.

42. Ground water monitoring is limited. The availability of ground water in Kiribati is almost entirely dependent upon rainfall. This means that water required for both drinking and crop production is seasonally constrained. Local residents report that ground water salinity levels are increasing. As the impacts of climate change continue to advance, rainfall patterns will likely become increasingly erratic. This greatly increases risk exposure to island inhabitants, creating challenges in terms of planting regimes and increasing risk of crop failure. Many international projects are currently working to address this issue.

Kiribati Climate Projected Changes

Climate variable	Projected changes
Air temperature	Surface air temperature will continue to increase (very high confidence). Under a high emission scenario: Annual and seasonal mean temperature will increase by 0.3–1.3°C for the Gilbert Islands and by 0.4–1.2°C for the Phoenix and Line Islands by 2030 (high confidence). Annual temperature increases could be greater than 3°C by 2090 (moderate confidence). (As there is no consistency in projections of future ENSO activity, it is not possible to project interannual variability in temperature.)
Sea-surface temperature	Sea-surface temperature will continue to increase (very high confidence): Sea-surface temperatures will increase by 0.6–0.8°C by 2035 and by 1.2–2.7°C by 2100 (Bell et al. 2011). (As there is no consistency in projections of future ENSO activity, it is not possible to project inter-annual variability in sea-surface temperature.)
Rainfall	Rainfall patterns will change. Wet season, dry season and annual average rainfall will increase (high confidence). Annual and seasonal mean rainfall will increase (>5%) by 2030. The majority of models simulate a large increase (>15%) by 2090 (low confidence).
Extremes	There will be more extreme rainfall and very hot days. The intensity and frequency of days of extreme heat and warm nights will increase and cooler weather will decline (very high confidence). The intensity and frequency of days of extreme rainfall will increase (high confidence).
Drought	The incidence of drought will decrease (moderate confidence). In the Gilbert, Phoenix and Line Islands mild drought will occur approximately seven to eight times every 20 years by 2030, decreasing to six to seven times by 2090 (low confidence). The frequency of moderate drought is projected to decrease from two or three times every 20 years by 2030 to once or twice by 2090 (low confidence). Severe drought will occur approximately once or twice every 20 years by 2030, decreasing to once every 20 years by 2055 and 2090 (low confidence).
Sea level	Mean sea level is projected to continue to rise (very high confidence):

	Mean sea level will rise by approximately 5–15 cm by 2030 and 20–60 cm by 2090 under the higher emissions scenario. Interannual variability of sea level will lead to periods of lower and higher regional sea levels with levels similar to the past. The sea-level rise combined with natural year-to-year changes will increase the impact of storm surges and coastal flooding. (Scientists warn that due to the melting of large ice sheets such as those in Antarctica and Greenland, rise could possibly be larger than predicted. But currently not enough is known to make predictions confidently.)
Ocean acidification	The acidification of the ocean will continue to increase (very high confidence). 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). Ocean pH will decrease by –0.1 units by 2035 and by –0.2 to –0.3 units by 2100 (Bell et al. 2011). Coral reefs are projected to degrade progressively with losses of live coral of > 25% by 2035 and > 50% by 2050 due to rising sea-surface temperatures and more acidic oceans (Bell et al. 2011).

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

### Climate change projections of parameters

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

Source: Warrick et al. 2013

### Climate change projections of variables with different emission scenarios

Climate variable and emission scenario	Timeframe		
	2030	2055	2090
Temperature (change relative to the average of period 1989–1999) in degrees Celsius (°C)			
Low emission	0.2–1.2	0.6–1.9	1.0–2.4
Medium	0.2–1.4	0.9–2.3	1.6–3.5
High	0.3–1.3	1.0–2.2	2.2–3.8
Sea-level rise (change relative to the average of period 1980–1999) in cm			
Low	4–13	9–25	16–45
Medium	5–14	10–29	19–57
High	5–14	10–28	20–58

Source: CSIRO 2013

## 1.3. Underlying Causes

43. I-Kiribati have three options available to secure food: buy, grow, or gather. Purchasing food is challenging. The islands of Kiribati are extremely isolated and resource poor. Cash and viable livelihood alternatives are limited. Remoteness means that imported food is extremely expensive. Growing food is very difficult on most islands due to limited land space, poor soils and scarce water. As a result, rural I-Kiribati turn to the coastal zone to provide their sustenance and food security. Gathering food from the coastal zones has traditionally been relatively easy and free. At the same time that the coastal zones support subsistence users, the same coastal zone fisheries are being exploited increasingly for commerce. Much of the commercial market is supported by the demands of urbanized Tarawa. Nearly all islands collect and dry fish for transport to Tarawa. Another driver of commercial exploitation is the requirement to generate cash for school fees. Many islanders must pay hundreds of dollars every year to send their children to school. Although remittances, small businesses, and

government jobs supply some cash to some families, many rural families rely upon coastal zone fisheries to generate cash required to educate their children.

44. This situation is not feasible over the long-term. Demands are increasing without commensurate resource management and oversight. This “open access” management approach generates and exposes Kiribati to the triple threats of overexploitation, habitat degradation and climate change. The cumulative impact of these threats will accelerate the reduction of ecosystem resilience and associated food security. Although some progress is being made to address adaptation challenges, most problems will persist under the baseline without catalytic investment. There are no environmental safeguards and/or replicable models of improved management in place to mitigate expanding threats.

#### Threat #1: Overexploitation

45. There is very little substantive data regarding the exploitation of Kiribati’s coastal fish stocks. Monitoring of coastal zone fisheries status and use is very thin. However, strong anecdotal exists. Local community members, leaders and government representatives, and fisheries experts all state that once ample coastal fish stocks are diminishing. The IUCN red list roughly estimates that Kiribati bonefish stocks have likely been depleted by at least 30% over the past fifteen-year period due to overharvest. Stakeholders observe that both the number and size (age) of these fish is dropping. Easily harvested species such as sea cucumber and bonefish are particularly hard-hit. Every islander tells stories of declining stocks of bonefish and declining numbers of mature bonefish caught. There is a very high risk that continued over-exploitation of fisheries resources will lead to localized extinction of many species upon which local communities rely for subsistence and economic well-being.

46. The real challenges to long-term food security are overfishing and climate change. The 2013 - 2025 Kiribati National Fisheries Policy notes that lagoon and coastal fisheries currently provide sufficient protein for most I-Kiribati. The policy recognizes that the challenges to long-term food security are based upon fisheries health. The policy states that fisheries are under strain from population pressures compounded with climate change. The policy notes that the response to increasing lagoon fisheries pressure should be the management of overfishing in order to maintain sustainable levels.

47. A 2009 Secretariat of the Pacific Community (SPC) study on food security found that overpopulation in urban centres such as South Tarawa threatens the sustainability of the immediate adjacent coastal fisheries and impacts distant rural communities. The report notes the dangers and risks that rural communities are now motivated to increase their commercial fishing activities to supply urban markets.

48. According to Kiribati’s fourth “National Report to the Convention on Biodiversity” (2013): *“The marine environment and resources in particular are seen as the commons that is open for unsustainable exploitation and utilization, thus, vulnerable to the ‘tragedy of the commons’ issue. Unsustainable harvesting and utilization is one of the many threats facing marine and coastal biodiversity in Kiribati. Similarly, there is a national need to undertake strategic resource management measures that would safeguard the deteriorating status of natural resources for future generations of I-Kiribati. At the same time, it is essential to take into consideration traditional conservation practices, knowledge, skills and ethics that are effective in the day- to- day utilization and management of natural resources available. Unless there are formal controls or regulations in place, individually, people would do the most to harvest and utilize these resources to the maximum, engaging in destructive activities that would allow maximum gain. Collectively, the consequences of their doing are not seen as their problem, but rather a problem that is left for Government to solve alone.”*

49. All outer islands supply fish to Tarawa either through regular markets or grey/familial markets. This is primarily bonefish and snapper, but also includes shellfish, eel, and other species. Most of the fish is dried using traditional methods. Goods are transported either by plane or by boat. Stakeholders note that it is not uncommon for families to fish 2 – 3 times per week and to harvest on average 300 fish each time. A bonefish sells for US\$ 0.50. Some families target bonefish during the monthly spawn migration and harvest “1,000’s” in a single set. The additional pressures placed on resources to supply Tarawa and provide revenue for local families is pushing resources – particularly fisheries and even more precisely bonefish – to the brink. This applies not only to fish, but also to other marine species such as turtles, sea cucumber, and molluscs. These are all exploited for subsistence and commerce.

50. As the population continues to grow and economic and subsistence demands increase, the rate of exploitation will also increase. As with many rural communities, school fees are a major driver of over-exploitation. The only way most rural families are able to generate the US\$ 500+ required to support each child's elementary and secondary education is by fishing. This is particularly evident for families that do not benefit from remittances from family members employed off-island or outside of Kiribati. At the same time, remittances are generally used to purchase goods. Remittances do not displace subsistence.

#### Threat #2: Habitat Degradation

51. Rates of coastal erosion are very low. Nearly all coasts and islands benefit from substantial ground cover. However, removal of mangroves and development coastal zone infrastructure (e.g., causeways, water courses, etc.) generate localized habitat degradation. The major threat is on-shore and near-shore waste disposal. Islanders tend to settle on or near the lagoon side. With growing population numbers, increased harvest of fish, etc. the lagoons are showing signs of pollution. Pollution sources are generally from sewage (open defecation), garbage, domestic animal (primarily pig) waste, and cleaned fish. The absorptive capacity and dilution rates of the lagoon systems seem to be exceeded as evidenced by both eutrophication and algae blooms. This causes a further imbalance to the system and compounds an already difficult situation. Diminished fish stocks may both result from and intensify the impacts of pollution. The addition of climate change, with sea level and temperature rise, will very likely enlarge this situation. If this trend continues, there will be increasingly adverse impacts upon human health, ecosystem integrity, and ultimately food security.

#### Threat #3: Climate Change

52. As noted, climate change is certainly impacting the ecological integrity upon which Kiribati's food security depends. This includes rising sea levels and temperatures that are and will likely continue to adversely impact coral reefs and fisheries. This will compound the existing issues related to fresh water and coastal lagoon pollution. With the quality of most habitats already degraded and/or facing imminent threats, there is little resilience within the system to withstand the addition of climate change's negative impacts. The cumulative impact of climate change with habitat degradation and overexploitation will be untenable.

### **1.4. Long-Term Solution and Barriers to achieving the Solution**

#### Long-term solution

53. This project seeks to contribute to the long-term solution of ensuring food security within the context of global climate change. In rural Kiribati, food security depends almost entirely upon each island's ecological integrity. Coastal zones provide the natural resources upon which residents rely for existence. The existence of most rural I-Kiribati is almost entirely reliant upon the resources that can be found within the boundary of reef and, to a lesser extent, nearby deep-water ocean. Most of these islands have ecologically intact coastal zones. However, ecological integrity is already very vulnerable due to current "open access" exploitation. If trends continue, these island systems will collapse due to overexploitation, habitat loss, and climate change. Once ecological integrity and associated climate change resilience is lost, residents will be faced with very serious food security issues.

54. Kiribati's 21 inhabited islands are ecologically connected via the larger Pacific Ocean, but generally disenfranchised from each other by great distances. Reaching the remote islands from the capital of Tarawa requires substantial effort and cost. Communications services, although improving, are still very sporadic and unreliable. These issues make direct national government oversight of natural resource management and planning nearly impossible. Ensuring food security requires an approach that recognizes that each island is an isolated and enclosed system.

55. Generating island-based management responses designed to maintain the ecological integrity of each system is paramount to achieving the desired solution. The approach must be predicted upon community-based initiatives that benefit from national level guidance, technical support, and scrutiny. This will require setting in place a comprehensive management regime that individual islands can use

to monitor and regulate the use of coastal zone resources. Communities must have incentives for improved management and reasonable alternatives to compensate for any food insecurity that may result from the loss of direct resource consumption. This can be modified in part through more scientifically rigorous management regimes that help generate more balanced resource access and use. However, communities will also need economic alternatives such as tourism, value added approaches, and/or more creative fiscal policies to compensate for potential loss of resource access. This system of safeguards (monitoring, improved management, and alternative valuation) should all be directed to building and maintaining climate change resilience.

#### Barriers to achieving the solution

56. Although the solution is apparent, reaching this solution requires having the capacity to implement necessary resource management safeguards at the individual island level. Although there are nuanced differences between various islands, the basic management regime and story are the same. There are no comprehensive regulatory, planning, and/or monitoring frameworks in place to conserve terrestrial and/or near-shore natural resources. Both lagoon and terrestrial resources are essentially managed under an open access regime. The current open resource management regime is very much the primary driver of ecosystem degradation.

57. Without basic management tools, resource access remains exposed to continuous and nearly unlimited use. This creates a very risky situation. Under this open resource access regime, all community members may maximize resource use as they see fit. Loss of ecosystem integrity is the root cause of Kiribati's climate change resilience and food security challenges. Only limited access to financing constrains the wholesale exploitation of island resources, e.g., a general lack of motorboats, expense of nets and other equipment, and the challenges of reaching a distant market. As greater donor investment, increased remittances, tourism development and other capital in-flows expand, the existing monetary constraints to resource extraction will slowly erode. A rapidly growing population will compound this situation and impacts. Unless action is taken, the current pathway will lead to a continuing and every more decline in ecosystem integrity. This will result will be increased climate change vulnerability and, ultimately, degraded food security.

58. There are two main barriers that stymie efforts under the baseline to address this problem and reach the desired long-term solution.

#### **Barrier 1: Limited institutional and individual capacity to plan and implement actions to reduce the effects of climate change-induced impacts on food and nutrition security.**

59. *National Adaptation Monitoring:* Kiribati does not have a national system of coordinated monitoring, management, and reporting to guide informed decision-making. There is no national tool in place to monitor and assess climate change and associated impacts to ecosystem integrity and food security. The government does not have a program to systematically monitor basic indicators related to agriculture, fisheries, nutrition, livelihoods, fresh water, natural resource use, and biodiversity conservation. There is no systematic generation and integration of critical natural resource use between Outer Islands and national agencies. The overall understanding amongst the general public, policy makers and government departments regarding natural resource use and climate change trends, forecasts and possible impacts is low. The national monitoring gap results in a dearth of information and support upon which to build adaptation improvements and limited capacity and knowledge at all levels for the completion of effective vulnerability assessments.

60. There is not a central location and/or process to receive data and information from outer islands, ensure certain data generation is consistent, professionally collate and assess this information, and disperse this information to inform islands regarding threats analysis and recommended adaptation measures. The country's meteorological reporting systems are inadequate to serve as an early warning system. The national meteorological services lack equipment, training and the ability to obtain, synthesize and disseminate timely information on climate and forecast. There is very little awareness, understanding and/or monitoring of cumulative resource use.

61. To address climate change and food security issues requires cross-sector and multi-sector approaches necessary to maintain ecosystem integrity. The lack of a national tool for ecosystem-based adaptation monitoring and assessment compounds already challenged institutional collaboration. Most ministries develop their Ministry Operational Plan (MOP) in accordance to their budgetary allocations. Planning is not harnessed and synergized according to a set of clear and well-understood parameters generated by sound monitoring, assessment, and reporting.

62. *National Coastal Zone Fisheries Conservation Monitoring and Awareness:* The country has a pronounced lack of knowledge and awareness regarding coastal zone fisheries. Kiribati does not have a comprehensive and effective coastal zone fisheries research and monitoring program. No one knows the exact status of most coastal zone fisheries resources in Kiribati. The few technical staff within fisheries agencies are dedicated and do conduct research. However, these efforts are sporadic. Simple creel surveys are conducted, primarily near Tarawa. There is no rigorous monitoring and/or data regarding the total amount of catch and/or the use of this catch nationally. Coral monitoring activities are limited in scale and scope. The efforts of government agencies are extremely confined by both technical and financial constraints. They simply do not have the equipment, staff and/or technical guidance needed to complete this task. Agencies require the support of island communities to generate necessary data, but lack the capacity to transfer and incentivize monitoring skills to Outer Islands. At the same time, there is no national fisheries conservation campaign in place to build awareness regarding the status and conservation needs of fisheries and associated ecosystems. There is no program to expose national stakeholders to best international principles and practices that would help decision-makers apply the results of improved fisheries monitoring to design better fisheries conservation regimes.

63. *National Ecosystem-Based Management Platform:* Kiribati does not have a national framework to support sustainable resource use and build climate change resilience. Island Councils have immediate authority over natural resources. Island Councils exercise this authority by adopting by-laws (local regulations). However, Island Councils require national level technical guidance to create safeguards that integrate resilience within natural resource management practices. There is no comprehensive set of national level guidelines to help island communities generate these ecosystem-based adaptation measures. There is an urgent need for much more formal national level guidance regarding natural resource management and conservation at the atoll level. The Outer Islands must have national level assistance to generate local level safeguards to conserve ecological integrity and maintain the nation's food security.

64. Nearly all island resources are managed under an open access regime that increases risks associated with climate change. There is no national level platform to help island communities shift "open access" resource management to more sustainable community-based management. Coastal zone fishing, ground water, and land use are not managed to maintain ecosystem integrity. Expanding economic use of fisheries and, to a lesser extent, agricultural resources risks rapidly moving from a situation that was historically sustainable to one that risks highly unsustainable exploitation. The country has yet to evince the capacity required to incentivize more sustainable natural resource use and maintain the ecosystem integrity upon which climate change resilience depends. Removing this barrier and creating a national framework to guide improved resource management, monitoring and strategic planning is critical.

65. The nation benefits from the activities of approximately fifteen national Government Ministries. The most germane to this project are the Ministry of Fisheries and Marine Resources and the Ministry of Environment, Lands and Agricultural Development. The Government has also established the Kiribati National Expert Group on Climate Change and Disaster Relief. Situated in the Office of the President, this body is designed as a clearing-house and sounding board for climate change related activities. None of these have generated substantial guidance to assist Island Councils to adopt by-laws and/or other regulatory mechanisms to effectively improve the management of atoll lagoon and/or terrestrial resources. The national government does not have the financial and technical capacity to design, draft and implement a comprehensive management models that Island Councils can adapt and adopt to build the resilience of coastal zone resources.

66. *National Coastal Zone Fisheries Regulations:* The national enabling environment for the conservation of coastal zone fisheries is very weak. The government recently established the Phoenix

Island Protected Area. This massive protected area is located in the sparsely populated central Phoenix Island chain. The Kiribati National Fisheries Policy (2013 – 2025) provides guidance and priorities for fisheries management and investment by donors. However, the policy is not legally enforceable. The national government adopted a national Fisheries Act in 2010. The national Fisheries Act is primarily concerned with the management of the vast EEZ. This Act has comprehensive guidance regarding EEZ fishing (tuna), but has almost no guidance regarding the conservation, management and regulation of coastal zone fisheries. The fisheries department has formulated a couple of coastal management plans that do not effectively integrate climate change and/or ecosystem resilience.

67. There are a few very isolated examples of island-based fisheries management, but these are far from comprehensive or effective. Licenses are required for international anglers at Kiritimati Island. These tourists generally engage only in catch and release fishing. Christmas Island has also outlawed the harvest of bonefish to protect the highly valuable sport industry. Apparently, bonefish have made a speedy and remarkable recovery as a result. Canton Island in the Phoenix chain adopted by-laws regulating the export of fish. Visitors are limited to removing two bags of dried fish from the islands. The by-laws also state that community members should avoid taking too many resources from the sea. A community conservation officer enforces these by-laws. The total population of Canton Island is less than 100 persons and most work for the government. On some islands, limited management takes place with community management supported by traditional leadership modalities. Some islands have tried to regulate the harvest of sea cucumber. Other islands have outlawed “splashing” or the use of noise to drive bonefish to the net. No island council has adopted comprehensive and effective management mechanisms designed to maintain the ecosystem integrity of coastal fisheries. Island Councils generally lack the technical, financial and catalytic capacities required to advance further. A national enabling framework for the monitoring, regulation, and management of coastal zone fisheries that incorporates guidelines for island-based management is critical. This should include guidance for the establishment of coastal protected areas and the monitoring/reporting of take and off-island trade.

68. *Extension Support:* Extension officers representing national agencies are the primary conduit for capacity building, monitoring, and enforcement on each island. Although Kiribati’s extension officers represent the front-line of understanding climate change threats and devising community-based approaches, they have relatively low support to increase both their capacity and effectiveness. There is a very strong need to develop the skills sets necessary for extension officers to engage with island communities to help them understand and generate management objectives, options, and implementation skills.

69. Most islands have at least one agricultural and one fisheries extension officer. These extension positions are coveted. The application process is highly competitive. Thousands of young I-Kiribati apply for the few available extension posts. As a result, the extension officers are often some of Kiribati’s brightest young people. These officers are tasked with supporting Island Councils and other stakeholders to build capacity and implement national government initiatives. Extension officers live full-time on the islands and fully integrate within the community. This innovative “immersion” model is now replicated broadly throughout the Pacific. In spite of this strong baseline, there is an urgent need to improve and professionalize the training of extension officers. This is particularly required if they are going to be responsible for supporting the achievement of national ecosystem integrity and food security objectives at the island level.

70. New extension recruits go through a one-year apprentice program in the capital prior to field assignments. Their extension training covers basic production issues, e.g., how to make nets. The training does not formally and/or comprehensively cover issues related to climate change adaptation, biodiversity conservation, land and seascape planning, rigorous resource monitoring, and/or community-based management principles. Extension officers require improved skill sets to be able to help build local awareness and capacity regarding natural resource use and management. Extension officers must be capacitated to assist island communities to gather and report rigorous data on basic resource use and status. They need training to be able to monitor the harvest and sale of fisheries and/or agricultural products. They require the capacities needed to help monitor key resources such as lagoon fisheries and to transfer these capacities to local communities. Extension officers must understand the basic concepts related to resource planning, the establishment and management of marine conservation areas, and the shifting of open access

regimes to community-based management. This national capacity building and support barrier results in weaknesses in terms of transferring best national and international knowledge and practices to on-the-ground resource users and island decision-makers, particularly Island Councils.

**Barrier 2: Limited support for community-based adaptation measures necessary to increase human, natural and productive livelihood capital in affected communities.**

71. The second barrier is the absence of island experience with community-based climate change adaptation models to enhance ecosystem integrity and associated food security benefits. The current capacity barrier results in a heightened risk that island ecosystems will continue to degrade and food security will decline with the advance of climate change. Due to this barrier, islanders immediately responsible for resource conservation and food security are not able to:

- Build informed leadership skills necessary to maintain ecosystem services;
- Assess and monitor resources upon which food security depends;
- Promote community-wide awareness of climate change and food security issues;
- Strategically plan for long-term adaptation;
- Enact by-laws to improve management approaches; and,
- Demonstrate improved management alternatives to enhance food security.

72. *Informed Leadership:* Island Councils do not have the capacity and experience required to utilize their authority to engage in comprehensive and strategic resource management. There are no formal training programs to build this capacity. Island Councils are not exposed to basic integrated conservation approaches and practices. They generally have limited knowledge regarding the design and implementation of community-based natural resource management. They do not benefit from climate change adaptation and ecosystem conservation awareness building programs. Council members do not benefit from training programs and/or formal outreach regarding community-based climate change adaptation approaches. They are not aware of models for community-based management that will help decrease the severity of climate change impacts. Most islanders are not aware of the relatively cost-effective innovations that can be set in place to ensure that ecosystem integrity is maintained. Without international investment, there is very little chance that island leadership will benefit from exposure to and application of best-international management practices. So long as this knowledge barrier stands, Island Councils are not likely to adopt mechanisms to address threats and maintain ecosystem integrity.

73. *Community-Wide Awareness:* Extension officers are responsible for building community awareness regarding food security and ecosystem integrity. Because extension officers do not have the capacity and support required to effectively do this job, there is very little island-wide understanding of the nexus between climate change, food security, and the maintenance of ecosystem services. Officers representing both the agriculture and fisheries sectors need to have their capacity built so that they may actively bridge national and local level initiatives. They need “on-the-job” training assistance to be able to serve as a conduit for the delivery of best national and international practices to the local level. Extension officers do not benefit from a rigorous in-service training. They require practical, on-the-ground experience with how best to help guide the process of understanding climate change vulnerability and work with local communities to design pro-active and effective responses. Officers currently do not have practical working models showing how to improve their on-the-ground job effectiveness. Once extension officers are placed, they are essentially on their own and simply do the best they can with extremely limited support. The fisheries extension officers, for instance, do not generally have a boat. They are only able to conduct limited fisheries extension using a bicycle or perhaps small motorcycle. At the same time, they are provided with few technical tools. Extension officers are not supported with formalized outreach training programs and/or materials. There are no extension forums such as island based farmer and/or fisheries field schools to serve as conduits for transfer of skills and awareness. Extension officers have little awareness and/or practical guidelines for establishing and supporting community-based conservation and climate change adaptation models.

Removing this barrier will require doing the heavy lifting of assisting select extension officers to design and implement replicable models for improving community-wide awareness of issues impacting food security. There is an urgent need to work with these extension officers to create community-wide awareness programs that will be institutionalized at each island. These programs can then serve as a conduit for delivering awareness, monitoring, and resource use skills designed to enhance ecosystem integrity and food security.

74. *Resource Monitoring:* Stakeholders living on the Outer Islands of Kiribati have very little capacity to monitor resource use and status. There is an urgent need for communities to benefit from models for resource inventory and improved understanding of how best to maintain ecosystem integrity for both coastal and terrestrial resources. Without this capacity, there is little opportunity for informed decision-making and/or complete understanding regarding the implications of various management decisions. For instance, attempting to push agricultural development and/or commercial fisheries in a blind attempt to increase food security could very likely disturb the island's delicate ecology and result in even greater food security risk. The lack of monitoring is particularly critical for coastal zones where anecdotal evidence indicates that fisheries are already at or near the point of over-harvest. Islanders need cost-effective, community-based and scientifically rigorous models for fisheries monitoring and assessment. It is critical that extension officers working with local commercial and subsistence fishing families are able to quantify catch levels, trends, and potential long-term impacts. There are no island-based monitoring programs linked to national reporting and management. This means that both island and national decision-makers lack critical management information. Until replicable examples of island-based monitoring exist, this barrier will substantially reduce the ability of Island Councils, resource users and national decision-makers to make informed decisions regarding food security approaches.

75. *Strategic Planning:* Communities do not have experience with the design of comprehensive natural resource management and planning. Again, this applies to both terrestrial and coastal zone resources. There are no operational models of Island Councils empowered to comprehensively identify conservation challenges, prioritize climate change vulnerabilities, and adopt improved management practices. There are no working models to build the capacity of islanders to establish ecosystem integrity and food security objectives. There are no working models for strategic, island-based planning designed to reach set objectives and monitor progress towards achievement of those objectives. For instance, if fisheries are to continue as the mainstay for food security, communities require the capacity to plan where, when, and how best to manage coastal zone resources. Agricultural development must be done within a strategic planning context that identifies constraints such as water availability and the likely alterations that will take place as climate change advances. Island communities require the tools necessary to design and implement planning models that are both spatial and temporal. The establishment of marine protected areas (MPAs) is one tool. However, MPAs within the coastal zone are generally too small and surrounded by areas of over-harvest to be ecologically viable. Until this planning barrier is addressed, island communities will very likely continue to be unable to strategically plan resource use within parameters necessary to maintain ecosystem integrity and climate change resilience.

76. *Island-based regulatory framework:* As noted, Island Councils are responsible to adopt and implement by-laws (regulations) to govern resource management. However, there are no working examples of comprehensive by-laws designed to address food security threats. "Open-access" management approaches pose a serious hindrance to ecosystem integrity and food security. Island Councils do not have experience with shifting open-access to more sustainable community-based management. This is a situation not unique to Kiribati. A vast amount of international expertise and examples exist. However, Island Councils have not had an opportunity to build their capacity and knowledge regarding these best international principles and practices. Kiribati does not have working examples of permitting systems that support commercial and subsistence needs within linked to the achievement of long-term conservation objectives. There are no community-based enforcement models in place to help define and uphold best management practices. There are no examples of how to move from strategic resource planning to active resource management. There are no regulatory mechanisms to define benefit generation and sharing. There is no experience with the design of practices that

generate community-wide benefits to incentivize improved resource use, a critical component to successful community-based resource management regimes. There are no regulatory models to mandate community-based monitoring and allocation of resource use. This is a huge barrier that will, in the long-term, stymie the effectiveness of any attempt to ensure food security.

77. *Community-based fisheries management alternatives:* Kiribati does not benefit from the active demonstration of community-based alternatives to reduce pressures on fisheries, the mainstay of Kiribati food security. As populations grow and livelihood demands increase, resource demands will increase commensurately. Both consumptive and non-consumptive valuation models are needed to increase revenue streams, incentivize more efficient take and conservation set-asides that allow native fisheries opportunities to recover. Because the enabling environment to regulate coastal zone fisheries does not yet exist, island communities have no hands-on experience with operationalizing comprehensive community-based approaches designed to address open-resource access, the root cause of resource depletion and food insecurity. If outer island communities had this experience, innovative consumptive and non-consumptive fisheries management approaches could decrease resource pressure, improve overall fisheries health and insure broader distribution of food security and social benefits. For instance, one of the main drivers of commercial exploitation is the requirement for island inhabitants to pay for school fees. With additional skills and experience, communities could establish resource use practices that generate revenue to offset school fees and other cash demands while reducing pressure on fisheries that are required to support food security. Unfortunately, communities do not have access to these alternatives. The result of this capacity barrier is a continuation of over-consumption and depletion.

78. Appropriately scaled permitting structures managed by the community could equitably regulate commercial use and generate revenue to support community-wide benefits, including off setting school fees that drive commercial consumption. Sport fishing could be used as an incentive to set aside multiple use coastal zone protected areas for angling tourism and replenishment of fish stocks. If such models existed in Kiribati and the capacity barrier was removed, similar approaches could potentially flourish on several of Kiribati's outer islands. This would contribute substantially to food security by offsetting commercial demand, allowing for the conservation of fishery recovery zones, establishing models for capturing value from consumptive and non-consumptive commercial use of coastal zone resources, and significantly increasing climate change resilience.

79. There have been attempts to increase fisheries production. These attempts have had mixed results. They have taken place without the benefit of a supportive enabling environment addressing open access concerns. For instance, substantial investments have been made in fish attraction devices (FADs). Placement of these FADs within coastal zones has not been accompanied by community-based requirements for upkeep and management. Without clear linkages to specified fishery management zones and identified responsible community members, FADs have either been destroyed or allowed to deteriorate. Other community-based projects have not benefitted from well-reasoned business planning and regulatory oversight. Several islands have rural fishing centres. These centres include small fishing cooperatives, usually five families or fewer, that share resources such as a motorboat and set-nets. The government working with donors has supplied many of these cooperatives with gas-powered freezers. The concept was that remote islanders would gather fish and use the freezers to store fish for either consumption or sale to Tarawa markets. This has largely failed. The fish are free under the open-access regime. However, the cost of operating the freezers is greater than the potential economic returns from the sale of fish. Nearly all islanders agree that traditional drying methods are far superior to freezing. The "freezer" approach did not provide any meaningful contribution to either economic diversification or food security and most of these freezers sit empty. Attempts at fish farming have also been largely inconclusive. The costs are high and returns low. The islanders live in a nation with one of the globe's richest natural fisheries. Fish farming not only poses a risk to native fisheries, improved management of the native fisheries requires fewer inputs and is far more cost-effective than artificial fish rearing.

80. Likewise, communities do not have experience with successful demonstrations showing how non-consumptive uses of island resources can contribute to the protection of coastal areas, improve climate change resilience and increase food security. Tourism is one of the few ecologically appropriate alternatives available to remote islands. Tourism could provide a motivation for the setting aside of

critical coastal zone habitats. However, Kiribati's limited infrastructure, transport costs, lack of fresh water, and fragile ecology will not support "mass" tourism. Island habitats are already constrained with current populations. Freshwater resources are limited. The development of large-scale "beach" tourism often relies upon mass numbers of guests to generate reasonable returns. Most diving tourists are not eager to pay the high price required to reach Kiribati's remote marine areas. The best near-term option is "high end" and "low impact" tourism predicated upon a few guests willing to pay a premium to access the region's isolated and intact marine life. This is similar to policies adopted by Botswana or Bhutan. Because of rural Kiribati's relatively low population and limited cash flow opportunities, revenue from a few tourists could generate substantial community-wide benefits and incentivize improved resource management.

81. Catch and release sport fishing - primarily with fly-fishing equipment - is one of the few economic opportunities for local residents to generate income from coastal zone fisheries that is non-consumptive. Fly anglers will pay a premium for locations that offer exclusive and limited access to well-managed and conserved fisheries. This aligns extremely well with the project objective. For instance, communities could zone a portion of their coastal zones as "catch and release" fishing only. These areas would serve as coastal zone protected areas to help depleted fisheries recover. Periodically opening these protected areas to catch and release fishing would create an opportunity for communities to generate economic benefits from the non-consumptive use of these recovery zones. However, no models exist on Kiribati to demonstrate the potential for these innovative community-based management models to increase fish stocks and commensurate food security benefits.

82. Sport fishing on Kiritimati (Christmas Island) is very important to Kiribati. The government often refers to Kiritimati as a potential model for decreasing pressures on coastal zone fisheries. The island has gained an international reputation and is quite popular. The location is fairly easy to reach from both Fiji and Hawaii. However, the current management regime at Kiritimati does not provide a replicable and sustainable model for community-based management and climate change resilience for other islands. For instance, after years of over-exploitation and a degraded international reputation, the harvest of bonefish was halted at Kiritimati. All bonefishing is "catch and release" and the fishery is recovering. Although halting all bonefish harvest may have worked at Kiritimati where numerous revenue options exist (e.g., servicing tuna fishing boats at the deep sea port), this is not a tenable model for remote islands that rely upon bonefish for their food security. Remote islands require working examples of multiple use coastal zone management systems. Remote islands need to know how to implement mosaic management approaches that integrate zones designated temporally and/or spatially for protection, commercial use, and subsistence use.

83. What Kiritimati does demonstrate is the potential revenue to be gained from sport fishing. Guests pay on average US\$ 2,500 – 3,000 for a week's fishing. The maximum capacity of the islands guest lodges is approximately 1,500 anglers/year (30 guests/week x 48 weeks). This means that fly-fishing generates a maximum gross of US\$ 4,500,000/year exclusive of ancillary benefits such as plane tickets. Outfitters and lodges use this revenue to employ substantial numbers of islanders as service staff. Fly fishing guides work as independent contractors to lodges. Guides at Kiritimati anticipate a daily tip of approximately US\$ 20 - 40. This means a maximum of US\$ 200,000 - 400,000/year generated in tips. The total number of full-time angling guides is not known, but is estimated to be around 20. This means fly fishing guides at Kiritimati can earn as much as US\$ 20,000/per year. However, the only direct benefits for conservation and community improvements come from a US\$ 50/week fishing fee. This is charged to all international anglers upon arrival and is estimated to be no more than US\$ 75,000/year or 2% of the total fishery value.

84. The model shows the potential value of angling tourism to Kiribati. However, the model does not show community-based management principles at work. There is no direct correlation between the use of the fishery and benefits realized by all island residents. The model does little to incentivize long-term conservation of ecosystem integrity and associated climate change resilience. For instance, the conservation fee is low. Remote atolls that have very limited numbers of anglers managed using community-based principles and are able to offer truly world-class fishing opportunities could easily charge US\$ 500/week for a license fee. This represents a substantial potential investment for fisheries conservation and community-wide benefits.

85. There is obvious desire and support for the establishment of sport fishing tourism. This is a high priority for the government and many Island Councils. There are opportunities to establish sport-fishing tourism on more remote islands. Many islands have extensive flats. Nonouti has received preliminary attention from the international angling market. The Island Council hosted two international “expeditions” to explore the island. These expeditions found catch/release sport fishing for triggerfish, trevally, and bonefish at Nonouti potentially attractive to the international market. The Island Council hosted one of the most respected fly-fishing guides from Kiritimati (Christmas Island) for one month. This guide exposed local fisherman to basic guiding skills. With support of national authorities, the Island Council has built a small guest lodge near the island centre. The comfortable lodge has capacity for at least eight anglers. The Island Council is willing to set-aside a part of the island’s coastal zone for conservation and sport fishing. During the PPG phase, the Nonouti Island Council expressed frustration at not being able to move forward with capacitating sport fishing tourism in spite of these investments. The problem is that without a proper enabling environment that protects the quality of the fishing experience and operationalizes community support for tourism, there is limited incentive for international outfitters to invest further in fly-fishing. The risks are too great that the communities will deplete the resource and the quality of service will be sub-standard.

86. The major challenge at Nonouti and other islands is a lack of awareness regarding how to design and establish community-based natural resource management models, whether these tools are predicated upon consumptive or non-consumptive uses of coastal zone resources. Coastal zone communities do not know how operationalize temporal and/or spatial coastal zone fisheries management zones. There is no hands-on experience with community-based business practices where certain community members are responsible for establishing commercial fishing and/or sport-fishing ventures while all community members benefit from this activity. There is no knowledge of how to create an accountable legal entity that represents the entire community. There are no demonstrations of community members cooperatively managing, protecting, and benefitting from resource use. Communities need to know how to properly establish, manage, protect and monitor fishing zones. They need to know how to structure legal documents such as joint venture agreements to make certain transparency exists, whether in the governance of a protected area or the management of revenues flowing from commercial permits. They need to know how to design business plans and negotiate with outside commercial entities, whether this is an international fly fishing outfitter or a commercial fish merchant. Communities require assistance with building capacity to host international anglers so that the communities capture a higher percentage of revenue. They need tangible experience with overseeing and monitoring commercial fisheries use.

87. Once regulatory frameworks and community-based management tools are in place to address open-resource access, islands also need capacity building support from government agencies to operationalize these tools. Without this guidance, outer islanders cannot move forward and the barrier will persist.

### **1.5. Stakeholder Baseline Analysis**

88. There are two primary national level stakeholders for technical issues: the Ministry of Environment Lands and Agriculture and the Ministry of Fisheries and Marine Resources. The newly established Kiribati National Expert Group on Climate Change and Disaster Risk Management (KNEG) whose Secretariat is based in the Office of Te Beretitenti will be an important advisory body, coordination mechanism, and entry point for climate change and disaster risk management initiatives. The Ministry of Internal Affairs (MIA) is responsible for supporting Island Councils. This is done, in part, through the Ministry’s Local Government Division. The MIA will facilitate and coordinate initial contacts, visits, and needed consultations. This will be conducted through Council Clerks on the Islands. As beneficiaries of the project, the Island Councils will be closely consulted for their full consent and continuous support for the project throughout implementation.

<i>Stakeholder Organization</i>	<i>Relevance</i>
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Government	
Ministry of Environment, Lands and Agriculture Development (MELAD)	MELAD is responsible for National Environment, Lands and Agriculture and through the Environment and Conservation Division (ECD) is the political Focal Point of the GEF through the Secretary and the Director of ECD is the Operational Focal Point. This agency is responsible for environment, lands and agricultural policy development, implementation and monitoring/evaluation. Through the Lands, Agriculture and the Environment Conservation Divisions, the Ministry has direct interests in food security, environment conservation for both marine and land management and agriculture resources and to ensure that development activities are pursued sustainably for the environment and for traditional food production systems.
Ministry of Fisheries and Marine Resources Development (MFMRD)	MFMRD is responsible for National Marine and Fisheries policies development, implementation and monitoring and evaluation. Through the Fisheries Act 2010, it is tasked to promote sustainable management of fisheries and the development and use of fisheries resources for the benefit of Kiribati including the recovery of fees that reflect the value of resource and, to protect the fish stocks and marine environment of Kiribati. Based on this Act, the Kiribati National Fisheries Policy 2013-2025 has been developed with aims that portray short to medium and long-term strategic objectives that will enhance responsible fisheries with emphasis on the need to support, improve and sustain the peoples' livelihood, food security and sustainable economic growth.
Office of Te Beretitenti	The Office of Te Beretitenti (OB) plays a key role in the CC & DRM hosting the KJIP Secretariat, KAP Committee Chairmanship, Disaster Fund, and other CC & DRM projects including the CC & DRM Governance project for Information Management and Sharing and the Whole Of Island approach. It plays key role also in ensuring relative Government (Cabinet) decisions are adopted for implementation. The role it plays is more on coordination of CC & DRM policies and monitoring. With the CC shift to OB, the MET Services having a very important role in CC for early warnings of weather, data for long term DRM planning, food security information etc, was also recently shifted to OB.
Ministry of Internal Affairs (MIA)	The MIA is responsible for Local Government and outer island development and manages the Local Government Act that governs the Island Councils functions and operations. MIA provides link between Government and other organizations with the Island Councils through its Local Government Division and its staff including the Island Council Clerk, Island Project Officer and the Treasurer serving the Island Councils.
Ministry of Finance and Economic Development	The Ministry of Finance and Economic Development is responsible for national planning and budgeting. Funds for the project will be disbursed to PMU through the Kiribati Fiduciary Steering Unit established within the Ministry to handle large project funds and following Government Financial Regulations and Procedures.
Minister for Commerce, Industry and Cooperatives	The Ministry is responsible for private sector and industry development, international and domestic trade, copra and cooperatives. Through the Foreign Investment Act, it is responsible for foreign investment. It plays an important role in managing Government Copra Funds providing and replenishing copra funds that Island Council Treasurers manage in the Outer Islands. The Ministry

	through its Cooperative Division oversees Cooperatives that are registered offering auditing and training supports. Through the Price Control Policy, it regulates basic commodities and goods prices such as flour, sugar, rice, fuel especially diesel, kerosene, and benzene.
Ministry for Education	The Ministry for Education has an important national role for education and to promote and relevant curricula work to assist. It is responsible for preschool, primary, secondary, tertiary and also runs a teachers' training institution where teachers are trained to become teachers at both primary and secondary school levels.
Island Councils	Island Councils are responsible for the development, administration and management of their island affairs assisted by Government through the MIA. Their involvement is important to ensure facilitation role for any undertaking or project. The Local Government Act governs functions and operations. Island Councils have individual by-laws that largely guide their business and operation. They oversee, lay out rules and procedures for how domestic affairs, business operators and licensing, development are managed. Island councils have discretionary power through issuing licenses for business development and setting prices and charges such as bus fares (KILGA 2013), fish sales prices in the local market.
Ministry of Communication, Transport and Tourism Development	The Tourism Division of the Ministry of Communication, Transport and Tourism Development monitors tourism-based fishery projects. Responsible for international and local shipping policies and laws as well as airline. Under the Kiribati Development Plan (2012 - 2015), Government aims to improve communication infrastructure on the outer islands to encourage eco-tourism.
Kiribati National Expert Group on Climate Change and Disaster Risk Management (KNEG)	<p>The development of the KJIP led to the establishment of a Kiribati National Expert Group on Climate Change and Disaster Risk Management (KNEG), encompassing experts from core and line ministries, NGOs, the Kiribati Chamber of Commerce and Industries and other non-state actors. Acts as a coordination mechanism for climate change and disaster risk management initiatives.</p> <p>It plays an overall steering function for the design, implementation and monitoring of climate change and disaster risk management initiatives and also form sub-steering groups for sector-specific measures or integrated approaches targeting outer islands and community level (such as the Whole of Island Approach - WOI). It is the entry point for new initiatives.</p>
International Development Organizations	
IFAD	The proposed project will coordinate closely with IFAD's programs related to water resources management and agricultural development on to the outer islands. For instance, IFAD is assisting MELAD's Agriculture Department with the development of Agricultural Centers of Excellence to enhance food security.
SPC	The Secretariat has a long-history of supporting development in Kiribati through its various divisions related to fisheries, land resources, health and education.
AusAID	Australia is a major funding partner for all sectors, including governance.

NZ	New Zealand is a major funding partner for all sectors, including governance.
USAID	USAID currently supports several projects, including vegetation mapping, agriculture related food security and climate change adaptation responses.
EU	The EU has numerous programs, including a program to improve tuna fisheries management and policy. The EU also supports rural electrification, aggregate mining, technical facility coordination, and water and sanitation.
UNESCO	UNESCO is working on issues related to the Phoenix Island Protected Area.
FAO	FAO has programs related to coconut palms, protected areas, and mangrove conservation.
UNDP	Is supporting the design and implementation of this project. UNDP has several on-going programs to enhance good governance, conservation, and development in Kiribati.
World Bank	The World Bank currently provides assistance to Climate Change Adaptation (KAP III), sanitation, and eliminating violence against women and girls.
Government of Taiwan	The Government of Taiwan provides assistance mainly to the agricultural development, island infrastructure and transportation, and education.
Government of Japan	Japan supports the Kiribati Ports Authority jetty expansion, solar production, electrical grid development and school programs.
Civil Society (NGO's, etc.)	
Rare	This international NGO has extensive experience with the implementation of coastal zone fisheries conservation. They do this through the globally recognized "Fish Forever" programs. Rare and Fish Forever will be critical partners to build awareness and improved management regimes.
KANGO	KANGO is the umbrella organization for NGOs in Kiribati but has lately been dysfunctional and member NGOs are operating under the care of the MIA which approves and issues certificate of recognition.
Kiribati Climate Action Network	KIRICAN is an NGO doing community activities to promote awareness on Climate Change and has worked with the '350' Climate Action Network. Youth largely comprise membership of the Kiribati Climate Action Network.
Kiribati National Council of Churches	Kiribati is a deeply religious country and the Churches of different denominations and church groups under them at community level are active in community planning and implementation. They will also be involved in relevant awareness raising and implementation actions.
Church based Women Organizations	Church-based Women Groups are very active organizations in the communities and through which important messages can be effectively transmitted. They provide marketing assistance to their Women Members in Outer Islands.

AMAK	AMAK is the umbrella Women Organization for Kiribati and provides training support to its members, serves as a link between Government and its Women Organization members, coordination role for relevant programs. It exists to promote the interest of women enabling and empowering them.
Live & Learn	Live & Learn is heavily involved with community mainly on agriculture for food security issues carrying out enabling and practical training programs. They have on-going activities on Outer Islands (Abaiang) and in Tarawa. The organization has lately expanded to include health related initiatives such as composting toilets.
Academic and Scientific Organizations	
Bonefish and Tarpon Trust	This academic NGO is globally known as the leader in conservation management and research related to bonefish. They have worked globally to improve understanding of bonefish biology and to use this improved understanding as foundation for better management practices. The Bonefish and Tarpon Trust will be instrumental in the support of community-based monitoring of bonefish and assisting to use this monitor to improve climate change resilience and food-security measures.
USP Center	USP Center is an academic institution operating university extension services for academic students. It also has vocational training programs for non-academic students.
SPC - SOPAC	SOPAC is a regional organization that provides technical/scientific research support to Kiribati; it has had a number of activities supporting fisheries, agriculture, health, and others. The organization is based in Suva Fiji.
Local and Indigenous Communities	
Village Elders and Leaders	At community level for each Island, there is a communal leadership system that strongly recognizes the powerful authority of ‘unimane’ (village male elders) who are the supreme authority for village level matters for the wellbeing of the members of the village. Most villages located on islands are led either by a group of village elders from amongst whom a Chairman is selected. The elders committee is a respected body on the Island whose decision is often respected. Their involvement through consultation throughout implementation is important to reinforce the support that village Councilor reps and the Mayor for the project.
Local Fishermen (villages)	Local fishermen largely fish for their family mostly for food; fishing for income is also common. Fresh from nearby Islands, and dried Fish from far Islands, shell fish, lobster, etc are marketed both on the Island and in Tarawa; lobsters in particular are fished and marketed when ordered for special occasions (family, churches, government functions etc).
Women and Youth	Women are mostly involved in providing domestic support to the family and are also doing the marketing of the men’s catch. They and the Youth sometimes help with shellfish collection in the reef. They area also engaged with agricultural activities for family as well as for income by selling agriculture products to schools and Tarawa.
Private Sector	

Kiribati Chamber of Commerce	The Kiribati Chamber of Commerce exists to provide Secretariat and other business support services for Business Members. It represents the private sector on National (Policy) Importers and Wholesalers; Motels/Hotels; Local distributors. More than 140 businesses are registered members.
Private fishing families	Local fishing families largely fish for their family mostly for food; fishing for income is also common. Fish, shell fish, lobster, etc are marketed in Tarawa.
Major Importers and Wholesalers	Regional companies such as Punjas and also national entrepreneurs supply the country with imported food stuff and other goods. A number of these Wholesalers sell locally produced agricultural and fish produce and play important roles for food security ensuring that basic commodities are available for the people. Due to distance and costs, very few of them operate Outer Island Branches and to serve the outer island needs for food and other goods, they run 'floating business operations' loading and selling cargoes from vessels.
MAT Kereboki	MAT Kereboki purchases from local fishermen 'sea cucumber', runs a business to fish the sea cucumber in outer islands and in Tarawa for export markets. With contacts in the international market, MAT Kereboki holds potential for export of marine and other products.
Kiribati Coconut Products	The business provides Training on Virgin Coconut Oil (VCO) processing, and marketing services for VCO from outer islands in Tarawa. The business has established contact producers of the VCO on a number of the Outer Islands that supply the domestic market in Tarawa. VCO is experiencing a growing interest and market in Tarawa - all that is produced are consumed locally. It has great potential for niche international markets.
Kiribati Fish Limited (KFL)	KFL is a joint venture of Foreign Company and Government of Kiribati that fish and buys fish from local fishermen in Tarawa to process and export tuna loins mainly. The Company currently also serves the domestic market and has potential for an outlet for Outer Island fresh fish and other marine products. Whilst it currently selects the type of fish it buys, there is potential to market other types of fish through the Company.
Te Mautari Co. Ltd (TML)/Central Pacific Producers Limited (CPPL)	TML is a Government Company that markets fish locally and has had its name changed to Central Pacific Producers Limited (CPPL). CPPL was created for tuna and coastal reef fishing operation incorporated in May 2001; it also used to handle seaweed export (buying from local producers and export to external market). CPPL is a shareholder in the KFL joint venture fishing company.

## PART II: STRATEGY

### 2.1. Policy Rationale and Policy Conformity

89. This project will assist Kiribati in the implementation of several key priority interventions identified in its NAPA (2007). The project's Component 1 is well aligned with the LDCF Outcome 2.2 Strengthened adaptive capacity to reduce risks to climate-induced economic losses; and the Output 2.2.1: Adaptive capacity of national and regional centers and networks strengthened to rapidly respond to extreme weather events. The project will strengthen the national early warning system on climate, its use and the strengthening of national capacity, policy and planning to integrate decision making tools to increase preparedness for extreme events, and to deploy funds and human resources as needed. Further capacity building will also be achieved through active learning and sharing of lessons and experiences from Kiribati to other relevant regions of the Pacific and the world.

90. The project's Component 2 will target actions to reduce vulnerability of local communities to impacts of climate change on food production on land and from the sea. This aligns the project with LDCF Objective 1 on reducing vulnerabilities; LDCF Outcome 1.2: Reduced vulnerability to climate change in development sectors (e.g., fisheries). Following the guidance of LDCF Output 1.2.1, the project will support urgent actions to mitigate impacts of climate change and variability on vulnerable natural assets – particularly land and coastal fisheries.

### 2.2. Country Ownership: Country Eligibility and Country Driveness

Convention/Agreement	Signed
Convention on Biological Diversity	1994
Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)	NP
Convention to Combat Desertification	1998
Framework Convention on Climate Change	1992
Kyoto Protocol to the United Nations Framework Convention on Climate Change	2000
Cartagena Protocol on Biosafety to the Convention on Biological Diversity	2000
Convention to Wetlands of International Importance especially as Waterfowl Habitats [Ramsar]	2013
World Heritage Convention on Nature and Culture Sites under UNESCO	2010
United Nations Convention to Combat Desertification	1992

91. As noted, food security in Kiribati is linked directly to the ability of the ecosystem to sustain residents. Residents have three primary pathways to food security: grow, buy or catch. The ability to purchase food is limited, particularly in the rural islands. The country is one of the poorest in world. Remittances, funds generated by offshore tuna fisheries, donor activities, and government jobs support most of the country's economy. The rural economy is based upon lagoon fisheries and coconuts. There are some opportunities for tourism, particularly sport-fishing. However, tourism has been slow to materialize beyond the confines of Christmas Island. The ability to grow substantial quantities of food is limited on all islands and extremely limited on most islands. The country has very little fresh water and low soil fertility. Coconuts are a staple food supplemented by squash, breadfruit and a few other back yard fruits and vegetables. The nation's historically rich coastal zone fisheries are by far the most important source of nutrition. The status of each island's ecosystem integrity determines the status of food security. Unfortunately, this integrity is being degraded by over-fishing, non-point source pollution, and the emerging impacts of climate change. The degradation trend is particularly acute on islands and locations with close economic ties with Tarawa. This analysis tracks precisely with the findings of Kiribati's key policies.

92. Kiribati's National Adaptation Programme of Action (January 2007) highlights Kiribati's vulnerability to climate change. It has noted the vulnerability of settlements, land and coastal areas to impacts of climate change due to the low lying nature of the atolls; and also the vulnerabilities of the fisheries sector; agriculture sector, water resources, physical assets, biodiversity and human health. The report concludes that *"with warmer temperatures, sea level rise, increased storm surges, climate variability and the increase of associated adverse effects such as erosion, past adaptation practices in Kiribati are no longer found to be effective."*

93. This project will directly support the priorities identified by the NAPA: Strengthening Environmental, Climate Change Information and Monitoring; and, Coral Reef Restoration, Monitoring and Stock Enhancement. The project’s first component will develop a Climate Early Warning and Information System and the capacity to use the system nationally. The priorities on coral reef restoration above will be addressed directly through management improvements. The NAPA notes that both marine and terrestrial sources of food security are important. The people of Kiribati depend very significantly upon marine resources for their household level food security while agriculture helps provide important food diversity. The project is also fully aligned with the Kiribati Development Plan: 2008-2011, which has identified the need to protect and replenish natural resources and to monitor and control coastal erosion.

94. The Kiribati Development Plan (KDP) 2012–2015 is the overarching national development plan detailing national priorities (GoK 2012c). The KDP is linked to the Millennium Development Goals, the Pacific Plan and the Mauritius Strategy for Small Island Developing States (BPoA+10). The KDP has six broad key policy areas (KPAs). Climate change is incorporated into KPA 4 on environment, providing the link to the Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management 2014-2023 (KJIP). The key objective of KPA 4 is to facilitate sustainable development by mitigating the effects of climate change through approaches that protect biodiversity and support the reduction of environmental degradation by the year 2015.

95. The project adheres to the guidance of the Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management 2014-2023. As party to the United Nations Framework Convention on Climate Change (UNFCCC; ratified in 1992). The Government sees the KJIP as its National Action Plan on climate change. The KJIP was initiated by the Office of te Beretitenti, driven by the Kiribati National Expert Group (KNEG), and supported directly by a Regional Support Team. The project falls within the parameters of nearly all twelve of the KJIP’s twelve major strategies. The KJIP identifies the “Whole Island Approach” as a national priority; e.g., Develop and implement a program for community-based integrated vulnerability assessment, climate change adaptation and disaster risk management such as the Whole of Island Approach (WOI).

96. The project is closely aligned with several platforms set forth in the National Fisheries Policy (2013 – 2025). The project will particularly support the achievement of goals 2 – 5 as set out in this policy: 2. Protect and secure food security and sustainable livelihoods for I-Kiribati. 3. Ensure long-term conservation of fisheries and marine ecosystems. 4. Strengthen good governance with a particular focus on building the capacity of MFMRD to implement and support fisheries management, development, and monitoring, control and surveillance. 5. Build climate change resilience for fisheries and marine resources in Kiribati.

### 2.3. Design Principles and Strategic Considerations

#### Incremental Improvements

Baseline	Climate Change Vulnerabilities / Opportunities	Adaptation Measure	Justification
Uncontrolled fishing and collection of marine species such as molluscs, sea cucumber, and trochus around reefs and in lagoons for both commerce and subsistence	Decline in demersal fish stocks, species diversity and ecosystem integrity challenges compounded by changes in sea surface temperature, ocean currents,	Controlled production of coastal-zone marine resources across islands of Kiribati through new and highly effective community-based ecosystem approaches to fisheries management supported by national	Awareness of changes in the relative abundance of species as a result of climate change impacts will enable optimization of fishing strategies and catches.  Primary fisheries management will reduce pressure on overfished species, help replenish depleted stocks, counteract

	and degradation of coastal nursery	level programming and capacity building.	projected decreases due to climate change, and maintain ecosystem integrity.
Unregulated land use management and increased demand for expanding island based agriculture products compounds current resilience challenges. This includes lagoon pollution/runoff, soil degradation, and freshwater depletion/degradation.	Increases in air temperature (estimates for 2050 between 1 and 2 degrees) and rainfall (overall estimated increase in annual rainfall of 7% by 2050) for Kiribati are likely to be favorable. However, frequency, fluctuations, and strength of rain and weather events will likely increase run-off, pollution to fresh water and lagoons and further degrade island and coastal zone vulnerabilities.	Improved awareness, land use planning and other highly effective community-based ecosystem approaches to terrestrial management linked directly to issues of food security supported by national level programming and capacity building.	Awareness of “linkages” between terrestrial and marine ecosystems will support long-term ecosystem health, vulnerability reduction, and improved food security.  Specific management approaches will assist communities to take charge and get in front of climate change impacts prior to much more expensive and daunting “post-event” approach.

### Avoiding Duplication

97. Kiribati is a small country with a constrained government budget and substantial per-capita donor investment. The efforts of many donors and government partners are focused upon addressing very similar challenges and approaches. Most are concerned with the intersection of food security, climate change adaptation, and ecosystem resilience. These concerns match government priorities. This includes project funding through GEF, LDCF and similar mechanisms as well as a broader base of donor investments. The expense and logistical challenges associated with working in Kiribati justify the existence of many such activities. However, alignment is challenging. The project will rely upon a number of existing and innovated approaches and institutions to make certain that all project investment is highly effective. The country’s small size is in some ways an advantage to making certain duplication is avoided and synergies generated.

98. The project will work closely with the established National Adaptation Steering Committee coordinates the efforts of ongoing projects related to adaptation. The committee will be used as a mechanism to make certain this project is well aligned and creates synergy with both on-going and proposed government and donor investments.

99. The Project’s own Steering Committee is designed to incorporate key agencies and donors involved and likely to be involved in similar adaptation initiatives. This will make certain that project activities avoid duplication. The steering committee terms of reference to be designed during project inception will clearly task the committee with seeking out ways to use project results as a springboard for replication and up-scaling. This will include making certain that successful models implemented by the project are integrated in future government and donor investments. The committee will also be required to make certain project implementation approaches are complimenting, rather than conflicting

with, on-going and planning investments by government, donors, and others involved in similar efforts to increase climate change resilience.

100. The project is designed to make certain actions are complimentary with relevant endeavours. In each instance, this project is designed to complement these efforts by directing financing and technical assistance primarily towards community-based coastal zone fisheries management and working with the other proposed and on-going projects on complimentary agriculture and national enabling environment and capacity building efforts. Related activities and investments are summarized in the Baseline Table found in annexes.

101. During the PPG phase, consultations were under-taken with stakeholders responsible for germane initiatives. During implementation, the proposed project will continue to work with these programs to strategically align activities, monitor and report results, and make certain that best-practices and lesson-learned are synergized, replicated, and up-scaled. Examples of aligned efforts including the following:

- “Outer Island Food & Water Project.” IFAD. US\$ 3.9 million. 2014 - 2018. The project is designed improve food security through island-based agriculture. The project will enhance community-wide participatory planning, increased use of nutritious local foods in household diets, improved household water safety and security; and, increased production of agricultural staples such as vegetables and poultry.
- “Coping with Climate Change in the Pacific Island Region”. GIZ/SPC. € 19.2 million shared between Kiribati and 12 other Pacific Island Countries. 2009 - 2015. Implementing climate change adaptation and mitigation measures with an integrated multi-sector ‘whole of island’ approach. This project works on Abaiang atoll near Tarawa. The program will generate a vulnerability assessment and action planning approach.
- “Vegetation & Land Cover Mapping.” USAID/SPC. US\$ 492,000. 2012 - 2015. The project sets out to improve understanding of present and future climate related constraints on sustainable food production in various Pacific Island agriculture ecosystems. The project will support baseline information on vegetation and land cover mapping; community awareness of the impacts of climate variability and measures to increase agricultural resilience; and, strengthen food security-climate change information systems.
- “Increasing salinity tolerance knowledge in Kiribati and supporting utilization and enhancement of pandanus diversity.” AUSAID/SPC. A\$ 58,500. The project will increase salinity tolerance knowledge on food crops in Kiribati and support utilization and enhancement of pandanus varieties.
- “Sustainable Development of Senile Coconut Palm in Kiribati.” FAO. US\$ 300,000. 2014 - 2015. The main objective is to remove senile coconut palms and utilize them for coconut timber so that there is more land space available for replanting purpose and that there is opportunity for coconut timber production and sale locally for household income generation.
- “Community Based Fisheries Management (CBFM)” AusAid. US\$ 1.2 million. 2013 - 2017. The objective of this multi-nation project is to develop and nurture the structures, processes and the capacity to implement and sustain national programs of CBFM.
- “Fisheries Sector Policy Development Project is a Fisheries partnership agreement” EU. US\$ 450,000. 2013 - 2019. Assisting MFMRD to promote responsible fishing in Kiribati deep-waters (tuna). Work will support achievement of FAO’s code of conduct for responsible fisheries.

GEF projects:

- “Increasing Resilience to Climate Variability and Hazards.” (KAP III) World Bank/GEF - KAP III US\$ 9.5 million. 2011 - 2016. The projects aims to strengthen the capacity of communities to manage water resources and infrastructure; increase the availability and quality of water at the community level; and, protect targeted coastal areas from storm waves and flooding.
- “PAS: Phoenix Islands Protected Area (PIPA).” UNEP. US\$ 890,000. 2011 - 2015. The project will advance implementation of the PIPA Management Plan.
- “R2R Resilient Islands, Resilient Communities.” Multi-Focal Area. FAO. US\$ 4.7 million. 2015 - 2020. The project will strengthen protected areas and mangrove conservation. The project will review and improve management planning.
- “Support to Alignment of Kiribati’s National Action Programme to the UNCCD Ten-Year Strategy and Reporting Process.” Land Degradation. UNEP. US\$ 136,000. 2014 - 2016. This land degradation project will build capacity of Kiribati to align the NAP with the 10-year UNCCD Strategy and prepare the national report for UNCCD.

### Gender Considerations

102. This project has several innovative approaches to make certain issues of gender are well-integrated and reflected project implementation. The project will be implemented with the support of several NGOs, CBOs, and church groups that are focused upon gender. The project will pursue a gender-sensitive approach whereby women’s participation in training workshops, demonstration activities and management committees will be strongly promoted. Gender and other social inclusion issues will be considered in all stages of project development and implementation.

103. The community-based management model by-laws and other implementation guidelines will contain specific sections and references to issues of gender. The extension programs implemented through this project will have components designed especially for women and women cohorts. The project’s monitoring efforts will be disaggregated by gender to be certain women, women headed households, and women led economic and subsistence issues are well understood and part of the project’s overall monitoring framework. Gender balance will be sought and achieved for all project governance. During project inception, the final management and decision-making framework will make certain that issues of gender are well incorporated.

### UNDP’s Comparative Advantage

104. The government selected the UNDP to be the implementing agency for this project for numerous reasons. UNDP’s work in the Kiribati is supported primarily through its Multi-Country Office based in Fiji. UNDP has been active in Kiribati and has supported several on-the ground efforts to improve local resource use and livelihoods.

105. UNDP has supported at least 10 island communities in better agroforestry and livestock management through the UNDP-GEF SLM Project and promotion of community/ NGO actions through the operation of UNDP-GEF Small Grants Fund. UNDP has supported several national policy works – such as strengthening the parliament, and supporting to the development of NAPA and NCSA with GEF funding. The multi-country office assists several other adaptation projects development and implementation in the Pacific – such as in Tuvalu, Fiji and Tonga through different sources. The project will benefit from the experience from these projects. UNDP implemented several adaptation projects globally on small island nations relevant to the project in Kiribati.

106. UNDP’s comparative advantage in implementing this project is underpinned by its Multi-Country Programme Document for the Pacific Sub-region for the current cycle (2008-2012) as well as the next cycle (2013-2017), in which enhanced decentralization of governance and participatory decision making targeting vulnerable groups, are given a particular emphasis. UNDP is playing a leading role in this area based on its long standing and established track record in Kiribati and the Pacific region in promoting local public administration reform and public service delivery. For strengthening

the resilience of island communities to future climate risks, a necessary condition is to establish an environment conducive to greater autonomy within each island supported by technically capable staff and financial capacity.

107. This project follows the UN Common Country Programme Action Plan (CPAP) and CCA. The project follows the UNDAF and the UNDP Country Programme and UNDAF for the Pacific Sub-region. All call for an increase in sector capacity for sustainable resources management. This includes stressing participation of primary resource users. UNDAF Outcome 2 states “National and regional governance systems exercise the principles of inclusive good governance, respecting and upholding human rights; and resilient Pacific island communities participate in decision-making at all levels”. Outcome 4 states: “The mainstreaming of environmental sustainability and sustainable energy into regional and national policies, planning frameworks and programs; and Pacific communities sustainably using their environment, natural resources and cultural heritage.”

108. The UNDP Multi-Country Programme Document operates within the broader framework of an UNDAF, and the new assistance framework cycle will begin from 2013. UNDAF and MCPD, by design, are set out to address the Government’s development priorities and thus high degree of conformity can be found between the proposed LDCF project and UNDP’s overall guiding framework. This project is aligned with MCPD Outcome 4.2 “Pacific communities effectively manage and sustainably use their environment and natural resources” and its subordinate Output 4.2.1 “Sustainable livelihoods of vulnerable groups, including women and youth, strengthened through institutional support and leveraging indigenous governance systems, to contribute to sustainable environmental management.”

109. The UNDP Fiji MCO is well positioned to support the Government of Kiribati with necessary oversight and project assurance. UNDP deploys a Kiribati-based programme staff to enhance its in-country project implementation and policy support. The project will primarily engage the environment and climate change practice area and governance practice area, as well as the Deputy Resident Representative and Assistant Resident Representative for programming. The Fiji MCO completed a recruitment of a long-term climate change policy advisor. A regional climate change adaptation technical and legal advisers based in Bangkok will provide implementation oversight and support.

## **2.4. Project Objective, Outcomes and Outputs/Activities**

110. The project objective is to build the adaptive capacity of vulnerable Kiribati communities to ensure food security under conditions of climate change. The project will assist Kiribati to implement urgent resilience building actions.

111. Food security is an emerging issue for Kiribati’s rural poor. The issue of food security in rural Kiribati cannot be separated from the issue of natural resource management, particularly the conservation of critical ecosystem services.

112. The project will address the twin national and island-based barriers currently keeping I-Kiribati from achieving the project objective. Under Outcome 1, the project will build the institutional capacity necessary to reduce climate change vulnerabilities. Under Outcome 2, the project will demonstrate community or island-based adaptation measures designed to increase food security.

113. The project’s immediate result will be the ability of pilot site communities to demonstrate improved nutritional security by stabilizing ecological integrity and building climate change resilience. The project’s long-term result will be setting in place the conditions necessary to upscale and replicate successes nationally. Ultimately, Kiribati’s rural communities and government agencies charged with stewarding improved management and will be enabled to understand and strategically implement ecosystem-based adaptation actions far into the future.

114. The total cost of the project, including co-funding and GEF funds, amounts to US\$ 12,836,210. Of this total, co-funding constitutes 65% or US\$ 8,390,000. The GEF financing comprises the remaining 35% of the total, or US\$ 4,446,210.

**Outcome 1: Institutional capacity developed to reduce vulnerability to climate change-induced food shortages**

LDCF project grant request: \$ 1,000,000

*Baseline (without LDCF intervention)*

115. The relevant Government of Kiribati annual baseline is approximately US\$ 1,800,000. MELAD, MFMRD, MIA, and other ministries provide basic regulatory oversight and work to enhance capacity improvements. The Government of Kiribati spends approximately US\$ 900,000 each year through the Ministry of Environment, Lands and Agriculture Development (MELAD). This includes efforts to enhance agriculture research and extension to bolster food production and availability in the country. Examples of major activities are screening salinity tolerant giant swamp taro cultivars and promoting the production of nutrient rich fruits and vegetables. The Ministry of Fisheries and Marine Resources Development spends approximately US\$ 900,000/year for coral reef monitoring, fisheries management and marine resources management. This program offers training on value adding techniques such as smoked fish, tuna jerky and other forms to increase fishermen income. The MFMRD spends approximately US\$ 28,000/year to support milkfish farming with the Taiwan Technical Mission. Donor support to improve general government capacity is estimated to be US\$ 100 million. This includes investments to address climate change adaptation.

116. Current investment and activity is not adequate to address the level of challenges faced by Kiribati. The current enabling environment is not sufficient to support informed-decision making regarding food security and climate change adaptation. Substantial work is required to establish a platform to make certain the tools and skills exist to maintain the ecosystem integrity required to bolster climate change adaptation capacity.

117. The country would very much like to develop a national program to support climate change adaptation that is both community and ecosystem-based. There is a strong desire, but few resources to achieve this benchmark. Kiribati does not have the full financial and technical capacity required to design, draft and launch the implementation of a comprehensive management regime for the conservation and sustainable use of island and coastal zone resources. Under the baseline, the nation does not have the capacity to strategically monitor, plan, and regulate the use of coastal zone resources. The nation is challenged to complete a shift from “open access” resource management to more sustainable community-based management. The tenacious capacity gap exposes ecosystem resilience and corresponding food security to the emerging impacts of climate change.

*Adaptation alternative:*

118. This outcome will address the first identified capacity barrier: “Limited institutional and individual capacity to plan and implement actions to reduce the impacts of climate change-induced impacts on food and nutrition security.” The project will support national institutions to set in place capacities to strategically plan, monitor and regulate natural resource use to create the safeguards necessary to insure food security. This improved business model will help insure that ecosystem integrity is maintained at levels required to promote climate change resilience.

119. Reaching this alternative requires setting in place national programming that helps guide island level management improvements. Logistics, costs, and cultural norms dictate that approaches must be island-based. The project will assist the national government to serve as a central point for administering, guiding and monitoring resource use. The national government will be well positioned to provide broad-oversight, strategic planning, and guidance. The national government will serve as a repository for information generated on the island level. Information will then be used to better understand challenges, inform decision-making, collate lessons learned, and encourage replication of best practices.

120. The project will assist the government to substantially enhance the capacities of extension officers. These extension officers will increase their ability to support island-level resource management improvements and become a communication conduit between island and national level decision-makers.

121. The project will support the establishment of national level monitoring to assess the nexus of food security, ecosystem-integrity and climate change adaptation. The project will enhance national institutions to be better able to forecast climate change trends and impacts. A climate change adaptation early warning system linked to a more complete understanding of of meteorological events, natural resource use, and ecosystem status will be set in place.

122. The project will create a national enabling environment required to help shift open resource access to more community-managed approaches. The project will assist national agencies to generate improved guidelines, models, and regulations for island-based approaches to address climate change vulnerability, food security, and the long-term maintenance of ecological integrity. The result will be a national level program to support the generation and implementation of safeguards required to sustainably manage the resources upon which I-Kiribati depend for food security.

*Output 1.1: National program for informed decision-making*

123. The project will set in place a national program to generate and analyze data required to inform decision-making. The project will achieve this by establishing and trialling the implementation of a national adaptation monitoring and assessment tool (AMAT). Such a tool is critical to the accurate assessment of climate change vulnerabilities and the design of effective responses. Coral monitoring and island profiling of marine resource and social economic surveys will form part of AMAT to understand how these patterns change over time. The AMAT will serve as a tool to collate and disseminate climate risk information nationally.

124. The AMAT will create a much more rigorous system for national agencies to monitor, track and assess basic information related to climate change, food security and the maintenance of ecosystem-integrity. The tool will prioritize information required to efficiently and effectively monitor climate change vulnerability. The AMAT will inform national policies and strategies related to food security and climate change.

125. The AMAT will focus upon generating information related to three sectors: conservation of coastal zone fisheries, sustainable land management, and human health/nutrition. The AMAT will take an ecosystem approach, providing a streamlined mechanism for monitoring indicators related to agriculture, fisheries, nutrition, livelihoods, fresh water, natural resource use, and biodiversity conservation. The tool will be designed specifically for the unique Kiribati context, but based upon best international principles and practices. The AMAT will be scaled to match existing capacities while being designed to accommodate increasingly sophisticated monitoring capabilities.

126. The AMAT will be informed through several mechanisms. The tool will provide a means to gather and collate existing and historical information. The tool will be informed by improved resource monitoring by government agencies and institutions. The results of past and on-going donor and government projects will be captured. The tool will be informed by regular and rigorous reporting conducted by Island Councils and supported by island extension officers. This information will be collated into a brief summary report to be disseminated annually to each of the Island Councils. The annual vulnerability assessment report will assist Island Councils to better understand issues of vulnerability faced by other atolls and to learn from the effectiveness of approaches taken by these atolls.

127. The AMAT will inform and be informed by an enhanced MET early warning system. This will make use of existing meteorological stations. The project will build the capacity of the National Meteorological Service to conduct extended meteorological and hydrological observations. As necessary, the project will support the enhancement of these capacities by providing up-to-date information gathering and distribution systems on each of the pilot sites. This will include the establishment of equipment required and the use of state radio and TV for dissemination of climate risk information, seasonal forecasts related to food production, and warning of extreme events.

128. Having a national monitoring system supported by compatible data sets will streamline the process of identifying vulnerabilities, particularly related to issues of food security. The tool will

generate easily comparable data sets and indicators for monitoring of climate change advances and the success/failure of various adaptation models. The tool will be used to help inform decision-making by formalizing the process of generating and reporting on climate change vulnerability and responses.

129. During the project's first year, a strategy for information generation and management will be completed. The strategy will:

- Describe the precise AMAT elements and functionality, including institutional responsibilities;
- Identify and prioritize monitoring and information requirements, including indicators related to maintaining and enhancing ecosystem integrity;
- Assess systems required to extend meteorological and hydrological observations by the National Meteorological Service;
- Assess existing monitoring activities and capacities on national and island levels;
- Provide capacity building recommendations, including training and equipment;
- Describe best approaches to generating required data and information, including MET systems, improved fisheries monitoring, and information reporting mechanisms by Island Councils, community members, extension officers and other local stakeholders;
- Describe how the AMAT will be applied to inform national policy and planning;
- Describe and prioritize monitoring and capacity building programs to be developed and trailed during project implementation.

130. During project year two, project technical staff working with relevant government agencies will develop and commence trial implementation of the AMAT. This will include training of officials and community groups to use climate risk information to undertake vulnerability assessments, integrated land/ marine resource-use planning taking into account climate risks and prioritization of adaptation actions for fisheries and food security. All initial monitoring efforts will be supported by best-available national and international technical expertise. National capacities to design and implement the AMAT will be built. This will include commensurate capacity building and training for national stakeholders and the supply of necessary hard and software for AMAT actualization.

131. The national level monitoring program will be initiated. This includes a comprehensive program for coastal fisheries research, focused upon bonefish and other species most utilized for subsistence at each pilot site. The program will also monitor ground water quality and quantity, soil loss/fertility, and other issues related to land based integrity. The monitoring program will provide baseline information required by national and local stakeholders to make informed decisions regarding resource use and management. Available data will be gathered and fed into the electronic AMAT database. Tracking of indicators based upon historical records and data will commence. The project will work with MET to design and generate enhanced meteorological data generation capacities and reporting.

132. Preliminary information to be fed into the AMAT will be generated at each of the project's pilot sites. The ability of extension officers and Island Councils will be enhanced to actively monitor and report on the status of key resources. This will be closely aligned with Component 2 capacity building efforts. For instance, participatory vulnerability assessments integrating anticipated climate risks will be undertaken at community level for each pilot site. A reporting template will be designed so that Island Councils at each pilot site can easily submit necessary information to responsible national level agencies. Project pilot site Island Councils will complete and submit the model template annually throughout the project period.

133. A key task during the mid-term evaluation will be to assess the AMAT and recommend necessary improvements. During project year three, it is anticipated that project advances and increased monitoring and information management capacities will come on line. The AMAT reporting mechanisms will be expanded to include coverage and reporting from all Island Councils. Initial AMAT reports should be completed by each of Kiribati's Island Councils with the support of extension officers. The AMAT and related information gathering systems will improve in terms of both sophistication and accuracy of data.

134. By project close, the AMAT will be fully operational and supported by national funds and staff. The AMAT will be generating a rigorous and integrated approach to monitoring climate change vulnerabilities based upon an objective assessment of island-based ecosystem integrity. The AMAT will track and report on indicators most relevant to maintaining food security. The systems and information required to forecast environmental changes and make decisions early on in order to adjust to necessary climate change will be in place. The tool will serve as an early warning system will integrating relevant information from and for a cross-sector of institutions, including those responsible for food security, fisheries, and agriculture. The professional system will provide government regulators, donors, island councils and other stakeholders a basis for informed investment, planning, policy formulation and decision-making.

#### Output 1.2: National Guidelines for Ecosystem-based Adaptation Management

135. The project will support the generation of national guidelines for the creation of improved coastal zone natural resource management and planning systems for each atoll. These national level guidelines will generate a platform for the adoption of ecosystem-based adaptation management models. The models will be linked to and inform the AMAT developed under this Outcome. The national guidelines will provide Island Councils with a simple tool required to generate natural resource management plans for the areas within their jurisdictional boundaries. This will include the creation of model by-laws for trial adoption and implementation at each project site. The project will take an incremental approach to assisting the government to build the national level guidelines. Initial approaches launched at each pilot site will create a basis for national replication.

136. A national level capacity building and assessment initiative will be implemented during the project's first year of operation. This initiative will help create a baseline of understanding regarding possible approaches founded upon best international principles and practices. The capacity building phase will commence with a series of formal national and island level training and assessment workshops. This training program will be used to build a broad base of awareness amongst national level decision-makers and other stakeholders responsible for supporting island-based resource management improvements. The approach will provide a formal framework to strategically discuss current natural resource management challenges, emerging climate change and food security vulnerabilities and expose stakeholders to best international principles and practices.

137. A scoping workshop will be conducted during the first six months of project implementation. This three-day workshop will be designed as a platform to discuss and assess current activity by both donors and government. Representatives of all relevant agencies and donors will be invited to attend. This initial workshop will help make certain that project emplaced guidelines are well aligned with on-going activity. This workshop will expose national decision-makers to best international principles, practices and concerns regarding topics such as community-based natural resource management, vulnerability assessments, and critical elements to be addressed in a comprehensive ecosystem-based adaptation management framework.

138. The national efforts will be closely aligned with Component 2 activities that are primarily island based. For instance, project staff and key government agents will conduct on-island awareness building activities at each pilot site similar to the national level efforts using two-day mini-training programs. The on-island programs will be designed to expose island stakeholders such as Island Councils, extension officers, community leaders and resource users to potential challenges and approaches to achieving ecosystem-based adaptation management regimes.

139. Materials from both the national and island-level training programs will be collated into a short video and handbook/report. These resources will build awareness and capture training program highlights. Both the video and handbook will be distributed nationally to all Island Councils and extension officers to help insure that lessons-learned are disseminated broadly.

140. During the scoping workshop, a working group consisting of primary national stakeholders will be identified. This working group will be tasked with fully assessing current capacities and constraints. The working group will generate guidelines for ecosystem-based adaptation management to be adopted by individual atolls. The process of generating the guidelines will be fully supported by international and

national project technical staff. The guidelines will be informed by insights generated during year-one awareness building process.

141. An objective of the national guidelines will be to improve the capacity of Island Councils to actively manage island resources to reduce climate change vulnerabilities. The national level guidance will assist island level decision-makers to better understand and apply national laws, policies, and natural resource management targets. The national guidelines will be designed to help coordinate island level activity and national level monitoring. By coordinating the generation of comparable data sets at each island, the guidelines will support the advancement of national capacities for informed decision-making and relevant policy improvements. The project will provide the technical expertise required to generate guidelines that reflect best international community-based natural resource management principles and practices.

142. The national level guidelines will offer Island Councils easily adopted templates for the implementation of community and ecosystem-based planning approaches to reduce climate change vulnerability. The guidelines will be designed so that as atoll level management systems grow in sophistication and new climate challenges emerge, island stakeholders can more effectively identify opportunities to adopt and improve management approaches to match needs. A critical element of the guidelines will be the integration of incentives for Island Councils to adopt and implement the proposed guidelines. Recommendations for incentives may include predicated the receipt of annual budget allocations and/or a portion of these allocations upon Island Councils full-filling adoption and reporting requirements.

143. The national guidelines for ecosystem-based adaptation management will contain four core sections:

- Section One will enhance the climate change vulnerability awareness of island stakeholders. The guidelines will help these stakeholders better understand climate change vulnerability challenges and their potential role in addressing these challenges. The guidelines will provide basic information regarding climate change vulnerability, food security, and the maintenance of ecosystem integrity. The guidelines will present simple introductory materials regarding best international principles and practices related to community-based natural resource management. This will include capturing lessons learned from recent and on-going government and donor activities. The guidelines will include recommendations for island-based adaptation management actions designed to sustain resources upon which food security and ecosystem integrity is most dependent, including copra, small-scale agriculture, fresh water, and coastal zone fisheries.
- Section Two will incorporate the AMAT. Linking the guidelines to monitoring and information management advances will improve both the efficiency and effectiveness of national level decision-making. This will include incorporation of the AMAT island-level reporting mechanism and instructions for completing this mechanism.
- Section three will describe pathways for the creation of coastal and land use planning. The guidelines will describe the objectives and principles of island-based resource management planning. The guidelines will discuss the legal parameters of such planning. The guidelines will describe how Island Councils will integrate land and marine resource-use planning taking into account climate risk. The guidelines will include simple instructions for how Island Councils can best assess climate change vulnerabilities and subsequently design planning, monitoring, and oversight approaches to strategically address these challenges. The guidelines will include templates for both the design of appropriately scaled planning frameworks. The guidelines will describe the process of stakeholder inclusion, discussion, mapping and other basic planning elements.
- Section four of the guidelines will present model by-laws for fisheries conservation to be adopted by individual Island Councils. This will be closely linked to national coastal fisheries

regulatory improvements to be completed under project Component One. The model by-laws will shift open resource access to improved community-based resource management. Extending well-beyond current efforts to limit “splash” fishing, the by-laws will present options for slot limits, seasons and alternative fishing days, motorized and non-motorized areas, conservation areas and set-asides, fishing technique restrictions, sport fishing, catch reports (creel surveys), etc. The by-laws will address issues related to tourism, subsistence, commercial use, etc. The by-laws will present options for community-managed zonation and the establishment and expansion of coastal zone protected areas and other refugia. The model by-laws will describe monitoring and management of fisheries resource use, benefit generation and distribution. The by-laws will describe how revenue raised from sport fishing, commercial licenses, and other resource uses may be funneled through the island council and used to support community-wide benefits, including conservation of ecosystem integrity. Ideally, these funds will be used to defray the costs of vulnerability drivers such as school fees. The by-laws will also address issues such as the regulation of export of goods, making certain that any off-island export is monitored and reported as part of the vulnerability assessment information gathering functions. The by-laws will address issues related to enforcement and funding.

144. The draft national guidelines for ecosystem-based adaptation management will be fully vetted by relevant government authorities. This will include any necessary review and action by parliament, the office of the president and/or government ministries. Island Councils and other stakeholders at each of the project pilot sites will also review and provide comments on the guidelines. Both vetting processes will be fully supported by project technical staff and the Working Group tasked with guideline development. These persons will take responsibility for designing and implementing required stakeholder discussion and presentations to make certain the guidelines benefit from a broad-base of support.

145. The final draft guidelines will be ready for trial implementation at each of the pilot sites by the close of project year two. This will allow the mid-term evaluation to assess progress to date. The guidelines will be re-evaluated and amended prior to the close of both project years three and four. By project close, the fully trialed guidelines will include a new Part 5 summarizing lessons learned to date. These fully trialed guidelines will then be distributed nationally for replication.

### Output 1.3 National Coastal Zone Fisheries Monitoring and Conservation Awareness Program

146. The project will support the creation of a national fisheries monitoring and conservation awareness program. This program will build national and local awareness regarding the linkage between ecosystem integrity, the conservation of coastal zone fisheries and food security.

147. The research program will build the capacity of the Ministry of Fisheries and Marine Resources to support coastal zone fisheries monitoring. The fisheries research program will build upon the current baseline while focusing upon the intersection of subsistence and commercial use, climate change vulnerabilities, and the long-term health of native coastal zone diversity. This will include the development of coastal fisheries spatial database and GIS to better predict impacts of climate on species population and distribution. The research program will assist national agencies to help build the capacity of island communities to generate and report rigorous coastal zone fisheries data. This will be linked to island-based efforts implemented under Component 2. The program will build the capacities required to evaluate and monitor fisheries use (take and trade), assessing ecosystem health, and reporting. A vital part of this program will be the design and implementation of innovative fisheries research activities linked to the AMAT and other component outputs designed to enhance decision-making capacity at both national and atoll levels. By project close, a national coastal zone fisheries monitoring program should be fully operational and informing management decision-making on national and island levels.

148. An international academic and/or research institution (e.g., Bonefish and Tarpon Trust) will support implementation of the project’s research activities. The specific organization will be identified during the project’s first year. This organization will be tasked with generating a fine-scale assessment of current research capacities, working with national fisheries agencies to generate and model improved

research practices, and building capacities required to establish and operationalize a national coastal zone fisheries monitoring network.

149. The complimentary fisheries conservation awareness program will utilize the highly successful approaches established in the Pacific region by the NGO Rare Conservation. The program will raise awareness and assist with national and island level prioritization of adaptation actions for fisheries and food security. This activity will closely align with and build support for the various policy and management improvements to be realized during project implementation.

150. Activities under this Component will commence during project year one. Monitoring and awareness will be aligned with and support extension officer capacity building and training under Output 1.5, making certain extension officers have the ability to implement basic monitoring and awareness programming on the island level. The national program will be trialed through Component 2 at each of the project's pilot sites. The program's effectiveness will be evaluated during the project's mid-term review. The mid-term will make an evaluation and recommendation determining whether the awareness program is on-track to deliver intended results and if the awareness program requires additional funding.

#### Output 1.4 National Coastal Zone Fisheries Conservation Regulation

151. The project will improve national legislation related to fisheries management. The project will support the adoption of a regulation designed to fill the current gaps within the National Fisheries Act related to coastal zone fisheries. The improved legislation will be based upon information generated under this component and linked to outputs such as the AMAT, guidelines and by-laws, and national fisheries conservation awareness program.

152. The new coastal zone fisheries management regulations will build on the current Fisheries Act. The regulations will shift open access to improved community-managed regimes. The regulations will consider innovations based upon zoning of coastal zones, including commercial licensing, regulation of take and trade, regulation of catch methods, etc. The proposed changes will be predicated upon principles designed to support ecosystem-integrity, community based management, and ecosystem-based adaptation approaches.

153. The adopted national regulations will set-in-place the enabling environment required for Island Councils to draft and adopt progressive island fisheries management by-laws. This will include protocols for adoption of Island Council by-laws that comport with the national regulations. The national regulations will consider all aspects of coastal zone fisheries, including:

- Permitting and quota systems for subsistence, commercial and non-consumptive resource use;
- Oversight and regulation of off-island exports;
- Allowable take methods such as regulation of nets, long-lines, motor-boats, and artificial attraction devices;
- Temporal management such as seasonal closures and rest-rotation (e.g., commercial fishing Monday - Wednesday, subsistence only Thursday - Friday, etc.);
- Spatial management such as lagoon use-zoning and demarcation of protected areas;
- Individual species management such as daily and possession limits, species restrictions, slot (size) limits, etc.;
- Requirements for resource monitoring and reporting, including species status, use levels, etc.;
- Enforcement mandates, responsibilities and liabilities;
- Provisions for implementation financing; and,
- Processes and protocols for adoption of compatible by-laws by Island Councils, including community-based, decision-making, monitoring, reporting and planning regimes.

154. A comprehensive assessment of existing national regulatory tools and challenges, summary of best international principles and practices, and proposed regulatory changes will be completed prior to the close of project year one. A working group representing key national stakeholders will complete this assessment and other output activities with the support of both international and national technical

staff. The team will draft proposed regulatory changes. During project year two, the working group will champion the adoption of the proposed regulatory improvements. The working group will be responsible for vetting these proposed changes with all relevant stakeholders. The regulation will be fully adopted prior to the close of project year two. This will insure that the regulatory improvements are trialed under Component 2 at each of the project's proposed pilot sites.

155. Adoption and implementation of improved regulations for coastal zone fisheries is highly critical to the achievement of the project objective. During the mid-term evaluation, an assessment will be made regarding progress to date. If the assessment concludes that adequate progress has not been made, the mid-term evaluation may recommend options – including project suspension new regulations should be made to make certain further resources are wisely allocated. By project close, these could be fully functional. The regulations should provide the foundation for a vastly improved coastal zone fisheries management regime designed to limit climate change vulnerabilities, secure ecosystem integrity, and enhance overall food security objectives.

#### Output 1.5 Extension Officer Training

156. The project will support the development of a comprehensive training program for extension officers. Extension officers are generally the only full-time representatives of national level natural resource management agencies located on each atoll. Extension officers are critical to provide communication between national and local institutions, build local capacity, and monitor resource use. The training program will increase the level of capacity so that these extension officers are better equipped to assist island stakeholders to more strategically plan, manage and monitor resource use as it relates to food security and climate change adaptation. This will be done to insure that these officers are capable of supporting project outputs implemented during project implementation and after close.

157. During project year one, technical staff working with relevant government agencies will assess the current capacity and training regime (both formal and in-service) provided to extension officers. The assessment will detail recommendations for necessary capacity improvements related to the achievement of the overall project objective and individual outputs. The assessment will include a description of how best to enhance existing extension officer apprentice training.

158. The training regime to be implemented by the project will be accompanied by a number of steps designed to make certain institutional memory is established. The training program will develop training materials for extension officers that will be disseminated throughout Kiribati. These materials will benefit from best international principles and practices as well as lessons learned during project implementation. During project year two and beyond, the project will act to support the implementation of prioritized recommendations.

159. In-service training will be a vital part of the extension officer training regime. The extension officers will work very closely with the project's international and national staff to support project implementation. This will include implementation of all primary outputs and activities from both Component 1 and 2. The extension officers will be instrumental in monitoring, research, capacity building and other "on island" activities. They will support and learn from efforts related to research, coastal zone planning, design and implementation of improved by-laws, reporting to the AMAT, etc. This "in-service" training over the course of the project period should result in more effective project implementation as well as greatly increased extension capacities. To make certain extension capacities are being built, the project will require the submission of monthly reports by all pilot area extension officers summarizing project related activity and progress.

160. The training program's curriculum and complimentary in-service training will be designed and organized to build the capacity of extension officers around the following task groups:

- Law and Policy: Support Island Councils to establish and implement community-based management regimes. Enforce and monitor the implementation of relevant national laws/policies and island by-laws.

- **Conservation Biology:** Ability to monitor, conserve and revitalize ecosystem services critical to addressing issues of food security and climate change, e.g., marine conservation, integrated water resources management, and sustainable land management. This will include assisting extension officers to increase their knowledge of best relevant international principles and practices.
- **Education and Outreach:** Design and implement island-based programs to build local awareness and support for improved resource management and climate change resilient actions. This will include ability to work with government agencies, schools, community-groups and other platforms to increase understanding and advocacy.

161. The project will make small-scale equipment investments to make certain extension officers at each pilot site have the tools required to implement project related activities. For instance, fisheries extension officers at pilot sites do not currently have access to small motorboats. The project will invest in small outboard boats for each pilot site. This will enable extension officers and project staff to monitor fishing activities and coastal zone resource status. Agricultural extension officers at each pilot site will be provided with basic transportation (e.g., scooters and/or bicycles with trailers) and hand-held agricultural tools. None of these are currently available. Extension officers at pilot sites will have basic monitoring equipment to measure freshwater quantity and quality, lagoon health, and other primary indicators of ecosystem resilience. Extension officers at pilot sites will receive tablets (ipads or similar) to record and report project activity electronically. These extension officers will be tasked with maintaining equipment in good working order.

162. The project will augment the current “single officer” approach by funding a second officer to be hired for both agriculture and fisheries extension at two pilot site islands. Atolls currently have one government extension officer representing agriculture (MELAD (agriculture) and MFMRDF (fisheries)). By setting in place two officers at each location to work as a single cohort, greater opportunities for extension service training and stronger project implementation support will be realized. It is envisioned that by project close, the two officer system will either be adopted formally by the government with all costs covered; the second officer with enhanced capacities may be relocated to another island that was not part of the original pilot sites; and/or, the second officer may return to Tarawa to work within the ministry to help generate greater extension support capacity at the national level.

163. At least one year prior to project close, the project’s technical staff working with relevant government agencies and trained extension officers will re-visit the initial project extension assessment. At this point, a comprehensive hand-over strategy will be designed. The strategy will detail how established extension officer capacity improvement efforts will be sustained beyond project close. This will include a description of costs, staffing, materials/equipment and other resources required by the Government to continue and expand successful efforts. By project close, extension officers and responsible staff in both MELAD and MFMRD should have a full complement of technical skills required to support community-based activities designed to monitor climate change resilience, shift resource access from open to community-managed, and generally promote the maintenance of ecosystem integrity and other vulnerability and food security safeguards.

**Outcome 2: Implementation of community adaptation measures to increase food security**

LDCF project grant requested: \$ 3,226,210

*Baseline (without LDCF intervention)*

164. The total relevant component Government of Kiribati annual baseline is approximately US\$ 600,000. Investment in the promotion of copra, local production of fruit, vegetables and livestock is approximately US\$ 350,000. Government investment to promote fisheries and marine resources production and conservation is approximately US\$ 250,000.

165. These investments are important. The work shows drive and creates a foundation upon which the project will build. However, the work to date is not sufficient. There is relatively little investment being made on the ground to set in place the safeguards required to make certain the natural resources upon which island dwellers depend remain intact. There is limited baseline information regarding the full status and use of critical resources such as fisheries, freshwater, and agriculture. Nearly all stakeholders acknowledge that these vital resources are in decline, the rate of decline is increasing and that current trends will result in greater vulnerability and food security constraints.

166. Capacities to generate and implement effective resource conservation measures on the island level are extremely limited. The current approaches will not address the root causes related to a dearth of improved awareness, monitoring, and island-based management regimes. Under business as usual scenario, the work on promoting food security through community based agriculture and fisheries management will continue at a small scale. Degradation will continue to advance at a pace and scale beyond current island capacities. Climate change impacts will accelerate the rate of degradation. There is little chance that required safeguards will be set-in place without project investment.

Adaptation alternative:

167. This outcome is designed to address Barrier 2: Limited support to community-based adaptation measures to increase human, natural and productive livelihood capital in affected communities. The project will support a shift from open access to more community-based coastal ecosystem management framework. This will increase the resilience of coral reefs, sea grass beds and mangroves for increased food production and to strengthen additional ecosystem services (such as buffering from storms) to aid community and ecosystem resilience in context of climate variability and change.

168. The project will assist the three outer island pilot sites (Abemama, Nonouti, and Maiana) develop models for improved management. Communities will have the tools required to make more informed decisions. With the support of government extension agents, Island Councils and other decision-makers will be tracking and monitoring resource use. They will be able to gauge the positive and negative impacts of various policy decisions upon long-term food security and ecosystem integrity objectives and indicators. These island-based monitoring approaches will be feeding into national monitoring programs to enhance more efficient and cost-effective approaches. Communities will have greatly increased levels of awareness regarding best international management principles and practices. Opportunities to value coastal zone resources through non-consumptive uses will be operationalized. Island communities will have adopted model by-laws designed to generate more sustainable and coordinated use of natural resources.

169. Each of the tools set in place during project implementation should result in substantially improved capacities for island stakeholders to improve climate change resilience and reduce any emerging challenges to food security and ecological integrity. This will create the fundamental safeguards required to make certain island communities are able to better cope with emerging climate change challenges.

Output 2.1 Vulnerability Assessment and Monitoring Tool Operational

170. At the three outer island pilot sites (Abemama, Nonouti, and Maiana), the project will support the design and implementation of the Adaptation Monitoring and Assessment Tool (AMAT) established under Component 1. Extension officers for both agriculture and fisheries will be tasked with helping individual Island Councils to understand the AMAT and generate required information. Extension officers will work with a broad range of community stakeholders to track critical issues related to climate change vulnerability. This information will be fed into the national system.

171. The assessment, monitoring, and reporting process will be scaled to match local capacity. Local level decision-makers, resource users and other stakeholders will receive the tools and training required to monitor the health and status of their ecosystem. The assessments will confirm successful adaptation practices identified for implementation, including lessons learned from past and on-going initiatives. To build broad-scale awareness and involvement, the process of data collection and monitoring will integrate schools, fishing cooperatives, and other island-based institutions. The tool will be closely coordinated with compatible initiatives sponsored by other donors and government agencies. These

initiatives are generally described in the baseline tables. Specific coordination will be determined through Component 1 activities.

172. The tool will assist communities to accurately assess climate change vulnerability as it relates to general ecosystem integrity and food security. Using the tool, island communities will have the ability to accurately assess the status of fresh water, coastal zone ecology, food security and nutrition, soil and land cover, agriculture, meteorological data, and natural resource use and conservation. The tool will be aligned with and inform other component activities such as by-law implementation, improved fisheries management and coastal zone planning.

173. Project technical experts will be tasked with working with communities to detail necessary resource monitoring protocols and transferring monitoring, assessment and reporting skills to rural stakeholders. International and national experts will work with local stakeholders to complete comprehensive baseline vulnerability assessments. These assessments will generate the information required for sound ecosystem-based decision-making, including physical, social/economic, and biological data.

174. During project year one, the basic parameters of the island-based information management system will be described. These parameters will be integrated within the AMAT strategy generated under Component 1. During project year two, extension officers and Island Councils at each pilot site will receive training and project support in the use and application of this system. The project will provide initial technical support in terms of equipment and expertise required to complete the first vulnerability assessment and initiate relevant monitoring and reporting activities.

175. By the project mid-term, extension officers at all pilot sites will have completed at least two rounds of assessment, monitoring, and reporting. The island-based assessment tool will be fully compatible with and informing the national AMAT. Achieving this benchmark will allow the mid-term evaluators to make a determination regarding the efficacy of continued funding and/or the need to create any needed course corrections. At least one-year prior to project close, a hand-over strategy will be completed. Island Councils, extension officers, and relevant institutions will be fully capable of independent ally completing annual assessment, monitoring, and reporting activities.

#### Output 2.2 Ecosystem-based Adaptation Management Operational

176. The project will provide support for each of the three outer island pilot sites (Abemama, Nonouti, and Maiana) to implement the national guidelines for ecosystem-based adaptation management developed under Component 1. As noted, during project year one project staff and key government agents will conduct on-island awareness building activities at each outer island pilot site similar to the national level efforts. These two-day mini-training programs will be designed to expose island stakeholders such as Island Councils, extension officers, community leaders and resource users to potential challenges and approaches to achieving ecosystem-based adaptation management regimes. The workshop will introduce stakeholders to best international community-based management approaches. The workshops will introduce stakeholders to ecosystem-adaptation principles, basic legal concepts, regulatory framework options, resource management planning models, and basic ecosystem-based adaptation principles. The workshops will engage stakeholders to help define management challenges, priorities, and potential tactics. This initial effort will also be used to generation discussion and capture opinions from local stakeholders. The information generated will help to inform the final guidelines adopted at the national level.

177. All activities will be approached as a training exercise designed to build the capacity building of extension officers, Island Council members, and other stakeholders. Workshop highlights will be captured in both a brief handbook and video. These materials will be distributed to each of the country's island councils and extension officers to help promote broad-based awareness raising.

178. Commencing with project year two, extension officers working with relevant project staff will assist Island Councils at each pilot site to fully adopt and implement the guidelines. This will commence with building the awareness of island stakeholders regarding the form, function and necessity of

improved resource management. During the initiation period, extension officers and other project technical staff will generate the baseline information required to create an informed set of national and island-based guidelines.

179. By the beginning of project year three, extension officers should have the tools, capacity, and knowledge to assist Island Councils and other local decision-makers and stakeholders to adopt and implement each of the key sections of the national guidelines: awareness, vulnerability assessment and monitoring, coastal and land use planning, and model by-laws for fisheries conservation. By project close, the implementation of these models should be delivering lessons that will be systematically captured, collated, and disseminated broadly for national replication.

### Output 2.3 Island and Coastal Zone Strategic Natural Resource Planning Implemented

180. The project will support the adoption and implementation of a strategic natural resource planning strategy at each of the three outer island pilot sites (Abemama, Nonouti, and Maiana). This will be completed based upon the directions of the national guidelines for ecosystem-based adaptation management. These plans will be based upon initial vulnerability assessments completed during the initiation, including the AMAT process. Extension officers, project staff, and associated government institutions will provide the technical expertise and guidance required to complete the planning process. The final plans will set in place management directives for natural resource use linked to the achievement of food security and ecosystem integrity objectives.

181. The process will build the capacities needed for rural communities to identify emerging threats to the ecosystem services upon which they depend, generate effective manage responses, and mobilize action in unison with national and island based agencies and decision-makers. The planning process will be designed to catalyze community involvement and response. Synchronized with other component activities, this output will serve as a training program for vulnerability assessment designed to build rural capacity to monitor, assess and respond to climate change risks.

182. Using the information generated during the PPG phase, each pilot site will have completed a fine-scale assessment and generated a list of prioritized threats prior to the close of project year one. Each island pilot site will create a management response strategy. The brief documents will serve as climate change adaptation vulnerability assessments and adaptation strategies. This strategy will help guide natural resource use and conservation at each island. The strategy will include community-defined opportunities to improve management of fisheries, water use, agricultural development, etc. linked to climate change vulnerabilities and food security. The broad objective of each strategy will be to maintain and restore ecosystem services in order to conserve biodiversity, augment climate change resilience, and improve food security. These plans will outline economic, social and ecological challenges related to key risk factors impacting the security of local livelihoods and the island's ecological integrity. The strategy should serve as a basic tool to help guide integrated land and coastal zone management planning.

183. Prior to the project's mid-term evaluation, each pilot island should have formally adopted a natural resource planning strategy designed to systematically address climate change vulnerability as it relates to food security. This natural resource planning strategy will be appropriately scaled to each island's financial and human resource capacities. The strategy will linked to the island's vulnerability assessment and monitoring tool. The AMAT indicators will help decision-makers at both the national and island level track the effectiveness of the adopted and implemented strategy both during and after project implementation.

184. During project year three, spatial island and coastal zone planning models at each of the pilot sites will be completed. This will be based upon the directions provided in the national guidelines for ecosystem-based adaptation management completed under Component 1. These spatial plans will be map based, identifying resource use and conservation areas such as commercial, subsistence and fisheries protected areas; important mangrove conservation areas; coastal zones highly vulnerable to degradation; fresh water recharge and conservation areas; soil cover; etc. The plans will establish fish recovery zones. The plan will include descriptions for monitoring and assessment, how this will be

conducted, and the responsibilities of various parties. The plans will also describe enforcement responsibilities. This basic land and coastal use planning tool will help each island pilot site to more strategically conserve and manage coastal zones to deliver long-term climate change resilience and food security benefits. Island extension officers will act as principles in this process as part of their capacity building regime.

185. The project will set-aside a portion of funding to be used to assist each pilot site to implement prioritized actions as describe within the coastal zone conservation strategy and management plan. This will serve as a high-level incentive for each island to adopt well-reasoned and highly effective strategic planning mechanisms by project year three. Funded programs will be linked to the long-term conservation of each pilot sites ecosystem resilience and related ecosystem services.

186. Specific parameters for funding and processes for allocation will be generated by the project technical team. The funding guidelines and individual demonstration projects will be reviewed and approved by the project board (steering committee). Funded activities will support the implementation of the island-based conservation strategy and management plan. Funded activities will include:

- Island ecosystem monitoring and reporting (e.g., fresh water, reefs, lagoon pollution, indicator species, etc.);
- Marine ecosystem rehabilitation (e.g., mangrove plantation);
- Implementation of improved fisheries management approaches (e.g., permitting, oversight, enforcement and reporting of fish harvest);
- Establishment, demarcation and enforcement of fish recovery/set-aside zones; and/or,
- Programs to increase community conservation awareness.

187. Trialed activities will be closely monitored. Success indicators will include increased numbers of targeted fish species, maintenance/improvement of marine diversity, and maintenance/improvement of food security. All results will be recorded and disseminated broadly for nationwide learning and replication. Lessons learned will be captured in the updated national guidelines for ecosystem-based adaptation management. The results will be particularly important under Section Five of the guidelines summarizing lessons learned at each of the pilot sites for national replication.

#### Output 2.4 Island-based Coastal Zone Fisheries Monitoring and Conservation Awareness Program

188. The national coastal zone fisheries monitoring and conservation awareness program developed under Component One will be implemented at each of the three outer island pilot sites (Abemama, Nonouti, and Maiana). As noted, the program will raise understanding regarding fisheries management challenges and assist with national and island level prioritization of adaptation actions for fisheries and food security. This activity will closely align with and build support for the various policy and management improvements to be realized during project implementation.

189. The project will support the establishment of a model bonefishing monitoring program. Bonefish provide the primary source of subsistence for most islanders. Efforts will build the capacity of extension officers to support and implement island-based monitoring programs with the support of island-based fishing communities and Island Councils. Several innovative tools will be integrated into the monitoring program. The monitoring program will use size (girth, length, weight) and otolith (earbone) sampling to generate size and age data. A better understanding of bonefish age and size structure will help decision-makers assess overall stock health and understand recruitment (e.g., increase/decrease in average size/age of bonefish caught as indicator of population stability). A marked recapture program will help to inform islanders regarding overall population numbers and home ranges. However, most bonefish have a relatively small home range of 2 - 4 square kilometres within the lagoon system. This means that even on relatively small atolls populations with limited human harvest may thrive while populations under greater stress may be in decline. Understanding home ranges will assist islanders to better understand how best to manage bonefish temporally and spatially, including establishment of areas of refugia. Monitoring programs will include fin clippings to better understand

baseline genetics of bonefish populations. After spawning off-shore, young bonefish will stay in a larval state for approximately fifty days. During this period, ocean current may move young bonefish across large marine areas. Understanding genetics will help identify spawning areas, levels of endemism and genetic interchange between islands. This will help islanders and national fisheries agencies to better manage meta-populations.

190. Results of these activities will serve to inform all project outputs, including awareness programs, ecosystem-based monitoring, and the AMAT. All effort will be directed towards generating awareness and support required to adopt, implement, and inform the implementation of an effective set of island-based by-laws to govern fisheries conservation. The program will be closely linked to, inform and be informed by the national program. It is anticipated that this program will utilize existing models established by Fish-Forever and the Bonefish and Tarpon Trust. Island extension officers will be responsible for daily implementation as part of their capacity building program. The awareness and research/monitoring program will commence during project year one according to the initiation strategy. The program will be fully functional and delivering results prior to the project mid-term. By project close, the programs should be self-sufficient and operational at each pilot site with replication commencing each of Kiribati's 21 populated atolls.

#### Output 2.5 Coastal Zone Fisheries Conservation By-Laws Adopted

191. Each of the three outer island pilot sites (Abemama, Nonouti, and Maiana) will adopt a set of coastal zone fisheries conservation by-laws. The by-laws will conform with and support the national guidelines for ecosystem-based management and the national coastal zone fisheries conservation regulations to be adopted under Component One. The project will provide technical support required to assist Island Councils to adopt these by-laws. The by-laws will describe the conservation and use of marine resources within each pilot site Island Council's three nautical mile (5.5 kilometre) jurisdictional zone.

192. According to the guidance of the national level policy instruments, the Island Council by-laws will consider all aspects of coastal zone conservation and use. These by-laws will be designed to enhance the long-term maintenance of the coastal zone ecological integrity and the ability of these coastal zones to provide food security requirements. The adopted by-laws will consider all aspects of coastal zone fisheries, including subsistence, commercial and tourism use of resources; monitoring and planning; establishment of permitting systems; oversight of off-island export of fisheries resources; and, linkages and requirements for vulnerability assessments and reporting requirements.

193. The by-laws will increase climate change resilience and food security by shifting open resource access to community-managed access. The by-laws will set in place the basic rules required to realize community-based natural resource management approaches. Adopted by-laws will describe how Island Councils, extension officers, and other key stakeholders will engage in natural resource monitoring and reporting. The by-laws will describe basic community-management approaches including resource use rights, responsibilities and transparent decision-making. This will include a description of permitting, monitoring, establishment of coastal zone conservation areas, regulation of various fishing methods, enforcement, and details regarding how fisheries based tourism will be developed and managed.

194. The project will provide the technical support required to assist Island Councils to design and adopt the fisheries conservation by-laws. These by-laws should be adopted prior to the project mid-term. During the second phase of project implementation, the project team working very closely with fisheries extension officers will support the Island Councils to implement the by-laws. As necessary, this will include providing pilot sites with both technical and minimal equipment investments. Illustrative equipment investments may be computers, power sources, monitoring equipment, etc. Project management will determine specific investments during implementation based upon the guidance of the mid-term evaluation results. This support will be based upon an implementation strategy drafted by the project and vetted by the Project Board. The implementation strategy will include a succinct hand-over plan describing how each pilot island will take full responsibility for by-law implementation and funding prior to project close.

195. One year prior to project close, the project will assess implementation progress. The AMAT will assist Island Councils and national stakeholders to track the positive and negative impacts of by-law implementation in terms of achievement of specific food security and ecosystem integrity indicators. As necessary, these by-laws may be amended/updated based upon initial project results and indicator success. At least six months prior to close, the project will generate a handbook documenting the process of by-law creation, adoption and implementation to support further upscale and replication. Lessons learned will be fully captured and collated within the updated national guidelines. By project close, each of the pilot sites should have fully operational by-laws with implementation entirely supported by national and island based funding and technical capacities.

#### Output 2.6 Climate Resilient Fisheries Management Practices Demonstrated

196. The project will establish and demonstrate climate resilient fisheries management practices at each of the three outer island pilot sites (Abemama, Nonouti, and Maiana). To facilitate an organized, informed and coordinated implementation approach at each pilot site, the project will support the establishment of Fisheries Conservation Field Schools (FCFS). The school will also be a demonstration centre to assist locals in their needs in all fisheries related activities that would promote sustainable development.

197. Fisheries extension officers will be tasked with working with project technical staff to organize FCFS field schools at each pilot site. The FCFS will build upon existing initiatives such as the emerging cooperative structures on each island. Individual FCFS models will be established at the village level. It is envisioned that most pilot sites will have between six and twelve FCFS operational prior to project close. Each of these FCFS should be meeting formally on a monthly basis.

198. The project will provide the technical support required to generate a curriculum for FCFS that integrate community based management and climate change adaptation principles and practices. This curriculum will apply best practices from on-going programs. The curriculum will draw upon best international experience and resources related to community-based management, integrated fisheries conservation approaches, and climate change adaptation.

199. The curriculum will assist FCFS participants to raise their level of awareness regarding coastal zone fisheries conservation and how best work coordinate individual efforts to shift “open access” to more sustainable community-based management approaches. Capacity building will assist communities to address issues related to village-based regulation of harvest methods and over-harvest. The curriculum may cover issues related to improving and enhancing food storage technologies. The training program will help FCFS participants better understand and support the food security interests of at risk society members, including poorer and potentially more vulnerable families.

200. The curriculum will be innovative, combining a host of advanced learning methodologies. The curriculum will combine formal learning with informal learning, stressing the facilitation of peer-to-peer or circle learning between field school participants. The curriculum will include on-the-ground demonstrations of best management practices. The FCFS will create a mechanism to improve monitoring and reporting regarding the use and status of coastal zone resources.

201. The curriculum and FCFS approach will stress peer-to-peer learning both within pilot sites and between pilot sites. Many villages often share lagoon and other coastal fisheries resources. Generating an integrated FCFS approach will help make certain that individual, village-based FCFS are working together to design compatible approaches for the conservation of shared resources.

202. Extension officers will be tasked with digitally recording and sharing activity, progress and lessons learned. This will ensure that activities and lessons learned are shared across the pilot site island, between pilot sites, and with national level agencies. Pilot sites have limited internet access. Extension officers will use to help participants to access international information sources.

203. The curriculum will include a strong business-planning component. This will assist FCFS participants to improve their abilities enhance efficiency and cost-effectiveness while supporting more sustainable fisheries practices. Business planning training will assist FCFS participants to diversify their

livelihoods, providing a stronger buffer from potential climate change impacts and food security challenges.

204. Each FCFS will design a village-based fisheries production and use strategy. Each strategy will describe proposed climate resilient fisheries practices and activities to be undertaken by the village-based FCFS. Individual strategies will be aligned with and uphold the objectives of the AMAT, national and island-based adaptation guidelines, adopted by-laws and other project supported outputs, including the island-based conservation strategy and management plan adopted under Output 2.3.

205. The project will offer technical and financial assistance to support implementation of improved fisheries production strategies. The financial bridge provided by the project will help limit the exposure and risk that families might otherwise face when transitioning from “known” production methods to “climate change resilient” production methods. Funded activities will support the implementation of the island-based conservation strategy and management plan adopted under Output 2.3. Funded activities will comply with the adopted fisheries conservation by-laws adopted under Output 2.5. Funded activities will be predicated upon maintaining natural ecological functions and will not support activities such as fish farming that may pose a risk to lagoon diversity. All funded activities will be described in a business plan approved by the relevant Island Council, extension officers (agriculture/environment), Fisheries Department, and the project board (steering committee).

206. All funded activities will be designed to improve the ecological integrity of coastal zone fisheries, shift open-access regimes to community-based management, enhance climate change resilience, and increase food security of vulnerable village members. Examples of funded activities may include:

- Improved traditional methods of fish storage (e.g., drying operations);
- Community-based businesses to organize and enhance off-island sale of sustainably produced fish products;
- Establishment of small-scale fisheries cooperatives to achieve economies of scale;
- Improved village based implementation of temporal and spatial fisheries management programs to increase fish numbers;
- Sustainable harvest programs for non-fish (e.g., sea cucumber, giant clam, etc.);
- Enhanced opportunities for sustainable take of near-island pelagic fish stocks;
- Lagoon or near shore village managed fish attraction devices and/or bagans (raft); and/or,
- Sustainable product diversification (e.g., seaweed harvest).

207. The preliminary curriculum will be designed by the close of project year one. The FCFS will be organized and operational during year two. The village based FCFS fisheries conservation strategies and relevant business plans will be designed by the close of project year two. Project approved priority conservation production activities will commence implementation during project year three. The curriculum and implemented activities will be closely monitored and evaluated regularly. Each funded activity will be closely monitored to determine if desired objectives are being met. Monitoring will feed into and inform island based management planning and the AMAT. Prior to project close, lessons learned from FCFS activity will be captured for national dissemination. This will include a review and updating of the established curriculum.

#### Output 2.7      *Models for community-based tourism management demonstrated*

208. Community-based sport fishing will be demonstrated at the Nonouti and Abemama pilot sites. The purpose of this activity will be to show the potential effectiveness of sport fishing as a mechanism to incentivize improved fisheries management leading to enhanced climate change resilience and food security. Sport fishing will help to anchor the establishment and conservation of coastal zone protected areas established according to the guidance of the adopted coastal zone natural resource management plan and adopted by-laws. This will help communities realize economic benefit from the protection of coastal zones necessary for the recovery of diminished fish stocks.

209. The project will work with the community to draft a business plan to be adopted by the Island Council. The plan will describe how a community-based sport fishing operation will be established and managed. The plan will describe of how revenues will be generated and distributed equitably to support community benefits, such as the lowering of school fees. The plan will describe a corporate structure for community management. The plan will detail positions and commensurate responsibilities, including the roles of Island Councils and other decision-making authorities. The plan will describe investment, training and other capacity building requirements. The program may be designed to work through the FCFS programs established at select sites, reinforcing a more cooperative and coordinated approach to coastal zone resource management. A portion of revenue generated will be directed towards maintaining coastal zone resources, including improved conservation and monitoring.

210. International experts capable of providing technical advice regarding community-based management regimes and the demands of the international sport fishing market will support plan development. These experts will help the community better understand the steps required to successfully operate a sport fishing business, including how best to access the international market.

211. Once the plan is in place, the project will provide technical and financial assistance to support implementation. This will include guide training and the provisioning of basic equipment (e.g., motor-boat and fly fishing gear). The project may also assist with preliminary marketing of the product and provide technical support for initial guest services and expeditions. As noted, the community of Nonouti has already established a suitable guest house. Depending upon the findings of the project's technical experts, minor updates to this facility may be necessary.

212. The effort to establish a replicable model for sport fishing will be linked with national government agencies responsible for fisheries conservation as well as tourism management. This will involve supporting these agencies to take greater responsibility to generate a national level approach to sport fishing that will maintain higher-levels of service, marketing, and product management. The capacities of these agencies will be improved so that they are more capable to build a stronger global reputation for the Kiribati sport fishing industry. The project will work with these government agencies in Tarawa to establish a national booking and marketing system to support remote islands interested in accessing international markets and developing sustainable sport fishing models.

213. It is envisioned that by project close, the Nonouti and Abemama communities will have established fully operational fly-fishing business. All angling tourists will be required to be accompanied by a guide approved according the directions of the community business plan. The community will have exclusive rights to all sport fishing by international anglers. Lodging will be limited to the existing community owned structure. The Nonouti community will cater to approximately 50 guests per year and the Abemama community to approximately 25 guests per year Nonouti will gross approximately US\$ 100,000 annually and will realize an additional US\$ 10,000 annually from conservation licenses. Abemama will generate approximately US\$ 50,000 and US\$ 5,000 from licenses. The tourism model will stimulate the protection of at least 40 square kilometres of coastal zone at Nonouti and 70 square kilometres at Abemama to enhance climate change resilience and create a refuge for replenishment of depleted fish stocks. The protected area will be managed by the community and will demonstrate the ecological and social benefits of shifting open access to more sustainable community-based management.

214. The long-term objective will be to host 160 anglers each year and gross US\$ 320,000 annually plus more than US\$ 32,000 each year from conservation licenses. A large portion of this revenue will be applied to support community schools in an effort to lower schools fees and commercial demand for fisheries.

215. The Nonouti and Abemama models will be evaluated based upon their ability to promote climate change resilience and community-wide incentives for improved coastal zone fisheries management. This will help inform and be informed by the AMAT. Lessons learned will be captured and disseminated broadly so that other island communities may benefit and potentially replicate the model.

## **2.5. Key Indicators, Risks and Assumptions**

## Key Indicators

216. The project indicators contained in the Strategic Results Framework include only impact (objective) indicators and outcome (performance) indicators. Each indicator is ‘SMART’: Specific, Measurable, Achievable, Relevant and Time-bound. During project inception and as part of the 5-year implementation work plan, the project will develop process-oriented indicators to augment the ‘M&E framework’ at the site level. The ‘site-level M&E framework’ will help guide and monitor project implementation. The project’s overall M&E framework will build upon UNDP’s existing M&E Framework for biodiversity programming.

217. The logframe presumes that the cumulative impact of achieving the project’s outcomes will ultimately result in achievement of the project’s objective. This well-reasoned logic is based upon the analysis of barriers and root-causes completed during the PPG phase and elaborated in this project document. The logframe’s indicators are premised upon two key criteria: (i) their pertinence to the above presumption; and (ii) the feasibility of obtaining, producing and updating the data necessary to monitor and evaluate the project through those indicators.

## Risks and Assumptions

Risk/Assumptions	Rating Impact/ Probability High: 5 Low: 1	Mitigation Measure
<p><b>FINANCIAL</b> Kiribati will not allocate adequate funds to continue support of project emplaced successes.</p>	<p>Impact: 4 Prob: 3</p>	<p>This very serious risk was well considered during project design. Kiribati is not a wealthy country. The nation depends largely upon donor aid and income generated from EEZ tuna fishing. The project is designed to set in place improved practices that require substantial up-front costs to develop (e.g., policies, monitoring, community-based management, awareness programs, etc.). However, once emplaced, these practices should require limited funding to support and replicate nationally. The issues that this project is designed to address are ecologically and socially important. This should serve as a further incentive for government to allocate necessary continuation support. The project is designed to assist Island Councils generate the limited funding required to support continuation of island emplaced improvements such as monitoring and permitting. The project has integrated comprehensive “hand-over” plans for all key activities to make certain that before project close the human and financial resources required for continuation are identified and secured at both the island and national level.</p>
<p><b>INSTITUTIONAL</b> Historically unsustainable implementation practices will stymie long-term project impacts.</p>	<p>Impact: 3 Prob:3</p>	<p>Kiribati does not have a strong reputation for integrating and carrying forward project investments. Maintenance, monitoring, and accountability issues have challenged many recent investments, e.g., fish centers, FAD’s, etc. The history of paying sitting fees at all levels (national to local) leads to unsustainable participation. The project will work to establish community-based regimes. Individuals will be responsible for maintaining equipment at the bequest of their fellow community members and under the supervision of agency extension officers. The project will not pay sitting fees, but instead provides</p>

Risk/Assumptions	Rating Impact/ Probability High: 5 Low: 1	Mitigation Measure
		financial incentives such as grants for community groups that successfully participate in project activities. Finally the project has been scaled to better match the absorptive capacity of Kiribati's institutions at both the national and island levels.
<p>INSTITUTIONAL</p> <p>Low implementation capacities will slow project progress</p>	<p>Impact: 4</p> <p>Prob: 2</p>	<p>The project is designed specifically to build capacity incrementally throughout the implementation period and to make certain capacities required to sustain project success are emplaced prior to project completion. The project will help build management and implementation capacities both at government level and at community level. More complex activities will be planned to be implemented after capacity activities are undertaken. Use of NGOs/ Private sector will also be encouraged in project implementation.</p>
<p>INSTITUTIONAL</p> <p>Uptake of adaptation measures may require extra efforts or inputs by local communities</p>	<p>Impact: 3</p> <p>Prob: 2</p>	<p>The project is designed to address the immediate needs of islanders as expressed by islanders. These persons understand the urgency required to reduce fishery pressures and set in place sustainable management designed to deliver long-term benefits. Where additional costs or inputs are required by the communities, the project has integrated ways to offset such costs. This includes bridging financing in the forms of grants to assist communities with the heavy lifting of moving from activities that reduce resilience to activities that enhance resilience. Where additional information is required to enhance community involvement, the project will build the skills of extension officers to engage with and motivate community-based natural resource management improvements. The project will provide community members with rigorous evidence of the impact of various resource management decisions. The project will apply proven methods (e.g., Rare Pride Campaign) to build community awareness of the urgency of being proactive to improve their capacity to address climate change impacts. This combination of approaches will help make certain of community input.</p>
<p>ENVIRONMENTAL</p> <p>Climatic variations may affect project progress, including community ability to participate, rapid loss of ecosystem integrity, etc.</p>	<p>Impact: 2</p> <p>Prob: 2</p>	<p>The project is designed to build adaptation strength and resilience. The probability of short-term climatic events impacting project progress is low. Kiribati is not generally exposed to extreme weather events (e.g., Kiribati does not have a typhoon or monsoon season). Most climate related impacts in Kiribati are expected to take place gradually (e.g., changes to ocean level and temperature).</p>

## 2.6. Cost-Effectiveness

218. During project design, several alternative scenarios were considered from the point of view of cost-effectiveness. Many stakeholders recommended that the project focus upon physical interventions

such as the purchase of freezer equipment, artificial reef restoration, sea-wall construction, placement of fish attraction devices (FADs), and creation of fishponds. Some or all of these physical investments might have provided short-term impacts. However, these were not considered cost-effective investments. Building these structures is very expensive and their effectiveness as a tool to enhance ecosystem integrity and food security is unproven. In spite of efforts conducted during the project design phase, there is still no firm knowledge platform upon which to base decision-making. Rigorous data does not exist showing the status of coastal zone waters and the precise causes of potential degradation. Without this information, there is no way of accurately predicting whether these investments would actually generate positive food security impacts. In addition, monitoring tools are not in place to determine the positive and negative impacts of infrastructure investments once they are made. There is no regulatory framework mandating responsibilities for the upkeep and maintenance of such investments. There is no regulatory framework in place to make certain well-reasoned and strategic approaches are taken once information and understanding of impacts exist.

219. These issues were deliberated extensively during the project design process. After carefully considering conservation priorities, stakeholders abandoned these costly options and decided on an approach that is designed to incrementally build the capacity required to make more informed decisions effectively address the open access regimes that are the root cause of resource vulnerabilities. Rather than rush to make investments in physical demonstrations that may or may not support achievement of the project objective, the project will take an incremental approach to implementation.

220. Initial project investments will first build the framework necessary to make informed decisions on the national and island level. The project will support the generation of information stakeholders require to understand resource trends and prioritize interventions, e.g., adaptation monitoring and assessment tool and fisheries conservation awareness campaign. The project will next build the enabling framework. This will commence with the ecosystem-adaptation management tool, progress to the island-based resource management plan, and culminate in a national regulation and island by-laws for fisheries conservation.

221. While the framework for informed decision-making is being built, the project will simultaneously construct the capacity of extension officers to effectively support island-based implementation of improved monitoring, oversight, and demonstration of best practices related to ecosystem integrity and food security.

222. Investments in the demonstration of improved management approaches will occur only after the awareness, monitoring and decision-making frameworks are in place. This will insure that demonstrations are predicated upon a more complete accounting of challenges and are targeted to precisely address those challenges. In this way, demonstrations will respond more accurately to the needs of stakeholders with improved knowledge regarding best international principles and practices. For instance, the interventions to be modelled under Output 2.6 will only be designed/implemented after the pilot sites have established a strategic planning framework and adopted resource management by-laws. This approach will greatly enhance cost-effectiveness. Demonstration investments nested within an improved enabling environment will be better poised to be ecologically, socially, and financially sustainable.

223. On a broader level, project investments will create capacity and decision-making pathways that enable local governments to make pro-conservation investments rather than ill-advised and unsustainable short-term investments. This framework for informed decision-making will deliver returns well beyond the initial investment period.

224. The project is designed to do the heavy lifting of evincing improved understanding, decision-making, and results oriented management practices at a few distinct locations. However, the project will set in place from the beginning the institutional and policy enabling environment required to capture best practices and replicate these practices nationally. The project's pilot sites will be centres of excellence, offering models for other islands to follow. The monitoring, planning, regulatory and demonstration activities at each pilot site will be designed so that they can easily be uplifted, transferred, and mimicked by other Island Councils and stakeholders. National institutions, including those responsible for agriculture and fisheries, will have extension programs in place to facilitate this transfer of success for very little overhead. The heavy investment costs of supplying technical expertise and capacity building are carried

upfront. This means that investments made over the project's lifespan will not only catalyse a substantial course change at the pilot site level, those improvements will be amplified post-project to cover a much larger geographic area. Ultimately, the same best practices will be modified and adopted by each of Kiribati's inhabited islands. This will help insure national level ecosystem integrity and food security.

## **2.7. Sustainability**

### Environmental and Social Impacts

225. The Environmental and Social Screening Procedure (ESSP) was followed during the PPG, as required by the ESSP Guidance Note of the UNDP. Please see Annex for the full ESSP summary.

### Sustainability

226. The focus of this project on linking improved marine ecosystems resilience and productivity in the context of climate change will be innovative for Kiribati. By linking different sectors working on food security, ecosystems management and planning as well as early warning systems, the project will have a wider institutional collaboration and actions to address very important climate change related vulnerability in the country. This inter-sectoral approach to address the concerns on food security and climate change issues is innovative in Kiribati's context. This approach is expected to leave an important legacy of such cross sectoral collaboration in Kiribati, which will also ensure its long term sustainability.

### Institutional Sustainability

227. Building the ability of institutions to sustainably support the long-term health of Kiribati's unique ecosystems is paramount. The project will positively impact institutions on both the national and island level. This is one of the fundamental aspects of this project's design. For instance, strengthening the nation's policy framework will alleviate current institutional inconsistencies and gaps. Direct capacity building will take place through training programs designed to be launched during project implementation and carried forward post-project by strengthened institutions. In-direct capacity building will result from implementation of various project activities. Much of the project's efforts are focused upon providing institutions with the tools required for long-term institutional integrity and coordinated efforts.

### Financial Sustainability:

228. The financial sustainability of this project will in part depend upon the Government's continued support for implemented projects. Unfortunately, Kiribati has a rather poor track record in terms of carrying forward implemented activities. This project has learned from past experiences and set-in-place mechanisms such as hand-over strategies designed specifically to address and alleviate past challenges. The project is designed to answer directly the needs as voiced by stakeholders in an attempt to enhance long-term ownership. This same approach will be continued during implementation. This will hopefully help communities to better understand, advance, and financially support continued implementation. The project will catalyze a shift from current "open access regimes" to ecosystem-based management approaches that will result in benefits that are both social and ecological. This will be accomplished via project infusion of capital required to catalyze change. The project was designed to match very closely the absorptive capacity of Kiribati institutions. Once the necessary plateau is achieved, the government should have ample financial resources required to support the relatively low costs of continued improvement and operation of project emplaced improvements. Each of the project outcomes will be accompanied by a financial sustainability plan. These transition plans will detail the costs required for continued operation. This combination of safeguards should result in end of the project sustainability.

### Environmental Sustainability:

229. This project's intent is to improve environmental sustainability on all fronts. The project will remove the key barriers to food security and climate change vulnerabilities. The project will assist Kiribati to implement urgent adaptation actions to effectively address climate variability and change related to global climate change impacts on its people's food security. The issue of food security in

rural Kiribati cannot be separated from the issue of natural resource management, particularly the conservation of critical ecosystem services.

## **2.8. Replicability**

230. The premise for this project is the need to build replicable models for ecosystem-based management. Both of the project's components are designed to generate replicable models for this. Component One's will assist national institutions to set in place capacities to strategically plan, monitor and regulate natural resource use to create the safeguards necessary to insure food security. This will increase the scale and scope of success awareness. To facilitate upscale and replication of best practices, the project will create a cohort of well informed national agencies. Replication will be facilitated through the national monitoring system, national training programs particularly for extension officers, and the creation of a much stronger enabling environment. Component Two will build a replicable model for island level management. This will initially focus upon the project's pilot sites, but will build the capacities within key government agencies required to achieve similar outputs for other islands. This will include generating new ways of strategically planning and managing island resources. Again, lessons generated will be used to build capacity across Kiribati.

## **2.9. Stakeholder Engagement Plan**

231. The number of stakeholders is very broad for a country with approximately 100,000 residents. This is evidenced by the long list of stakeholders identified in the stakeholder analysis at Section 1.5. The project will rely upon a number of tools to make certain stakeholders are fully engaged. The project steering committee (board) will be responsible for making certain that a broad range of national stakeholders are aware of and engaged with project implementation efforts. This will include regular reporting by project management and technical staff regarding the status of project implementation activities and updates regarding challenges, opportunities, and lessons learned. National engagement will be further facilitated through project activities such as training programs and other capacity building efforts designed to incorporate representation from variety of stakeholders and stakeholder organizations. At the island level, the Island Councils will be the primary mechanism for stakeholder engagement. This will be augmented by project activities designed to include a cross-section of island inhabitants, including training programs, planning operations, and field work. The project is designed specifically to facilitate broad-based participation by island inhabitants in project activities.

232. There are several development and conservation investments that share objectives with the proposed project. The project will utilize a number of approaches to make certain that the proposed project from inception to completion is identifying opportunities and fully engaging with related investments. As part of the stakeholder engagement plan, it will be incumbent upon the project steering committee and management unit to make certain these opportunities are maximized. As noted, government and donor partner stakeholders will be invited to participate in a round-table discussion at the immediate start of this project. Participants will be invited to work cooperatively to seek out ways to make certain implementation is mutually beneficial and synergistic with the existing and emerging investment environment. This will include identifying points of common interest and pathways to make certain implemented activities are leverages to amplify impact. As noted, government and donor partners will be convened annually during project implementation and invited to share updates regarding progress and lessons learned. These stakeholders will also be provided with regular electronic updates, including progress reports and results from on-going and completed activities.

### PART III: STRATEGIC RESULTS FRAMEWORK

PROJECT OBJECTIVE AND OUTCOMES	INDICATOR	BASELINE	END OF PROJECT TARGETS	SOURCE OF INFORMATION	RISKS AND ASSUMPTIONS
<p><b>Project Objective:</b> To build the adaptive capacity of vulnerable Kiribati communities to ensure food security under conditions of climate change.</p>	<p>Percentage of households and communities that have stable or increased food security in the face of climate change</p>	<p>Current trajectory of resource use signify increased future food insecurity (actual household food security will be defined during Year 1 of project and presented as gender-disaggregated data)</p>	<p>By the end of the project 100% of men, women and children of targeted islands (Nonouti, Abemama, Maiana) have stable and/or increased levels of food security increasing their resilience against climate change</p>	<p>The project will design and implement a survey to be administered by health clinics at each pilot site to determine levels of food security.</p>	<p>High-level ownership by primary government stakeholders to apply reforms continues</p> <p>Substantial buy-in from island stakeholders is sustained and expanded</p> <p>Rate of capacity building can match pace of required changes.</p>
	<p>Number of bonefish (<i>Albula glossodonta</i>) increasing and/or stable.</p> <p>* Bonefish are the main protein source for I-Kiribati and an indicator of over-all coastal zone fishery health.</p>	<p><u>Nonouti</u> Estimated number of bonefish: TBD</p> <p><u>Abemama</u> Estimated number of bonefish: TBD</p> <p><u>Maiana</u> Estimated number of bonefish: TBD</p> <p><u>South Tarawa</u> Estimated number of bonefish: TBD</p>	<p><u>Nonouti</u> Estimated number of bonefish: Stable or increasing compared to baseline</p> <p><u>Abemama</u> Estimated number of bonefish: Stable or increasing compared to baseline</p> <p><u>Maiana</u> Estimated number of bonefish: Stable</p>	<p>The project will support the design and implementation of a coastal zone fisheries monitoring program. The monitoring program will be designed under Component 1 and implemented through Component 2. This will include rigorous reporting on bonefish catch rates and fisheries health.</p>	

PROJECT OBJECTIVE AND OUTCOMES	INDICATOR	BASELINE	END OF PROJECT TARGETS	SOURCE OF INFORMATION	RISKS AND ASSUMPTIONS
			or increasing compared to baseline  <u>South Tarawa</u> Estimated number of bonefish: Stable or increasing compared to baseline		
	Percentage of Kiribati population covered by the enhanced early warning system	The existing communication systems are inadequate to send early warning message in timely manner	95% of Kiribati population receives early warning in a timely manner using one of the multiple communication lines	Radio and Television Reports	
<b>Outcome 1</b> Institutional capacity development to reduce vulnerability to climate change-induced food shortages	<b>Outputs:</b> 1.1 National program for informed decision-making. 1.2 National Guidelines for Ecosystem-based Adaptation Management 1.3 National Coastal Zone Fisheries Monitoring and Conservation Awareness Program 1.4 National Coastal Zone Fisheries Conservation Regulation 1.5 Extension Officer Training				
	GoK provides annual financial support to maintain of national adaptation and monitoring tool.	GoK annual support for AMAT: 0	GoK annual support for AMAT: US\$ 25,000	Project reports and documents.	High-level ownership by primary government stakeholders to apply reforms continues

PROJECT OBJECTIVE AND OUTCOMES	INDICATOR	BASELINE	END OF PROJECT TARGETS	SOURCE OF INFORMATION	RISKS AND ASSUMPTIONS
	Total hectares of island territory managed according to land use plans developed using national guidelines for ecosystem-based adaptation management	<u>Nonouti</u> Area with EBA land use plan: 0 ha  <u>Abemama</u> Area with EBA land use plan: 0 ha  Maiana Area with EBA land use plan: 0 ha	<u>Nonouti</u> Area with EBA land use plan: 2,000 ha  <u>Abemama</u> Area with EBA land use plan: 2,700 ha  <u>Maiana</u> Area with EBA land use plan: 2,700 ha	National AMAT delivered.  National guidelines delivered.  Results of training programs.  Reports from island based extension officers.	Rate of capacity building can match pace of required changes
	Hectares of coastal zone fishing management areas regulated through zoning system as a result of national regulatory tool adopted by GoK.	<u>Nonouti</u> Regulated fishing area: 0 ha  <u>Abemama</u> Regulated fishing area: 0 ha  <u>Maiana</u> Regulated fishing area: 0 ha	<u>Nonouti</u> Regulated fishing area: 40,000 ha  <u>Abemama</u> Regulated fishing area: 15,000 ha  <u>Maiana</u> Regulated fishing area: 0 ha		
	Coastal Zone Fisheries Regulation adopted based upon increased level of national awareness about links between improved coastal ecosystem	0: National Coastal Zone Fishing Regulation adopted	1: National Coastal Zone Fishing Regulation adopted		

PROJECT OBJECTIVE AND OUTCOMES	INDICATOR	BASELINE	END OF PROJECT TARGETS	SOURCE OF INFORMATION	RISKS AND ASSUMPTIONS
	management and sustainability and resilience of subsistence coastal fisheries livelihoods.				
	Cohort of eight extension officers increase capacity score as a result of project training program based upon GEF Capacity Result 2 (Capacities to generate, access and use information knowledge).	Cohort of eight agriculture extension officers CR2 capacity score: 3  Cohort of eight fisheries extension officers CR2 capacity score: 3  * Score range: 0 - 15	Cohort of eight agriculture extension officers CR2 capacity score: 15  Cohort of eight fisheries extension officers CR2 capacity score: 15  * Score range: 0 - 15		
<b>Outcome 2</b> Implementation of community adaptation measures to increase food security	<b>Outputs:</b> 2.1 Ecosystem-based Adaptation Management Operational 2.2 Vulnerability Assessment and Monitoring Tool Operational 2.3 Island and Coastal Zone Strategic Natural Resource Planning Implemented 2.4 Island-based Coastal Zone Fisheries Monitoring and Conservation Awareness Program 2.5 Coastal Zone Fisheries Conservation By-laws Adopted 2.6 Climate Resilient Fisheries Management Practices Demonstrated 2.7 Models for Sustainable Tourism Demonstrated				
	Increase in total hectares of coastal zone protected (fish recovery zones) for fisheries developed using national guidelines for ecosystem-based adaptation management.	<u>Nonouti</u> Fish recovery zones: 0 ha  <u>Abemama</u>	<u>Nonouti</u> Fish recovery zones: 4,000 ha  <u>Abemama</u>	Project monitoring reports  Results of island monitoring activities	Substantial buy-in from island stakeholders is sustained and expanded  Rate of capacity building can match pace of required changes

PROJECT OBJECTIVE AND OUTCOMES	INDICATOR	BASELINE	END OF PROJECT TARGETS	SOURCE OF INFORMATION	RISKS AND ASSUMPTIONS
		Fish recovery zones: 0 ha  <u>Maiana</u> Fish recovery zones: 0 ha	Fish recovery zones: 4,000 ha  <u>Maiana</u> Fish recovery zones: 4,000 ha	Reports from Island Councils to AMAT  Evaluation mission reports	Project resources are not overextended in an attempt to pilot interventions at more locations than feasible
	Increase in hectares of mangrove habitat as reported annually by Island Councils using the national adaptation and monitoring tool (AMAT).	<u>Nonouti</u> Mangrove (ha): TBD  <u>Abemama</u> Mangrove (ha): TBD  <u>Maiana</u> Mangrove (ha): 273	<u>Nonouti</u> Mangrove (ha): 10% increase compared to baseline  <u>Abemama</u> Mangrove (ha): 10% increase compared to baseline  <u>Maiana</u> Mangrove (ha): 300+		
	Number of existing commercial fishing operators with permits allocated and monitored based upon implementation of coastal zone fisheries conservation by-laws.	<u>Nonouti</u> Commercial Permits: 0  <u>Abemama</u> Commercial Permits: 0	<u>Nonouti</u> Commercial Permits: 5  <u>Abemama</u> Commercial Permits: 5		

PROJECT OBJECTIVE AND OUTCOMES	INDICATOR	BASELINE	END OF PROJECT TARGETS	SOURCE OF INFORMATION	RISKS AND ASSUMPTIONS
		Maiana Commercial Permits: 0	Maiana Commercial Permits: 5		
	Capacity score of Fisheries Conservation Field School participants increases based upon GEF Capacity Result 2 (Capacities to generate, access and use information knowledge).	<u>Nonouti FCFS</u> Scorecard CR2: 1  <u>Abemama FCFS</u> Scorecard CR2: 1  <u>Maiana</u> Scorecard CR2: 1  * Score range: 0 – 15	<u>Nonouti FCFS</u> Scorecard CR2: 15  <u>Abemama FCFS</u> Scorecard CR2: 15  <u>Maiana</u> Scorecard CR2: 15  * Score range: 0 - 15		
	Amount of revenue generated annually by Island Councils from the use of coastal zone resources to support fisheries conservation.	<u>Nonouti</u> AU\$ 0  <u>Abemama</u> AU\$ 0  <u>Maiana</u> AU\$ 0	<u>Nonouti</u> AU\$ 15,000  <u>Abemama</u> AU\$ 5,000  Maiana AU\$ 5,000		

## PART IV: TOTAL BUDGET AND WORKPLAN

<b>Award ID:</b>	To be filled	<b>Project ID(s):</b>	To be filled
<b>Award Title:</b>	Enhancing national food security in the context of global climate change		
<b>Business Unit:</b>	FJI10		
<b>Project Title:</b>	Enhancing national food security in the context of global climate change		
<b>PIMS no.</b>	4570		
<b>Implementing Partner (Executing Agency)</b>	MELAD		

GEF Outcome/ Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	ATLAS Budget Code	ATLAS Budget Description	Amount YEAR 1 (USD)	Amount YEAR 2 (USD)	Amount YEAR 3 (USD)	Amount YEAR 4 (USD)	Amount YEAR 5 (USD)	TOTAL	Budget #
<b>Outcome 1: Institutional capacity development to reduce vulnerability to climate change-induced food shortages</b>	MELAD	62160	GEF-10003	71200	International Consultants	\$18,000	\$18,000	\$0	\$0	\$0	<b>\$36,000</b>	1
						\$6,000	\$0	\$0	\$0	\$0	<b>\$6,000</b>	2
						\$18,000	\$18,000	\$0	\$0	\$0	<b>\$36,000</b>	3
						\$16,000	\$16,000	\$16,000	\$0	\$0	<b>\$48,000</b>	4
						\$18,000	\$18,000	\$18,000	\$0	\$0	<b>\$54,000</b>	5
						\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	<b>\$45,000</b>	6
						\$0	\$0	\$5,000	\$0	\$5,000	<b>\$10,000</b>	7
				71300	Local Consultants	\$8,600	\$8,600	\$8,600	\$8,600	\$8,600	<b>\$43,000</b>	8
						\$8,600	\$8,600	\$8,600	\$8,600	\$8,600	<b>\$43,000</b>	9
						\$0	\$0	\$1,250	\$0	\$1,250	<b>\$2,500</b>	10
						\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$12,500	11
				71600	Travel	\$29,800	\$29,800	\$29,800	\$29,800	\$29,800	<b>\$149,000</b>	12
				72100		\$45,000	\$45,000	\$0	\$0	\$0	<b>\$90,000</b>	13

					Contractual Services - Companies	\$30,000	\$30,000	\$30,000	\$0	\$0	<b>\$90,000</b>	14
					Contractual Services - Companies	\$22,500	\$22,500	\$22,500	\$22,500	\$0	<b>\$90,000</b>	15
				72200	Equipment and furniture	\$10,000	\$10,000				<b>\$20,000</b>	16
				72800	Information Technology equipment	\$40,000	\$0	\$0	\$0	\$0	<b>\$40,000</b>	17
						\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	<b>\$140,000</b>	18
				75700	Training, Workshop & Conference	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	<b>\$30,000</b>	19
						\$7,500	\$0	\$0	\$0	\$7,500	<b>\$15,000</b>	20
			<b>TOTAL COMPONENT 1</b>			<b>\$323,500</b>	<b>\$270,000</b>	<b>\$185,250</b>	<b>\$115,000</b>	<b>\$106,250</b>	<b>\$1,000,000</b>	
<b>Outcome 2: Implementation of community adaptation measures to increase food security</b>	MELAD	62160	GEF-10003	71200	International Consultants	\$0	\$0	\$24,000	\$24,000	\$24,000	<b>\$72,000</b>	21
						\$0	\$6,000	\$6,000	\$6,000	\$6,000	<b>\$24,000</b>	22
						\$0	\$0	\$40,000	\$40,000	\$40,000	<b>\$120,000</b>	23
						\$0	\$0	\$30,000	\$30,000	\$30,000	<b>\$90,000</b>	24
						\$0	\$0	\$36,000	\$36,000	\$0	<b>\$72,000</b>	25
						\$0	\$16,000	\$16,000	\$16,000	\$0	<b>\$48,000</b>	26
						\$14,400	\$14,400	\$14,400	\$14,400	\$14,400	<b>\$72,000</b>	27
						\$0	\$0	\$15,000	\$0	\$15,000	<b>\$30,000</b>	28
				71300	Local Consultants	\$13,900	\$13,900	\$13,900	\$13,900	\$13,900	<b>\$69,500</b>	29
						\$13,900	\$13,900	\$13,900	\$13,900	\$13,900	<b>\$69,500</b>	30
						\$8,100	\$8,100	\$8,100	\$8,100	\$8,100	<b>\$40,500</b>	31
\$0	\$0	\$1,500	\$0			\$1,500	<b>\$3,000</b>	32				
\$2,500	\$2,500	\$2,500	\$2,500			\$2,500	<b>\$12,500</b>	33				

			71400	Contractual Services - Individuals	\$43,200	\$43,200	\$43,200	\$43,200	\$43,200	\$216,000	34
			71600	Travel	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$225,000	35
			72100	Contractual Services - Companies	\$0	\$56,250	\$56,250	\$56,250	\$56,250	\$225,000	36
		\$0			\$56,250	\$56,250	\$56,250	\$56,250	\$225,000	37	
		\$0			\$55,000	\$55,000	\$55,000	\$55,000	\$220,000	38	
			72200	Equipment and furniture	\$30,000	\$0	\$0	\$0	\$0	\$30,000	39
			72300	Materials and goods	\$0	\$22,500	\$22,500	\$22,500	\$22,500	\$90,000	40
			72400	Communic & Audio Visual Equip	\$0	\$0	\$60,000	\$0	\$0	\$60,000	41
			72600	Grants	\$0	\$143,750	\$143,750	\$143,750	\$143,750	\$575,000	42
		\$0			\$0	\$100,000	\$100,000	\$100,000	\$300,000	43	
		\$0			\$0	\$20,000	\$20,000	\$0	\$40,000	44	
			72800	Information Technology equipment	\$30,000	\$30,000	\$30,000	\$0	\$0	\$90,000	45
			74100	Professional Services	\$0	\$0	\$25,000	\$25,000	\$25,000	\$75,000	46
			75700	Training, Workshop & Conference	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$60,000	47
		\$10,000			\$10,000	\$10,000	\$10,000	\$10,000	\$50,000	48	
		\$11,105			\$0	\$0	\$0	\$11,105	\$22,210	49	
<b>TOTAL COMPONENT 2</b>					<b>\$234,105</b>	<b>\$548,750</b>	<b>\$900,250</b>	<b>\$793,750</b>	<b>\$749,355</b>	<b>\$3,226,210</b>	

<b>Project Management</b>	UNDP	62160	GEF-10003	71400	Contractual Services - Individuals	\$33,400	\$33,400	\$33,400	\$33,400	\$33,400	<b>\$167,000</b>	50
				74100	Professional Services	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	<b>\$25,000</b>	51
				72500	Supplies	\$248	\$248	\$248	\$248	\$249	<b>\$1,241</b>	52
				72800	Information Technology equipment	\$600	\$600	\$600	\$600	\$600	<b>\$3,000</b>	53
				74599	Direct Project Costs	\$5,752	\$6,009	\$5,752	\$4,412	\$1,834	<b>\$23,759</b>	54
				<b>Total - Project Management (GEF)</b>		<b>\$45,000</b>	<b>\$45,257</b>	<b>\$45,000</b>	<b>\$43,660</b>	<b>\$41,083</b>	<b>\$220,000</b>	
<b>TOTAL PROJECT</b>						<b>\$602,605</b>	<b>\$864,007</b>	<b>\$1,131,500</b>	<b>\$952,410</b>	<b>\$896,688</b>	<b>\$4,446,210</b>	

Budget Notes:

Budget Note	Explanation
1	International Natural Resource Monitoring Expert: Support development and implementation of AMAT tool (Output 1.1)
2	Health and Nutrition Expert: Support for AMAT sections related to assessment of health and nutrition (Output 1.1)
3	Island Natural Resource Conservation Expert: support development and implementaiton of ecosystem-based adaptation guidelines (Output 1.2)
4	Community-based Natural Resource Management and Extension Expert: Technical oversight of national extension training program. (Output 1.5)
5	International Regulatory Expert: Technical support drafting and implementation of National Coastal Zone Fisheries Conservation Regulation (Output 1.4)
6	Senior Technical Advisor: Technical support to make certain all project activities are on-track to achieve objective, including support for monitoring/evaluation, etc.
7	International Project Evluation Experts: (mid-term and final evaluation)
8	National fisheries policy, conservation, and training expert: Technical Support for Component 1 activities
9	National agriculture policy, conservation, and training expert: Technical Support for Component 1 activities
10	National Project Evaluation Expert (mid-term and final evaluation): Component 1
11	Contractual appointment of a Project Manager (@ US\$500/wk for 25 wks)
12	International and national travel to support component activities

13	National Extension Training Program: Establishment of climate-smart fisheries and agriculture extension officer training program. This will ideally be a local Kiribati organization tasked with developing and implementing the initial training program. Technical support and oversight will be provided by the project's technical team to make certain the training program reflects international standards. The contracted party will be required to submit a complete work plan and strategy to be approved according to UNDP procurement requirements. (Output 1.5)
14	Fisheries Conservation Awareness Program: Support for an NGO (e.g.Rare) to implementation national fisheries conservation awareness program. The contracted party will be required to submit a complete work plan and strategy to be approved according to UNDP procurement requirements. (Output 1.3)
15	Establishment of Fisheries Conservation Monitoring Program: This will ideally be implemented by an NGO and/or academic organization capable of bringing teams of professionals to work with I-Kiribati to design and implement comprehensive fisheries monitoring, particularly for bonefish and other coastal zone fish targeted for consumption. The monitoring program and information established will be used to inform island based initiatives and national level planning/management. A key element will be strengthening the capacity of extension officers to engage in fisheries monitoring. This will also involve zonation of coastal zones, including establishment of community-based marine conservation areas as fish recovery zones and implementation of multiple use permitting structures. Same organization to support national (Component 1) and island based (Component 2) monitoring. The contracted party will be required to submit a complete work plan and strategy to be approved according to UNDP procurement requirements. (Outputs 1.3)
16	Procurement of office chairs, desks, tables, storage cupboards, etc. for Component 1 functioning
17	AMAT: Equipment (computers, communication, etc.) to operationalize AMAT (Output 1.1)
18	MET early warning system: Support for MET to emplace and operationalize early warning systems (Output 1.1)
19	National Workshops: forums for development of AMAT, ecosystem-based adaptation guidelines, and fisheries regulation development
20	Inception and Project Close Workshops: Costs associated with Component 1 activities inception, including donor harmonization, technical work planning, and financial sustainability/hand-over planning
21	International Natural Resource Monitoring Expert: Support for implementation of AMAT at island level (Output 2.1)
22	Health and Nutrition Expert: Support for AMAT sections related to assessment of health and nutrition (Output 1.1)
23	Island Natural Resource Conservation Expert: Technical support for Implementaiton of ecosystem-based adaptation guidelines (Output 2.2) and Island and coastal zone strategic planning (Output 2.3)
24	Community-based Natural Resource Management and Extension Expert: Technical support for national extension training program and development/implementation of Fisheries Conservation Field Schools (Output 2.6)
25	International Regulatory Expert: Technical support drafting and implementation of island-based coastal zone fisheries conservation by-laws (Output 2.5)
26	Climate Smart Agriculture Expert: Provide support to extension officers for the development and implementation of CSA curriculum for extension services (Output 2.6)
27	Senior Technical Advisor: Technical support to make certain all project activities are on-track to achieve objective, including support for monitoring/evaluation, etc.
28	International Project Evaluation Experts: (mid-term and final evaluation)
29	National fisheries capacity building expert: Technical Support for Component 2 activities
30	National agriculture capacity building expert: Technical Support for Component 2 activities
31	National health and nutrition expert: Support for development and monitoring of island based indicators for food security
32	National Project Evaluation Expert (mid-term and final evaluation): Component 2

33	Contractual appointment of a Project Manager (@ US\$500/wk for 25 wks)
34	Extension Salaries: Costs for additional extension officers (3 agriculture/3 fisheries)) to be placed at each island for in-service training (US\$ 150/week x 240 weeks)
35	International, national, and island-based travel to support component activities
36	Fisheries Awareness Program: Support for Rare to implementation island based fisheries conservation awareness program to generate help set in place planning, zoning, and regulatory frameworks. The contracted party will be required to submit a complete work plan and strategy to be approved according to UNDP procurement requirements. (Output 2.4)
37	Establishment of Fisheries Conservation and Monitoring Program: NGO and/or academic organization capable of bringing teams of professionals to work with I-Kiribati to design and implement comprehensive fisheries monitoring, particularly for bonefish and other coastal zone fish targeted for consumption. The monitoring program and information established will be used to inform island based initiatives and national level planning/management. A key element will be strengthening the capacity of extension officers to engage in fisheries monitoring. This will also involve zonation of coastal zones, including establishment of community-based marine conservation areas as fish recovery zones and implementation of multiple use permitting structures. Same organization to support national (Component 1) and island based (Component 2) monitoring. The contracted party will be required to submit a complete work plan and strategy to be approved according to UNDP procurement requirements. (Inform Output 2.1 - 2.7)
38	Fisheries Conservation Field School Program: Ideally an NGO and/or academic organization (national, regional, or international) with proven background in extension services and coastal zone fisheries conservation. Tasked with supporting extension officers with the design and implementation of model community based fisheries program. Will work closely with and/or be same organization tasked with the development and implementation of Component 1 National Extension Training Program. The contracted party will be required to submit a complete work plan and strategy to be approved according to UNDP procurement requirements. (Output 2.6)
39	Basic supplies to support technical functions at each pilot site. Includes computer, officer furniture, etc.for each outer island pilot site
40	Fisheries Conservation Field Schools: Teaching materials, equipment for capturing and sharing lessons learned using social media (e.g., ipads or similar), etc. (Output 2.6)
41	AMAT: Equipment (computers, communication, etc.) to operationalize AMAT at island sites (Output 2.1)
42	Grants: Support for outer island pilot sites to implement strategic natural resource management plans (Output 2.3)
43	Grants: Support for communities to implement climate change resilient fisheries management demonstrations (Output 2.6)
44	Grants: Support for the development of fly fishing operation as mechanism to drive conservation of coastal zone (Output 2.7)
45	Ecosystem-Based Monitoring Equipment: 3 small outboard motor boats to support coastal zone conservation initiatives, basic water testing equipment, basic transport (motorscooters) for island extension officers, notepads/laptops for extension officers reporting, petrol costs for basic monitoring, permit implementation/regulation equipment (e.g., printing) etc.
46	Emplacement of Sport Fishing: Technical team to support for the development of a model community-based fly fishing operation at Nonouti and Abemama. This will include support for development of marketing, guide training, service provision, etc. The contracted party(ies) will be required to submit a complete work plan and strategy to be approved according to UNDP procurement requirements. (Output 2.7)
47	Island Based Facilitation Workshops: Workshops, forums and community meetings for AMAT and island ecosystem based planning implementation
48	National Upscaling Workshops and Materials: Annual national workshops to capture and upscale lessons learned from island-based initiatives; design and promulgation of lessons learned materials.

49	Inception and Project Close Workshops: Costs associated with Component 2 activities inception, including donor harmonization, technical work planning, and financial sustainability/hand-over planning
50	Contractual appointment of a Project Manager (@ US\$500/wk for 190wks) and Admin Assistant (@ US\$ 300/week for 240 weeks).
51	Audit arrangement.
52	Basic supplies to support office functions
53	Cell phone contracts and call costs for project management staff
54	<p>Direct Project Cost:</p> <ul style="list-style-type: none"> <li>- DPCs are execution-related costs that are separate and distinct from General Management Support (GMS) costs that are incurred by UNDP regardless of the implementation modality chosen for the project.</li> <li>- Unit cost for each service is based on UNDP's standard and most recent Universal Price List (UPL).</li> <li>- Budgeted DPC agreed upon with IP through a formal Letter of Agreement include: Recruitment and management of Project Personnel, international consultants, interview of Project Management Staff, payment to vendors and staff and travel Assistance if needed.</li> <li>- The Letter of Agreements (LOA) between the Implementing partners and UNDP is under process, expect to be completed during Inception workshop.</li> </ul>

## PART V: MANAGEMENT ARRANGEMENTS

### A. Project Implementation Arrangement

233. The project will be executed under National Implementation Modality (NIM), with execution by the Ministry of Environment, Lands & Agriculture Development, following UNDP's Programme and Operations Policies and Procedures, per its role as implementing agency. Execution of the project will be subject to oversight by a Project Steering Committee, detailed below. Day to day coordination will be carried out under the supervision of a Project Coordination Unit (PCU) and the key partner agencies (MFMRD), also detailed below. The executing agency will take responsibility for different outcomes/activities according to existing capacities and field realities, ensuring effective and efficient use of GEF resources.

234. The *Ministry of Environment, Lands & Agriculture Development (MELAD)* is the official project *Executing Agency*, responsible for the fulfilment of the project's results. Its main responsibilities related to the project are to:

- Lead the project implementation with the support of the Project Coordination Unit (PCU);
- Participate together with UNDP, in selecting the Project Manager;
- Designate a representative to act as a permanent liaison between UNDP and the Project Coordination Unit, and to participate in the Project Steering Committee meetings, and others as required, to ensure that the necessary inputs are available to execute the project;
- Prove the technical and administrative capacity to develop the project;
- Monitor the project's work plan and progress;
- Provide the name and describe the functions of the person or persons authorized to deal with UNDP concerning the project's matters;
- Assist in the development of ToRs for technical personnel and consultancies for project implementation;
- Participate in the selection process of the consultants and approve all hiring and payment request;
- Provide the name and describe the functions of the person or persons authorized to sign the project's budget and/or substantive revisions of the project;
- Coordinate the activities of all other project partners, and provide overall technical oversight of programs and outputs of project contractors and short-term consultants (with the support of the PCU);
- To approve the annual audit plan for the project and, in accordance with UNDP standards and procedures, to convene an information and consultation meeting prior to the audit;
- As required, to participate in tripartite meeting or in any follow-up or reorientation sessions.

235. The *United Nations Development Programme (UNDP)* is the world development network established by the United Nations with a mandate to promote development in countries and to connect them to the knowledge, experience and resources needed to help people achieve a better life. Its main responsibilities related to the project are to:

- Designate a programme officer responsible for providing substantive and operational advice and to follow up and support the project's development activities;
- Advise the project on management decision making, as well as to guarantee quality assurance;
- Be part of the project's Steering Committee and other Committees or Groups considered part of the project structure;
- Administer the financial resources agreed in the budget / workplan and approved by the project's Steering Committee; monitor financial expenditures against project budgets / workplans; and oversee the provision of financial audits of the project;
- Participate in the recruitment and hiring of project staff, the selection and hiring of project contractors and consultants; and the appointment of independent financial auditors and evaluators;

- Co-organize and participate in the events carried out in the framework of the Project;
- Use national and international contact networks to assist the project’s activities and establish synergies between projects in common areas and/or in other areas that would be of assistance when discussing and analysing the project;
- Provide Support in the development and instrumentation of the project’s gender strategy.
- Ensure that all project activities, including procurement and financial services, are carried out in strict compliance with the procedures of the UNDP / GEF.

236. The *Project Steering Committee (PSC)* will provide guidance and oversight for the implementation of the project. The responsibilities of the PSC shall include, but not be limited to: (1) Review, approve and amend this project document, including the Monitoring and Evaluation (M&E) framework, the budget, and the implementation plan; (2) Monitor compliance with the Project’s objectives; (3) Discuss progress and identify solutions to problems facing any of the project’s partners; (4) Review and approve the Annual Work Plan (AWP) and the consolidated financial and progress reports; (5) During the life of the project, review proposals for major budget re-allocation such as major savings or cost increases, or for use of funds for significantly different activities; (6) Review evaluation findings related to impact, effectiveness and the sustainability of the project; (7) Monitor both the budget and the prompt delivery of financial, human and technical inputs to comply with the work plan; (8) Ensure the participation and ownership of stakeholders in achieving the objectives of the project; (9) Ensure communication of the project and its objectives to stakeholders and the public; (10) Approve the project communication strategy and public information plans; (11) Facilitate linkages with high-level decision making; (12) Convene ordinary meetings to consider the progress made by the project; (13) approve and supervise the hiring and work of project staff; and (14) Convene, if necessary, extraordinary meetings.

#### Project Steering Committee

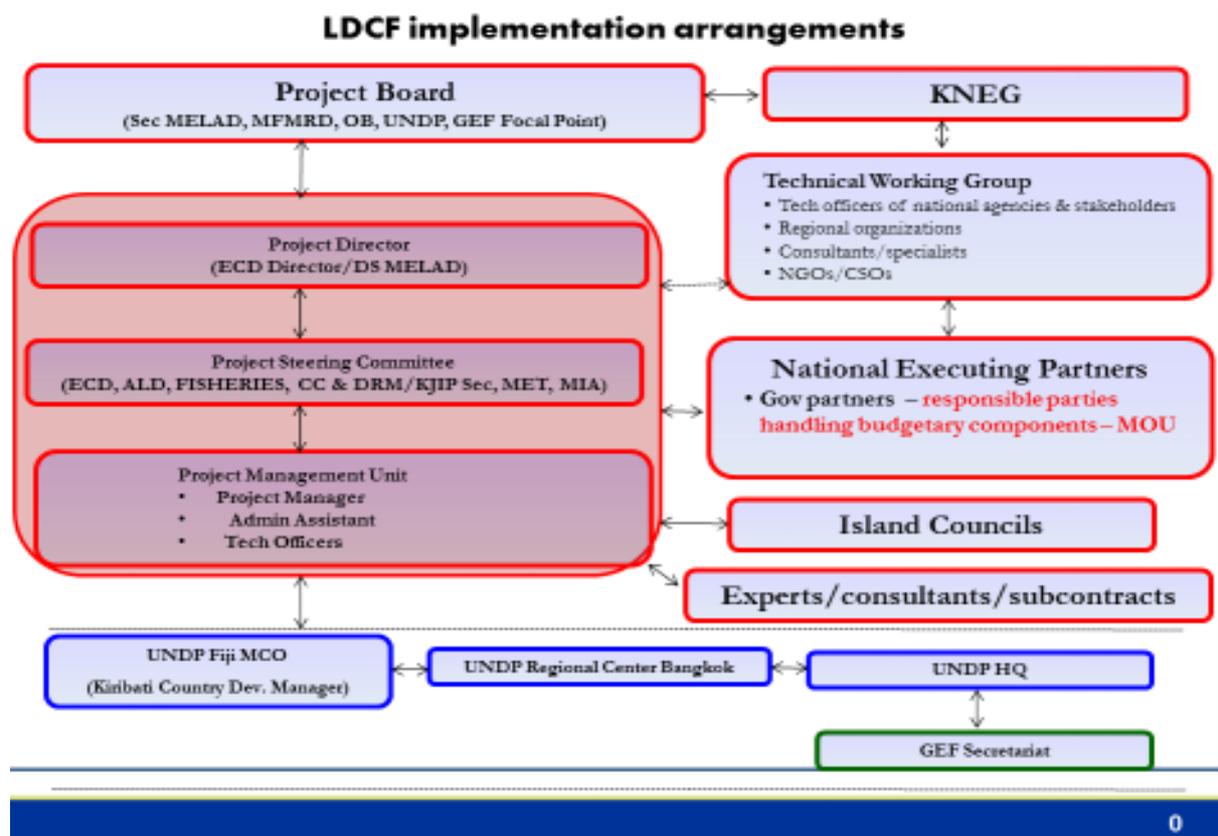
<i>Member Organization</i>	<i>Organization Representative (Job title/position)</i> <i>(e.g. Deputy Director General)</i>
Ministry of Environment, Lands & Agriculture Development	Director of Environment & Conservation Division (ECD) Director of Agricultural Development Deputy Secretary (Project Director)
Ministry of Fisheries & Marine Resources Development	Director of Fisheries Division Director of Policy and Development Division
Office of Te Beretitenti	Director of MET Services
Office of Te Beretitenti	KJIP Secretariat or CC & DRM Coordinator
Ministry of Internal Affairs	Director of Local Government Division/KNEG Rep

237. The PSC plays a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems with external bodies. In addition, it approves the appointment and responsibilities of the Project Coordinator and any delegation of its Project Assurance responsibilities. Based on the approved Annual WorkPlan, the PSC can also consider and approve the quarterly plans (if applicable) and also approve any essential deviations from the original plans. In order to ensure UNDP’s ultimate accountability for the project results, PSC decisions will be made in accordance to standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case consensus cannot be reached within the PSC, the final decision shall rest with the UNDP Project Manager.

238. The *National Project Director (NPD)*, a senior staff member of MELAD, will be responsible for oversight of the Project and carries overall responsibility and accountability. The NPD will keep the PSC updated on project advances and challenges as needed, and will report to the PSC on progress made and issues to be resolved. The NPD will establish and provide overall guidance to the PCU, and is responsible for overseeing the work undertaken by the PCU team. The NPD will submit relevant documentation to the PSC for endorsement.

239. Day-to-day management and coordination of the project will be under the supervision of the *National Project Manager* (PM), who will report to the NPD (National Project Director) and heads the PMU. The PMU will be located in ECD of MELAD. LDCF Implementing Arrangement is presented in Figure below. The PM will be responsible for the general management activities of the project, such as the preparation of consolidated annual work plans and technical and financial reports to be presented to the PSC, with the aim of ensuring that advances in relation to the goals and key milestones of the project are achieved as planned. Additional responsibilities of the PM will include: overall integration and follow-up of studies, research and project technical activities; assisting in the supervision of project implementation (liaising directly with the NPD); undertaking quarterly operational planning and providing guidance on day-to-day implementation; and ensuring institutional coordination among the project partner institutions and organizations. The PM will be supported in the administration of finance, budget, contracting, and other administrative matters by an Administrative Assistant.

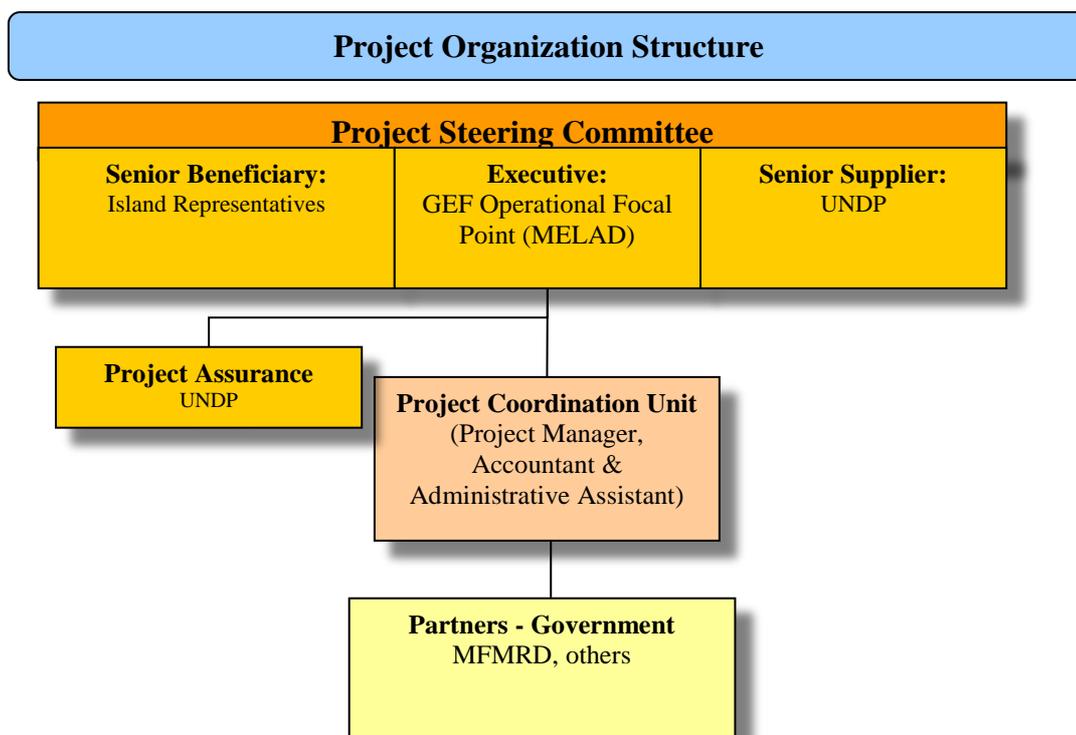
#### LDCF Implementing Arrangements



240. The figure below presents the project organogram, showing the relationships between the main institutions to be involved with project implementation and the bodies to be established by the project, as per UNDP project requirements:

- **Executive (MELAD):** individual representing the project ownership to chair the group.
- **Senior Supplier (UNDP):** Individual or group representing the interests of the parties concerned that provide funding for specific cost sharing projects and/or technical expertise to the project. The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project.
- **Senior Beneficiary:** Individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries.
- **Project Assurance (UNDP):** Supports the Project Board Executive by carrying out objective and independent project oversight and monitoring functions. The Project Manager and Project

Assurance roles should never be held by the same individual for the same project. A UNDP Staff member typically holds the Project Assurance role.



241. A 2-month Inception Phase will be used to carefully plan the whole project implementation process, culminating in the Inception Workshop. In addition, the necessary communication structures will be established between the main project components and partners to ensure optimal coordination and that key stakeholders are in full agreement with project objectives and hence committed towards the outcomes to be achieved.

*Responsible Party*

242. The project will be implemented under the NIM modality where the Implementing Partner is MELAD, following the standards and regulations of the United Nations Development Programme (UNDP), the implementing agency of this project. The Implementing Partner is the entity responsible for the project outcomes, and who is accountable for its management, including monitoring and evaluation activities, the achievement of outputs and effective use of resources. A single Implementing Partner is designated to lead each project. This Partner may establish agreements with other organizations or entities in order to support the achievement of the outputs envisaged in the project, this/these other/s instance/s is/are called: Responsible Party (ies). The Responsible Party is designated by the Implementing Partner to support the implementation, planning and / or monitoring of certain activities / components within the project's framework, using their technical skills and management services to support the achievement of project objectives. Project partners will assume responsibility for the different outcomes and outputs expected from the project, carrying out activities related to their actual capabilities in the field, ensuring effectiveness and efficiency of GEF funding. An Implementation Agreement will be signed between the Implementing Partner and the Responsible Party during the project inception phase.

*Financial and other procedures*

243. UNDP will act as the GEF Implementing Agency for this project and as such the responsibility for managing GEF funds will be administered by UNDP CO.

244. Based on the progress and results of the HACT micro assessment UNDP in the second year will utilize the Cash advance modality of funds to the PMU. At the end of each three-month period, the PMU will submit a report on activities and a financial report for expenses incurred along with a request for funds for the next period.

245. The financial arrangements and procedures for the project are governed by the UNDP rules and regulations for National Implementation (NIM). Financial transactions will be based on requests to UNDP from the National Project Director and/or Projects Manager for specific activities (included in work plans and financial reports) and for advances for petty cash where necessary and considering the difficulties of implementation in many remote areas. UNDP will during first year of project do payments through the direct payment modality and build capacity within MELAD to facilitate Cash advances. Based on the progress and results of the HACT micro assessment UNDP in the second year will utilize the Cash advance modality of funds to the PMU.

#### *Audit Clause*

246. The project will be audited in accordance with the UNDP Financial Regulations and Rules and applicable audit policies. An audit to the Project is an integral part of UNDP financial and administrative management within the framework of UNDP's accountability, internally and with regards to the GEF. The project will be audited to ensure that resources are administered in accordance with the financial regulations of the project document, workplan and budget. The project's budget should contemplate the resources needed to carry out the audit. The firm selected by UNDP Fiji, through a bidding process and subjected to a rigorous evaluation within the principles of transparency, neutrality and cost benefit will take over this exercise in accountability.

#### *Communications and visibility requirements*

247. Full compliance is required with UNDP's Branding Guidelines. These can be accessed at <http://intra.undp.org/coa/branding.shtml>, and specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other things, these guidelines describe when and how the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects need to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The GEF logo can be accessed at: [http://www.thegef.org/gef/GEF\\_logo](http://www.thegef.org/gef/GEF_logo). The UNDP logo can be accessed at <http://intra.undp.org/coa/branding.shtml>.

248. Full compliance is also required with the GEF's Communication and Visibility Guidelines (the "GEF Guidelines"). The GEF Guidelines can be accessed at: [http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08\\_Branding\\_the\\_GEF%20final\\_0.pdf](http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf). Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items.

249. Where other agencies and project partners have provided support through co-financing, their branding policies and requirements should be similarly applied.

## PART VI: MONITORING AND EVALUATION

250. The project will be monitored through the following M& E activities. The M& E budget is provided in the table below.

251. Project start: A Project Inception Workshop will be held within the first 2 months of project start with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible regional technical policy and program advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan.

252. The Inception Workshop will address a number of key issues including: (a) Assist all partners to fully understand and take ownership of the project. (b) Detail the roles, support services and complementary responsibilities of UNDP CO and RCU staff vis à vis the project team. (c) Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. (d) The Terms of Reference for project staff will be discussed again as needed. (e) Based on the project results framework and the relevant GEF Tracking Tool if appropriate, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks. (f) Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled. (g) Discuss financial reporting procedures and obligations, and arrangements for annual audit. (h) Plan and schedule Project Board meetings. Roles and responsibilities of all project organization structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 2 months following the inception workshop.

253. An Inception Workshop report is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

254. Project Implementation Work Plan: Immediately following the inception workshop, the project will be tasked with generating a strategic work plan. The work plan will outline the general timeframe for completion of key project outputs and achievement of outcomes. The work plan will map and help guide project activity from inception to completion. To ensure smooth transition between project design and inception, the inception workshop and work planning process will benefit from the input of parties responsible for the design of the original project, including as appropriate relevant technical advisors.

255. Quarterly: Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform. Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Note that for UNDP GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical). Based on the information recorded in Atlas, a Project Progress Reports (PPR) can be generated in the Executive Snapshot. Other ATLAS logs can be used to monitor issues, lessons learned etc. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

256. Annually (Annual Project Review/Project Implementation Reports (APR/PIR)): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements.

257. The APR/PIR includes, but is not limited to, reporting on the following: (a) Progress made toward project objective and project outcomes – each with indicators, baseline data and end-of-project targets (cumulative); (b) Project outputs delivered per project outcome (annual); (c) Lesson learned/good practice; (d) AWP and other expenditure reports; (e) Risk and adaptive management; (f) ATLAS QPR; (g) Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

258. Periodic Monitoring through site visits: UNDP CO and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project’s Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no more than one month after the visit to the project team and Project Board members.

259. Mid-term of project cycle: The project will undergo an independent Mid-Term Evaluation during mid-point of project implementation (project months 28 – 29). The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project’s term. The organization and terms of reference of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. This independent expert will be recruited at least six months prior to the planned commencement of the mid-term evaluation. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC). The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

260. End of Project: An independent Final Evaluation will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP and GEF guidance. The final evaluation will focus on the delivery of the project’s results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

261. The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC). The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

262. During the last three months, the project team will prepare the Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project’s results.

263. Learning and knowledge sharing: Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

M&E Work Plan and Budget

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Inception Workshop and Report	Project Manager UNDP CO, UNDP GEF GEF operational / political focal points	Indicative cost: \$50,000	Within first two months of project start up

<b>Type of M&amp;E activity</b>	<b>Responsible Parties</b>	<b>Budget US\$ <i>Excluding project team staff time</i></b>	<b>Time frame</b>
Measurement of Means of Verification of project results.	Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on <i>output and implementation</i>	Oversight by Project Manager Project team	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	Project manager and team UNDP CO UNDP RTA UNDP EEG GEF operational focal point	\$ 10,000	Annually
Periodic status/ progress reports	Project manager and team	None	Quarterly
Mid-term Evaluation	Project manager and team UNDP CO UNDP RCU External Consultants (i.e. evaluation team) GEF operational focal point	Indicative cost: \$50,000	At the mid-point of project implementation.
Final Evaluation	Project manager and team UNDP CO UNDP RCU External Consultants (i.e. evaluation team) GEF operational focal point	Indicative cost: \$50,000	At least three months before the end of project implementation
Project Terminal Report	Project manager and team UNDP CO Local consultant GEF operational focal point	None	At least three months before the end of the project
Audit	UNDP CO Project manager and team	Indicative cost – per year: \$5,000	Yearly
Visits to field sites	UNDP CO UNDP RCU (as appropriate) Government representatives GEF operational focal point	For GEF supported projects, paid from IA fees and operational budget	Yearly
<b>TOTAL indicative COST</b> <i>Excluding project team staff time and UNDP staff and travel expenses</i>		US\$ 185,000	

## PART VII: LEGAL CONTEXT

264. This document together with the CPAP signed by the Government and UNDP incorporated by reference constitutes together a Project Document as referred to in the Standard Basic Assistance Agreement (SBAA) and all CPAP provisions apply to this document.

265. Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

266. The implementing partner shall put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried; and, assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

267. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

268. The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP/GEF hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

269. The UNDP Resident Representative in Fiji is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by the UNDP Regional Coordination Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:

- Revision of, or addition to, any of the Annexes to the Project Document;
- Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
- Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and
- Inclusion of additional Annexes and attachments only as set out here in this Project Document.

## **PART VIII: ANNEXES**

- Annex 1: Consultants to be hired
- Annex 2: Institutional and Policy Context Extended Summary
- Annex 3: Investments (Baseline) Extended Summary
- Annex 4: UNDP Environmental and Social Screening
- Annex 5: Capacity Development Scorecard Baseline
- Annex 6: Co-financing Letters
- Annex 7: GEF Tracking Tool

**Annex 1: Consultants to be hired**

Position Titles	\$/Person Week	Estimated Person Weeks	Tasks to be Performed
<b>For Project Management</b>			
Local			
National Project Coordinator	\$ 500	240	<p>Full-time position. Experienced project coordinator with a technical background in ecosystem conservation programming. The Project Coordinator is the certifying authority responsible for overall management and implementation of the project on a day-to-day basis and for effective and efficient use of resources, as well as for facilitating information to the stakeholders and board. This person will provide oversight and technical support, direction and leadership for all project activities. This person will contribute as needed to the completion of project outputs. The candidate will be an expert in ecosystem conservation principles and practices with an emphasis upon food security and climate change adaptation. The ideal candidate will have a background in community-based management approaches.</p> <p>Deliver results and manage funds in line with the work plan approved by management body; Analyze and evaluate achieved results regularly to ensure that the project is meeting the target beneficiaries' needs, and communicating them to management body; Record and resolve project issues occurring during the implementation within the tolerance level initially defined by management body; Report issues to management body with recommendations for solutions to project issues that exceed the defined tolerance level; Discuss and deal with local and national authorities on matters pertaining to activities described in the project document; Ensure timely preparation and submission of yearly and quarterly project work plans and reports; Lead the recruitment process of the necessary local experts in the areas identified in the project document in accordance with UNDP rules and regulations; Collect, register and maintain information on project activities by reviewing reports and through firsthand sources; Advise all project counterparts on applicable administrative procedures and ensures their proper implementation.</p>
Administrative Assistant	\$ 300	240	<p>Full-time Position. Acts as Administrative Assistant. This is a full-time position. The assistant will provide administrative support to the Project Manager in UNDP-GEF reporting, financial management, and logistical support. Collect, register and maintain all information on project activities; Contribute to the preparation and implementation of progress reports; Monitor project activities, budgets and financial expenditures; Advise all project counterparts on applicable administrative procedures and ensures their proper implementation; Maintain project correspondence and communication; Support the</p>

			preparations of project work-plans and operational and financial planning processes; Assist in procurement and recruitment processes; Assist in the preparation of payments requests for operational expenses, salaries, insurance, etc. against project budgets and work plans; Follow-up on timely disbursements by UNDP CO; Receive, screen and distribute correspondence and attach necessary background information; Prepare routine correspondence and memoranda for supervisor's signature, check enclosures and addresses; Assist in logistical organization of meetings, training and workshops; Prepare agendas and arrange field visits, appointments and meetings both internal and external related to the project activities and write minutes from the meetings; Maintain project filing system; Maintain records over project equipment inventory; Provide support to management body, project manager, and others to make certain all financial records are properly maintained and support necessary reporting requirements. Perform other duties as required.
International			
N/A			
Justification for travel, if any: Significant travel will be required to various project sites to monitor and support implementation activity. Some regional travel may be required to participate in activities promoting greater cooperation on landscape/seascape level conservation initiatives.			
<b>For Technical Assistance</b>			
Local			
National fisheries policy, conservation, and training expert	\$ 500	240	Responsible for providing overall technical support for the implementation of all activities and outputs related to fisheries conservation, including both Components 1 and 2. The national expert will have extensive knowledge of local fisheries conditions and be capable of providing technical support and liaison between project technical staff, government counterparts, and local/national stakeholders. The expert will have the ability to facilitate and lead workshops, draft required technical reports, and generally support the completion of related technical activities and outputs.
National agriculture policy, conservation, and training expert	\$ 500	240	Responsible for providing overall technical support for the implementation of all activities and outputs related to agriculture management, including both Components 1 and 2. The national expert will have extensive knowledge of local agriculture conditions and be capable of providing technical support and liaison between project technical staff, government counterparts, and local/national stakeholders. The expert will have the ability to facilitate and lead workshops, draft required technical reports, and generally support the completion of related technical activities and outputs.

National Health and Nutrition Expert	\$ 500	96	Responsible for providing support for the generation and implementation of tracking tools related to food security, health and nutrition at the pilot site level. The national expert will work closely with the international expert to generate a rigorous methodology for understanding the nexus between conservation of island resources and long-term food security. The national expert will have extensive knowledge of local health care conditions and be capable of providing technical support and liaison between project technical staff, government counterparts, and local/national stakeholders. The expert will have the ability to facilitate and lead workshops, draft required technical reports, and generally support the completion of related technical activities and outputs.
National M&E Specialist	\$ 500	12	Primary duty will be supporting the completion of the project's mid-term and final evaluation. TOR's to be developed according to M&E plan.
<b>International</b>			
Senior Technical Advisor	\$ 3,000	39	Responsible to provide technical support for all project outcomes and activities. Will be knowledgeable of and have hands-on experience with design of management frameworks community-based conservation management regimes. Will have extensive working knowledge of issues related to small island developing states and fisheries conservation. Will have at least 15 years experience with GEF projects, including project management, design, and/or evaluations. Will support training programs, completion of strategies, capacity building programs and other project initiatives as required. Will back-stop national project management team to provide technical assistance with project implementation, including project inception, support for on-going monitoring/evaluation, development and monitoring of strategic project implementation work-plan.
International Natural Resource Monitoring Expert	\$ 3,000	12	Primary international expert responsible for capacity development and emplacement of AMAT tool. (Outputs 1.1 and 2.1) The expert will have extensive working knowledge with the generation and management of data/information related to climate change adaptation, food security, agriculture and fisheries for small island developing states. The expert will have the proven ability to design and implement information management systems capable of supporting informed decision-making.
Health and Nutrition Expert	\$ 3,000	10	Responsible for supporting the capacity building and monitoring related to the generation of information required to inform decision-making regarding health/nutrition at the pilot site level. The expert will assist government to create and implement a food security monitoring tool to inform the AMAT. The expert will have extensive experience with building knowledge regarding rural health/nutrition. The expert will have relevant experience working with small island developing states.

Island Natural Resource Conservation Expert	\$ 3,000	52	Responsible for supporting capacity building and implementation of the ecosystem-based adaptation guidelines. (Outputs 1.2, 2.2, and 2.3). The expert will have proven working knowledge with facilitating the completion of capacity assessments, community-based spatial planning, and support for national and local training programs. The expert will have a strong technical background in ecosystem-based planning and management. The expert will have proven field experience providing support to small island developing states with the generation and implementation of climate change vulnerability assessments, community-based management, and ocean/coastal conservation.
Coastal Zone Fisheries Law and Policy Expert	\$ 3,000	42	Responsible for support the design and implementation of improved fisheries conservation regulations/by-laws. (Outputs 1.4 and 2.5). This person will have proven experience with the generation of conservation law/policies related to coastal zone fisheries. The expert will have experience with building the capacities of national and local decision-makers to formulate and adopt improved regulatory frameworks. The expert will have proven experience with the creation of community-based natural resource management regulations/policies designed to build ecosystem resilience.
Community-based Extension Services Expert	\$ 3,000	46	Responsible for providing technical support for the implementation of extension services capacity building. Outputs 1.5 and 2.6. The expert will have proven experience with the development and implementation of field school training related to fisheries conservation. The expert will have proven international experience with building extension officer training programs and supporting “on-the-ground” in-service training support.
International M&E Specialists	\$ 3,000	14	Conduct project final and mid-term evaluation. TOR's to be developed according to M&E plan.
Justification for travel, if any: Significant travel will be required to various project sites to monitor and support implementation activity. Some regional travel may be required to participate in activities promoting greater cooperation on landscape/seascape level conservation initiatives.			

## Annex 2: Extended Summary of Project Related Institutional and Policy Context

### 2.1 Institutional Management/Decision-Making Framework

Institution	Responsibilities
Ministry of Environment Lands & Agriculture (MELAD)	The Environment and Conservation Division (ECD) forms part of the Kiribati Government's Ministry of Environment, Lands and Agricultural Development. Its mandate is to safeguard the natural environment upon which life depends and to protect human health. Under the Environment Act, the ECD of the MELAD is responsible for safeguarding the environment.
Ministry of Internal Affairs (MIA)	MIA is responsible for Island Council needs and provides support in terms of staff including the Clerk, Treasurer and Island Project Officer. It monitors the Local Government Act which governs how the Island Councils are run. It receives, appraises and approves Island Council priority projects for Government or Donor funding and provides annual support grants to support their budget. MIA has a specialised Local Government Division that provides training support to Council Staff, Mayors and Councillors. For other organizations of Government and others, it serves as the main link and provides liaison assistance and for any undertaking that involves visits etc., it is the first point of contact to go through.
Ministry of Fisheries and Marine Resources Development (MFMRD)	MFMRD is mandated to look after the natural resources of the country including marine, fisheries and mining. Its work is guided by the Fisheries Act of as well as the National Fisheries Policy developed for implementation. Its organization is structured to specifically handle policy and administration, fisheries and mineral resources for which in 2014, a total approved operational budget of A\$2,156,516.00. The Development Projects budget for 2014 amounts to A\$3,605,994 to handle the Fisheries Observer Program for Fisheries Development in Outer Islands, and other Development Projects such as Waa n Oo in the Outer Islands. These projects exist to help enhance domestic capacities to address food security issues. Other development are in the area of policy and planning as well as staff, infrastructure (office etc) development and system capacity strengthening of the Office. Donor partners for donor funded projects of the Ministry that have contributed include AusAID, FFA, JICA, EU, SPC and few more. An estimated total amount A\$690,106.
Ministry of Finance and Economic Development (MFED)	The MFED manages government accounts. The Ministry develops fiscal policies and plans. Through the National Economic Planning (NEP) Office, MFED provides secretarial and advisory services to the Development Coordinating Committee (DCC) whose role includes approval of development projects.
Office of Te Beretitenti (President)	Whilst MELAD included the bulk of the technical expertise on climate change, it lacked institutional leverage to influence the programmes of other vital sectors, such as public works, internal affairs, fisheries and natural resources. This was recognised both within Kiribati, as well as regionally. During early consultations on the Kiribati Adaptation Programme (KAP-I), it was therefore decided that the Office of the President would chair the KAP's National Adaptation Steering Committee, and the MFED would execute the project. This arrangement worked well in mainstreaming adaptation into economic planning, but it worked less well in mobilising the technical experts necessary to prioritise adaptation investments.

	<p>The situation in 2012 sees the KAP Steering Committee re-established under a new name, National Adaptation Steering Committee (NASC), under the Office of the President. The National Adaptation Steering Committee has been chaired by Secretary of OB and co-chaired by the National Strategic Policy Unit of OB. The Kiribati National Expert Group is also chaired and co-chaired by the same. The KAP Project Management Unit is the Secretariat for the Steering Committee. The NASC oversees the joint work programme for the NAPA and KAP. The existing NAPA team became the Climate Change Study Team, the technical team for the unified programme, reporting to the steering committee. Office of the President has the responsibility for the overall supervision of the unified climate work and disaster risk management. The Strategic Risk Management Unit within the Office of the President has as part of its mandate to develop and co-ordinate the national policy on climate change, including the co-ordination of implementation at the broad national level. The National Framework on Climate Change and Climate Change Adaptation outlines the broad functions of the Strategic Risk Management Unit and provides national guidance in addressing the issue of climate change.</p>
Others	<p>National Focal Points for the Environment are located within the Ministry of Foreign Affairs &amp; Immigration, Ministry of Environment Lands &amp; Agricultural Development in the ECD. Ministry of Internal Affairs is responsible for outer island development in close consultation with Island Councils (Ics) and also provides advisory and support service for the Ics</p>
Island Councils	<p>At local government level, Island Council is the authority for developments on the Islands. Local Government Act provides for their legality and each Island has its own Bye Law to provide legal back up for their activities. Fisheries Act 2010 empowers Island Councils for 3 nautical miles within which coastal fisheries are found.</p>

## 2.2 Project Relevant Policy and Planning Framework

Title of Policy, Strategy, or Plan	Adoption Date	Description/Assessment of relevant strategy, policy or plan
<b>National</b>		
Kiribati Development Strategy (KDP)	2012 – 2015	<p>4-year national development plan which make policy guidelines for various sectors of government (Ministries).</p> <p>The KDP has six broad key policy areas (KPAs). Climate change is incorporated into KPA 4 on environment. The key objective of KPA 4 is to facilitate sustainable development by mitigating the effects of climate change through approaches that protect biodiversity and support the reduction of environmental degradation by the year 2015.</p> <p>Another important document is the Kiribati Development Plan (2008–2011) which aims to manage the potential adverse consequences of climate change for national development. In addition, Kiribati’s National Water Resource Policy, completed</p>

		in 2008, integrates consideration of the need to adapt to the impacts of climate change.
Initial National Communication	1999	<p>The Kiribati Government's Initial National Communication (INC) to the United Nations Framework Convention on Climate Change (UNFCCC), released in 1999, describes the vulnerabilities of the country, with a focus on the potential adverse impacts of sea level rise. The INC describes the impacts of climate change which include brackish water invasions, coastal erosion and reduced groundwater quality and quantity. Throughout the INC, specific attention is paid to merging traditional practices in agriculture and extreme weather event preparation with increased access to scientific information.</p> <p><u>National Climate Change Priorities</u></p> <p>According to Kiribati's Initial National Communication (1999), the following is a list of projects planned by the Kiribati government to address its adaptation needs, including:</p> <ul style="list-style-type: none"> <li>• Establishment of a climate change and sea level monitoring centre.</li> <li>• Formation of an integrated coastal zone management plan.</li> <li>• Public awareness programming.</li> <li>• Education and training program.</li> <li>• Research and information dissemination.</li> <li>• Technology transfers program.</li> <li>• Water supplies program.</li> <li>• Alternative energy source program.</li> </ul>
Climate Change Adaptation Policy Note & CC Adaptation Strategy	2005	<p>The strategy released in 2005 identified 8 priority areas for action including: (1) integration of climate change adaptation into national planning and institutional capacity; (2) use of external financial and technical assistance; (3) population and resettlement; (4) government and services; (5) freshwater resources and supply systems; (6) coastal structures, land use and agricultural production; (7) marine resources; and (8) survivability and self-reliance<sup>1</sup>.</p> <p>The National Climate Change Adaptation Strategy 2005 aims to implement the government's policy on adaptation to climate change, which states that:</p> <ul style="list-style-type: none"> <li>• Kiribati people should be mentally, physically and financially well prepared to deal with whatever climatic trends and events the future may hold.</li> <li>• This should be achieved through a nationally coordinated, participation-based adaptation programme carried out by official and private agencies.</li> <li>• External financial assistance should be obtained to meet the costs of the national adaptation programme.</li> </ul>
NAPA	2007	<p>National Adaptation Programme of Action (NAPA) 2007, Kiribati builds upon these observations to identify nine key areas in which adaptation action is required. These nine key areas (as detailed in the 2007 NAPA) include implementation in the areas of:</p> <ul style="list-style-type: none"> <li>• Freshwater—A water resources adaptation project, and a well improvement project to improve public health;</li> </ul>

<sup>1</sup>Government of Kiribati (2005). Government of Kiribati Climate Change Adaptation Strategy. Retrieved from <http://www.environment.gov.ki/CC/KirCCA%20Strategy%202005.pdf>

		<ul style="list-style-type: none"> <li>• Coastal zones–A coastal zone management program for adaptation;</li> <li>• Risk reduction and monitoring–A strengthening of climate change information and monitoring program; upgrading of coastal defences and causeways; and upgrading of meteorological services;</li> <li>• Marine resources–Coral monitoring, restoration and stock enhancement; and</li> <li>• Agriculture–Agricultural food crops development. <sup>2</sup></li> </ul>
Kiribati’s National Water Resource Policy	2008	The vision of the Government of Kiribati (GoK) for the water sector. A framework for coordinated action to improve the supply of safe, adequate and financially, technically and environmentally sustainable fresh water services to rural, outer island and urban communities.
Kiribati Integrated Environment Policy	2012	The ECD has several thematic areas under its operation as identified in the Kiribati Integrated Environment Policy. These include: <ul style="list-style-type: none"> <li>• Climate Change</li> <li>• Island Biodiversity Conservation and Management</li> <li>• Waste Management and Pollution Control</li> <li>• Resource Management</li> <li>• Environmental Governance</li> </ul>
National Climate Change and Climate Change Adaptation	2012	Aims to better coordinate adaptation responses based on the 2005 CCA Strategy taking into account new science and issues, and have the following priorities areas: <ol style="list-style-type: none"> <li>1. Mitigation</li> <li>2. Integration of Climate Change and Climate Change Adaptation into national planning and institutional capacity</li> <li>3. Population and resettlement</li> <li>4. Governance and services</li> <li>5. Survivability and self-reliance</li> </ol> <p>These goals are to be achieved through:</p> <ul style="list-style-type: none"> <li>• The Government of Kiribati developing the Joint Implementation Plan on Climate Change Adaptation and Disaster Risk Management, and to integrate climate change into the KDP (2012–15).</li> <li>• Securing future assistance to support implementation of the Joint Action Plan.</li> <li>• GoK (through KAP III) to improve community engagement processes to improve community ownership of climate change infrastructure.</li> <li>• Mainstreaming climate change adaptation into national planning and budgeting.</li> </ul>
National Disaster Risk Management Plan (NDRMP)	2012	The national disaster risk management plan is drawn based on the National Disaster Act 1983 identifying policy and priority actions for Disaster management in Kiribati. Broadly, it has the following key policies and actions: <ul style="list-style-type: none"> <li>•</li> </ul>
Kiribati Joint National Action Plan on Climate Change and Disaster Risk	2014	The Government of the Republic of Kiribati, following consultation with regional technical advisory organizations, initiated the process of developing a Kiribati Joint National Action Plan on Climate Change and Disaster Risk Management (KJIP) in 2011. This document is designed to complement the

<sup>2</sup>Dohan, Rosemary; Hove, Hilary; Echeverría, Daniella; Hammill, Anne; Parry, Jo-Ellen. (2011) “Review of Current and Planned Adaptation Action: The Pacific.” Adaptation Partnership / International Institute for Sustainable Development, p. 71.

Management (KJIP)		<p>National Disaster Risk Management Plan (GoK 2012b) and the National Framework for Climate Change and Climate Change Adaptation (GoK 2013). By identifying tangible, on-the-ground actions for resilience and measures that enable the Government to facilitate these, the plan will guide the implementation of these complementary policies in an integrated approach.</p> <p>The main rationale for this approach is that a systematic and integrated plan, where tangible actions are identified, will maximise the efficiency and effectiveness of existing capacities and resources as well as ensuring new initiatives are well targeted and have maximum impact. In addition, the development of this plan was seen as a key vehicle for integration of climate change and disaster risks into all sectors, thus promoting a holistic approach that involves the cooperation of Government, civil society and the private sector.</p> <p>The KJIP is leading in advocating and operationalising an integrated approach to including climate change and disaster risks in national and community development planning, implementation, monitoring and evaluations.</p> <p>The Government of the Republic of Kiribati sees the KJIP as a means to prioritise actions on climate change and related disaster risks that are highlighted in national communications (see also chapter 3.3) and sector policies and action strategies impacted by climate change and disaster risks.</p> <p>The KJIP identifies the following 12 major strategies:</p> <ol style="list-style-type: none"> <li>1. strengthening good governance, policies, strategies and legislation;</li> <li>2. improving knowledge and information generation, management and sharing;</li> <li>3. strengthening and greening the private sector, including small-scale business;</li> <li>4. increasing water and food security with integrated and sector-specific approaches and promoting healthy and resilient ecosystems;</li> <li>5. strengthening health service delivery to address climate change impacts;</li> <li>6. promoting sound and reliable infrastructure development and land management;</li> <li>7. delivering appropriate education, training and awareness programs;</li> <li>8. increasing effectiveness and efficiency of early warnings and disaster and emergency management;</li> <li>9. promoting the use of sustainable, renewable sources of energy and energy efficiency;</li> <li>10. strengthening capacity to access finance, monitor expenditures and maintain strong partnerships;</li> <li>11. maintaining the existing sovereignty and unique identity of Kiribati; and</li> <li>12. enhancing the participation and resilience of vulnerable groups.</li> </ol>
Kiribati Fisheries Policy	2013-2015	Developed to portray short to medium and long-term strategic objectives that will enhance responsible fisheries with emphasis on the need to support, improve and sustain the people's livelihood, food security and economic growth today and future generations. It identifies both short and long term strategic

		actions for the next 12 years, beginning with short term priority actions for implementation in the first 4 years with relevant partners (Government and donor). Policy implementation plan needs more work as well Fisheries Management Plans.
Fisheries Management Plan		Species specific management plans have already been drafted such plans for snapper, conch shell, ark shell, giant clams and bone fish. Currently a new approach was adopted to look at a amalgamated coastal fisheries plan and a regulation. The plan spelt out specific measures in addressing the management and conservation of such coastal resources. The plan yet to be finalized with the regulation and has to be widely nationally consulted.

### 2.3 Project Relevant Legal/Regulatory Framework Table

Law or Regulation Title	Adoption Date	Description/Assessment of Law/Regulation
<b>National</b>		
Environment Act	2007	<p>An Act to provide for the protection, improvement and conservation of Environment of Kiribati putting in place mechanisms that will ensure it is protected and that developments in particular economic activities are carried out within these established mechanisms. Specifically, it prescribes laws on pollution, protected areas and species, conservation areas, enforcement powers, environmentally significant development, and environment licences.</p> <p>The government is mindful of the fact that environment protection goes hand in hand with economic development and this is reflected in the Act.</p> <p>Kiribati is also a party to certain international and regional convention relating to treaties. References to Kiribati international commitment is also reflected in the Act.</p>
National Disaster Act	1993	Provides for disaster mitigation and preparation. The Office of Te Beretitenti is responsible for the Act's implementation and monitoring. The National Disaster Council is to assist during emergency operations. The National Disaster Management Office exists support implementation. The Act requires each Island Council to establish a "Disaster Committees".
Fisheries Act	2010	The Act provides for the promotion of sustainable management of fishery resources and protection of fish stocks and marine environment empowering the Minister to designate a 'fishery' area, for national interest, and for management and conservation requirements. It sets out conditions, fees, etc for local foreign fishing license and for fish processing license, aquaculture operations, fishing for scientific purposes, and prohibited activities. It also empowers Island Councils to impose penalties to those that do not comply with any of its bye laws relating to fishing in its area and taking of its fish and marine products.
<b>Island</b>		

By-Laws	On-going	As noted, all Island Councils have the authority to pass regulatory frameworks for the management of coastal zone resources. These by-laws vary from island to island. The by-laws and associated regulatory systems will be critical to project implementation success.
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### Annex 3: Description of Relevant Sector Investments (Baseline)

Project Title	Principal Donor Agency	Year	Budget US\$ (approx.)	Objective and Primary Activities
<b>Summary of Relevant Government Projects</b>				
Ministry of Environment, Lands and Agriculture Development (MELAD)	GoK	Annual	US\$ 900,000	The government is undertaking a number of actions to bolster food production and availability in the country. This includes some work to support agriculture research and extension. Major activities have included screening salinity tolerant giant swamp taro cultivars and promotion of production of nutrient rich foods, including local fruits and vegetables.
Ministry of Fisheries and Marine Resource Development	GoK	2014 - 2016	A\$2,244,846	The Government provides funding to support Fisheries development and improved management as well as capacity building for the Islands amongst which are programs concerning Island Fish Centers, coral reef monitoring, fisheries management marine resources management, research, development of plans, staff and community training and few more.
Ministry of Fisheries and Marine Resource Development	GoK	Annual	US\$ 28,000	Under the milkfish program, the GoK covers freight cost from Tarawa to Outer Islands and support for postharvest and value adding training such as smoke fish, tuna jerky and other forms that could increase their income.
OB	GoK	Annual	\$548,572	Strategic National Policy
MELAD	GoK	Annual	\$373,836	Improving the Environment
MFMRD	GoK	Annual	A\$1,358,837	Fish Centers: The key objective of this project is to enhance and increase income generation for local fisherman and the people as a whole. Main activities involve providing building and cool storage for fish and ice to fishermen. For long/big Islands, a truck is also provided for required transportation.
Waa n Oo	GOK	Annual	A\$1,242,609	The long term key objective of this project is to reach out to the individual fishing household in providing affordable fishing canoes to enhance food security and promote economic growth within the fishery sector and in outer islands mainly. It will assist to ensure i) Sustained traditional fishing practices and knowledge of Kiribati locals; ii) Improved and increased income earning to the people of the outer-islands; and iii) Enhanced sustainable livelihood of the locals on the outer-islands
<b>Summary of Relevant Donor Projects</b>				
Outer Island Water and Food Project	IFAD	2013 – 2017	US\$3.9 million	The project has four immediate target islands of the Gilberts Group (Abaiang and Abemama in the north and Beru and Tabiteua North in the south). The project will eventually cover twelve islands. This is an Agriculture Project. The Goal of the project is “People living in outer island communities have healthy sustainable livelihoods”. The project has three components namely: (i) Component 1 – Community Empowerment, which comprises of sub-component 1.1: Community Development Planning (US\$ 577,122) and sub-

Project Title	Principal Donor Agency	Year	Budget US\$ (approx.)	Objective and Primary Activities
				<p>component 1.2: Increasing the use of nutritious foods in household diets. (US\$ 91,698); (ii) Component 2 – Household Water (\$1,419,912); and (iii) Component 3 – Local Food (US\$1,321,805), with two sub-components: sub component 3.1 – Increased outputs of all local foods, and sub component 3.2 – Value Chains.</p> <p>Technical support as well as planting and farming tool support will be provided to enhance growth of local food crops (cassava, sweet potato, pandanus, breadfruit, pawpaw, banana, pumpkin, fig tree, hybrid coconut, drum stick, buka), vegetables (nambele, kangkong, spinach).</p>
Coastal Community Adaptation Project	USAID	2012 - 2015	US\$ 4 million	<p>6 Pacific countries regional project. The project will be implemented in two selected communities in Kiribati. It will work closely with the Agriculture Division through the Ministry of Environment, Lands and Agriculture (MELAD). The amount allocated to Kiribati and detailed actions are under discussion. The project has three outcomes (i) Improved understanding of present and future climate related constraints on sustainable food production in various Pacific Island agriculture ecosystems, and the adoption of innovative adaptation responses that contribute to maintaining or increasing food security: this will include implementation of capacity building, on-farm training, and pilot demonstration activities in selected communities in each country; the application of GIS land-use, forestry and soil mapping techniques (including training and national capacity building activities) as a tool to guide decision making; and the production of support materials and knowledge products that can support the wider application and scale-up of successful techniques across the region. (ii) Strengthened national and community capacity to build food security and respond proactively to climate change and climate variability: this will include engagement of farming communities, and national level counterparts, in project activities; development and implementation of appropriate adaptation response options that reduce the risks to food production and agricultural ecosystems (iii) Improved integration of successful approaches into national and sector climate change adaptation strategies : this will include engaging national and local counterparts in project activities, providing training and technical support the integration of successful approaches into sector wide and national adaptation strategies and programmes; the development of national capacity to manage GIS systems to support adaptation decision making.</p>
Program on Coping with Climate Change in the Pacific Island Region	GIZ / SPC	2011 – 2015	19.2 million Euros Kiribati + 11 other PICs	<p>Implementing numerous KJIP priorities, primarily on Abaiang and Tarawa. Applying the “whole island” approach. The overall objective of the program is as follows: <i>“The capacities of regional organizations in the Pacific Islands region and its member states to adapt to</i></p>

Project Title	Principal Donor Agency	Year	Budget US\$ (approx.)	Objective and Primary Activities
				<i>climate change and mitigate its causes are strengthened.</i> ” The project consists of 5 components namely: Component 1: Strengthening regional advisory and management capacity; Component 2: Mainstreaming climate considerations and adaptations strategies; Component 3: Implementing adaptation and mitigation measures; Component 4: Sustainable energy management; and Component 5: Climate change and education (focusing primarily on school children).
Improving transport infrastructure in Kiribati to improve its linkages to the wider world.	JICA	2013	Aus\$ 630,000	This project aims at strengthening trade and acquisition of food materials from outside of the country, helping in promoting food security through improved access. The Government of Japan is supporting the expansion of the Betio Port. A grant of JPY 52 million (Aus\$630,000.00) was made available for the initial design and following completion of detailed design, further aid assistance of JPY 3 billion and 52 million (approximately Aus\$36 million) is expected to be provided. This is expected to lead to improved capacity of the port to deal with an increased volume of imported containerized cargo transported by medium-sized container ships.
Upgrade Cassidy Airport Runway.	New Zealand	??	NZ\$13 million	This airport is located north of Banaba, a settlement on Kiritimati (also known as Christmas Island). This is being channeled through the Kiribati Aviation Infrastructure Investment Project, led by the World Bank.
Fisheries Training Strengthening Programme	New Zealand	2013 - 2014	US\$ 480,000	This project is designed to develop Kiribati fisheries training capacity and infrastructure in order to increase international and domestic employment and fisheries revenue. The project focuses upon pelagic fish. Activities include the following: Fisheries Training Centre Redevelopment which includes the designing and upgrading of facilities, equipment, curriculum and teaching resources and Fisheries management and Employment which includes the whole government approach to development and delivery of fisheries training, observers and officers trainings and the development of the Ministry of Fisheries and marine resources (MFMR) foreign fishing access negotiation and management capacity.
Kiribati-Australia Fisheries Performance Incentive Initiative	AusAID	2011	US\$1,262,500	This project is designed to assist Kiribati to maximize return from the vast tuna fishery within the EEZ. The project assists with increasing compliance with permitting, including support for monitoring by both patrol and satellite vessel monitoring.
Consultations to Develop Kiribati National Fisheries Policy	AusAID	2012	US\$53,241	As per title. Worked primarily to enhance regulation of EEZ and tuna fishery.

Project Title	Principal Donor Agency	Year	Budget US\$ (approx.)	Objective and Primary Activities
Environmentally Safe Aggregate for Tarawa Extraction	EU	2011 – 2013	US\$ 5,250,000	As per title.
Support of Implementing Pacific Tuna tagging Activities	SPC	2012	US\$15,994	As per title.
VMS Operational Fund	FFA	2012	US\$8,894	As per title.
Observer Programme	NZ	??	US\$25,311	As per title. Implemented by MLPD.
Rainwater harvesting Project	NZ	2013	US\$33,119, 541	As per title. Implemented by MLPD.
Trial Root Crop Farm	NZ	(2012)	US\$5,000	As per title. Implemented by MLPD.
Fisheries Training	NZ	??	US\$480,000 US\$1,000,000	As per title. Implemented by MLHRD.
Integrating Global environmental priorities into national policies and programmes	UNDP/GEF	2014 - 2017	US\$ 500,000	This Cross Cutting Capacity Development project will assist Kiribati to establish an Environmental Management Information System (EMIS), and to implement Environmental Indicators and Compliance Monitoring System (CMS). Such systems can help in maintaining environmental health and productivity in the country, and hence will be directly relevant to ecosystems productivity (and hence food production).
WASH	UNICEF/EU	??	US\$ 6,000,000	The project includes: (i) Dry toilets, (ii) Water monitoring for ground water (wells) of all islands; and (iii) Addressing lagoon pollution through improved sanitation
Maternal and Neo-Natal Health Project	UNFPA	??	??	Working with Ministry of Health Opportunity to coordinate tracking of project indicators.
<b>Summary of Recent and On-going GEF Projects</b>				
Kiribati Adaptation Project III	World Bank LDCF Aus-AID JICA GFDRR <sup>3</sup>	2011 – 2016	US\$ 9,500,000	The project consists of three components namely (i) Component 1: Improve Water Resource and Management; (ii) Component 2: Increase Coastal Resilience; and (iii) Component 3: Capacity Strengthening to Manage the Effects of Climate Change and Natural Hazards. The project is helping Kiribati to protect the quality of scarce freshwater supplies from the underground fresh water lens. As noted in the project baseline, a number of initiatives are planned or under preliminary implementation in Kiribati. This project will build on these and ensure coherence and effective coordination. This will specifically include strong coordination with the World Bank – LDCF project KAP III. This project is supporting water resources

<sup>3</sup> Global Facility for Disaster Reduction & Recovery

<b>Project Title</b>	<b>Principal Donor Agency</b>	<b>Year</b>	<b>Budget US\$ (approx.)</b>	<b>Objective and Primary Activities</b>
				management and rehabilitation of mangroves. Both activities are highly important adaptation measures for fisheries and agriculture.
Ridge to Reef	FAO-GEF	2015 - 2020	US\$ 4,700,000	Kiribati intends to explore the issue of community based environmental management with local communities in the outer islands (the exact location of which will be based on a key biodiversity areas study that is currently on-going). In addition, activities under the R2R programme will also focus on exploring the issue of developing the enabling environment for establishment of community based protected areas and protected species. It will explore capacity building at the formal and informal level, outreach for environmental sustainability at all levels of society in Kiribati. The initiative will entail community mobilization and participation in environmental management including understanding what is currently being done and identifying gaps with respect to enforcement of the environment legislation. The R2R initiative will inform the government to better understand the current status of biodiversity at national and outer islands levels and also entry points for advancing resiliency to expected climate change. During the preparatory phase, detailed discussions will take place with all relevant partners to ensure that the R2R initiative is complimentary to this LDCF project.
Rehabilitation and Sustainable Management of Gascony Coastal Wetland	UNDP/G EF Small Grants Program	2009 - 2012		Project improves coastal wetland conservation and protection through: replanting of mangrove and seawall construction; landscaping and use of sustainable land management for solid waste and sewerage; and, use of renewable energy for an efficient water system.
Kabangaki Village (Abemama) Coastal Resources Management through Community Sanitation Programme	UNDP/G EF Small Grants Program	2010 - 2012		Demonstration of conservation through addressing land-based pollution sources, and threats to freshwater and marine water. Demonstration of renewable energy use that have Global Environmental Benefits in reducing GHG.
Integrating Global environmental priorities into national policies and programmes	UNDP/G EF	2014 - 2017	US\$ 500,000	This Cross Cutting Capacity Development project will assist Kiribati to establish an Environmental Management Information System (EMIS), and to implement Environmental Indicators and Compliance Monitoring System (CMS). Such systems can help in maintaining environmental health and productivity in the country, and hence will be directly relevant to ecosystems productivity (and hence food production).
PAS: Phoenix Islands Protected Area (PIPA).	UNEP/GE F	2011 - 2015	US\$ 890,000	To advance implementation of the PIPA Management Plan 2010 – 2014 through a twin focus on: (i) Core Operation (capacity, infrastructure, zonation,

Project Title	Principal Donor Agency	Year	Budget US\$ (approx.)	Objective and Primary Activities
				enforcement, tourism, monitoring, evaluation) and Strategic Outcomes (atoll restoration, reverse fishing license, World Heritage site management, climate change adaptation), and (ii) to design and operationalize PIPA's Sustainable Financing System.

## Annex 4: UNDP Environmental and Social Screening

### Annex 4: UNDP Environmental and Social Screening

**Name of Proposed Project:** *Enhancing national food security in the context of global climate change*

#### **A. Environmental and Social Screening Outcome**

- Category 1. No further action is needed*
- Category 2. Further review and management is needed. There are possible environmental and social benefits, impacts, and/or risks associated with the project (or specific project component), but these are predominantly indirect or very long-term and so extremely difficult or impossible to directly identify and assess.*
- Category 3. Further review and management is needed, and it is possible to identify these with a reasonable degree of certainty. If Category 3, Select one or more of the following sub-categories:*

- Category 3a: Impacts and risks are limited in scale and can be identified with a reasonable degree of certainty and can often be handled through application of standard best practice, but require some minimal or targeted further review and assessment to identify and evaluate whether there is a need for a full environmental and social assessment (in which case the project would move to Category 3b).*
- Category 3b: Impacts and risks may well be significant, and so full environmental and social assessment is required. In these cases, a scoping exercise will need to be conducted to identify the level and approach of assessment that is most appropriate.*

#### **B. Environmental and Social Issues** (for projects requiring further environmental and social review and management)

*There are no significant negative social and/or environmental impacts foreseen with this project. This project has been designed to have no measureable negative environmental and/or social impacts. The project will improve environmental integrity and social welfare, including advancements in gender equality, participatory decision-making, and reduction of environmental degradation.*

#### **C. Next Steps** (for projects requiring further environmental and social review and management):

*This project will be subject to on-going project review/evaluation. At these junctures, project overseers will want to be certain the project remains within parameters as described within this project document. Should the project move beyond intended parameters, a supplementary environmental and social review may be required.*

#### **D. Sign Off**

Project Manager *W. NAINOGA*  
*hahamoi*

Date *8/12/14*

**QUESTION 1:**

**Has a combined environmental and social assessment/review that covers the proposed project already been completed by implementing partners or donor(s)?**

Select answer below and follow instructions:

- NO** → Continue to Question 2 (do not fill out Table 1.1)
- YES** → No further environmental and social review is required if the existing documentation meets UNDP’s quality assurance standards, and environmental and social management recommendations are integrated into the project. Therefore, you should undertake the following steps to complete the screening process:
  1. Use Table 1.1 below to assess existing documentation. (It is recommended that this assessment be undertaken jointly by the Project Developer and other relevant Focal Points in the office or Bureau).
  2. Ensure that the Project Document incorporates the recommendations made in the implementing partner’s environmental and social review.
  3. Summarize the relevant information contained in the implementing partner’s environmental and social review in Annex A.2 of this Screening Template, selecting Category 1.
  4. Submit Annex A to the PAC, along with other relevant documentation.

**Note: Further guidance on the use of national systems for environmental and social assessment can be found in Annex B.**

<b>TABLE 1.1: CHECKLIST FOR APPRAISING QUALITY ASSURANCE OF EXISTING ENVIRONMENTAL AND SOCIAL ASSESSMENT</b>	<b>Yes/No</b>
1. Does the assessment/review meet its terms of reference, both procedurally and substantively?	N/A
2. Does the assessment/review provide a satisfactory assessment of the proposed project?	N/A
3. Does the assessment/review contain the information required for decision-making?	N/A
4. Does the assessment/review describe specific environmental and social management measures (e.g. mitigation, monitoring, advocacy, and capacity development measures)?	N/A
5. Does the assessment/review identify capacity needs of the institutions responsible for implementing environmental and social management issues?	N/A
6. Was the assessment/review developed through a consultative process with strong stakeholder engagement, including the view of men and women?	N/A
7. Does the assessment/review assess the adequacy of the cost of and financing arrangements for environmental and social management issues?	N/A
<b>Table 1.1 (continued) For any “no” answers, describe below how the issue has been or will be resolved (e.g. amendments made or supplemental review conducted).</b>	

**QUESTION 2:**

**Do all outputs and activities described in the Project Document fall within the following categories?**

- Procurement (in which case UNDP’s [Procurement Ethics](#) and [Environmental Procurement Guide](#) need to be complied with)
- Report preparation

- Training
- Event/workshop/meeting/conference (refer to [Green Meeting Guide](#))
- Communication and dissemination of results

Select answer below and follow instructions:

- NO** → Continue to Question 3
- YES** → No further environmental and social review required. Complete Annex A.2, selecting Category 1, and submit the completed template (Annex A) to the PAC.

### QUESTION 3:

**Does the proposed project include activities and outputs that support *upstream* planning processes that potentially pose environmental and social impacts or are vulnerable to environmental and social change (refer to Table 3.1 for examples)? (Note that *upstream* planning processes can occur at global, regional, national, local and sectoral levels)**

Select the appropriate answer and follow instructions:  **NO** → Continue to Question 4.

- YES** → Conduct the following steps to complete the screening process:
  1. Adjust the project design as needed to incorporate UNDP support to the country(ies), to ensure that environmental and social issues are appropriately considered during the upstream planning process. Refer to Section 7 of this Guidance for elaboration of environmental and social mainstreaming services, tools, guidance and approaches that may be used.
  2. Summarize environmental and social mainstreaming support in Annex A.2, Section C of the Screening Template and select "Category 2".
  3. If the proposed project **ONLY** includes upstream planning processes then screening is complete, and you should submit the completed Environmental and Social Screening Template (Annex A) to the PAC. If downstream implementation activities are also included in the project then continue to Question 4.

<b>TABLE 3.1</b>	<b>EXAMPLES OF UPSTREAM PLANNING PROCESSES WITH POTENTIAL DOWNSTREAM ENVIRONMENTAL AND SOCIAL IMPACTS</b>	Check appropriate box(es) below
1.	Support for the elaboration or revision of <b>global-level</b> strategies, policies, plans, and programmes.	N/A
2.	Support for the elaboration or revision of <b>regional-level</b> strategies, policies and plans, and programmes.	N/A
3.	Support for the elaboration or revision of <b>national-level</b> strategies, policies, plans and programmes.  <i>The project will support the development of several policies designed to address issues related to climate change resilience and food security. The impacts will be positive.</i>	Yes
4.	Support for the elaboration or revision of <b>sub-national/local-level</b> strategies, policies, plans and programmes.  <i>Island Councils will adopt planning and policy mechanisms based upon national guidance.</i>	Yes

**QUESTION 4:**

**Does the proposed project include the implementation of *downstream* activities that potentially pose environmental and social impacts or are vulnerable to environmental and social change?**

To answer this question, you should first complete Table 4.1 by selecting appropriate answers. If you answer “No” or “Not Applicable” to all questions in Table 4.1 then the answer to Question 4 is “NO.” If you answer “Yes” to any questions in Table 4.1 (even one “Yes” can indicated a significant issue that needs to be addressed through further review and management) then the answer to Question 4 is “YES”:

- NO** → No further environmental and social review and management required for downstream activities. Complete Annex A.2 by selecting “Category 1”, and submit the Environmental and Social Screening Template to the PAC.
- YES** → Conduct the following steps to complete the screening process:
  1. Consult Section 8 of this Guidance, to determine the extent of further environmental and social review and management that might be required for the project.
  2. Revise the Project Document to incorporate environmental and social management measures. Where further environmental and social review and management activity cannot be undertaken prior to the PAC, a plan for undertaking such review and management activity within an acceptable period of time, post-PAC approval (e.g. as the first phase of the project) should be outlined in Annex A.2.
  3. Select “Category 3” in Annex A.2, and submit the completed Environmental and Social Screening Template (Annex A) and relevant documentation to the PAC.

<b>TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT</b>	
<b>1. Biodiversity and <u>Natural</u> Resources</b>	<b>Answer (Yes/No/Not Applicable)</b>
<b>1.1</b> Would the proposed project result in the conversion or degradation of <u>modified habitat</u> , <u>natural habitat</u> or <u>critical habitat</u> ?	No
<b>1.2</b> Are any development activities proposed within a legally protected area (e.g. natural reserve, national park) for the protection or conservation of biodiversity?	No
<b>1.3</b> Would the proposed project pose a risk of introducing invasive alien species?	No
<b>1.4</b> Does the project involve natural forest harvesting or plantation development without an independent forest certification system for sustainable forest management (e.g. <i>PEFC, the Forest Stewardship Council certification systems, or processes established or accepted by the relevant National Environmental Authority</i> )?	No
<b>1.5</b> Does the project involve the production and harvesting of fish populations or other aquatic species without an accepted system of independent certification to ensure sustainability (e.g. <i>the Marine Stewardship Council certification system, or certifications, standards, or processes established or accepted by the relevant National Environmental Authority</i> )?  <i>Production will be primarily for subsistence and not for large-scale commercial development. This does not rise to the level of requiring certification.</i>	Yes
<b>1.6</b> Does the project involve significant extraction, diversion or containment of surface or ground water?	No
<b>1.7</b> Does the project pose a risk of degrading soils?	No

<b>TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT</b>	
<b>2. Pollution</b>	<b>Answer</b> (Yes/No/ Not Applicable)
<b>2.1</b> Would the proposed project result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and transboundary impacts?	No
<b>2.2</b> Would the proposed project result in the generation of waste that cannot be recovered, reused, or disposed of in an environmentally and socially sound manner?	No
<b>2.3</b> Will the proposed project involve the manufacture, trade, release, and/or use of chemicals and hazardous materials subject to international action bans or phase-outs?	No
<b>2.4</b> Is there a potential for the release, in the environment, of hazardous materials resulting from their production, transportation, handling, storage and use for project activities?	No
<b>2.5</b> Will the proposed project involve the application of pesticides that have a known negative effect on the environment or human health?	No
<b>3. Climate Change</b>	
<b>3.1</b> Will the proposed project result in significant <sup>4</sup> greenhouse gas emissions?	No
<b>3.2</b> Is the proposed project likely to directly or indirectly increase environmental and social vulnerability to climate change now or in the future (also known as maladaptive practices)? You can refer to the additional guidance in Annex C to help you answer this question.	No
<b>4. Social Equity and Equality</b>	<b>Answer</b> (Yes/No/ Not Applicable)
<b>4.1</b> Would the proposed project have environmental and social impacts that could affect indigenous people or other vulnerable groups?  <i>The project is designed to assist vulnerable communities to increase their resilience to climate change. This includes helping islanders to design community-based approaches which are inclusive and set-aside specific areas for the benefit of community members who cannot afford access to motorized craft. If the current situation continues, these vulnerable community members will likely be at greater risk of social and environmental impacts. The project is designed specifically to mitigate these risks.</i>	Yes *positive
<b>4.2</b> Is the project likely to significantly impact gender equality and women's empowerment <sup>5</sup> ?	Yes *positive
<b>4.3</b> Is the proposed project likely to directly or indirectly increase social inequalities now or in the future?	No

<sup>4</sup> Significant corresponds to CO<sub>2</sub> emissions greater than 100,000 tons per year (from both direct and indirect sources). Annex E provides additional guidance on calculating potential amounts of CO<sub>2</sub> emissions.

<sup>5</sup> Women are often more vulnerable than men to environmental degradation and resource scarcity. They typically have weaker and insecure rights to the resources they manage (especially land), and spend longer hours on collection of water, firewood, etc. (OECD, 2006). Women are also more often excluded from other social, economic, and political development processes.

<b>TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT</b>		
<b>4.4</b>	Will the proposed project have variable impacts on women and men, different ethnic groups, social classes?	No
<b>4.5</b>	Have there been challenges in engaging women and other certain key groups of stakeholders in the project design process?  <i>Kiribati has very strong traditions that encourage women to participate in community events and decision-making.</i>	No
<b>4.6</b>	Will the project have specific human rights implications for vulnerable groups?	No
<b>5. Demographics</b>		
<b>5.1</b>	Is the project likely to result in a substantial influx of people into the affected community(ies)?	No
<b>5.2</b>	Would the proposed project result in substantial voluntary or involuntary resettlement of populations?	No
<b>5.3</b>	Would the proposed project lead to significant population density increase which could affect the environmental and social sustainability of the project?	No
<b>6. Culture</b>		
<b>6.1</b>	Is the project likely to significantly affect the cultural traditions of affected communities, including gender-based roles?	No
<b>6.2</b>	Will the proposed project result in physical interventions (during construction or implementation) that would affect areas that have known physical or cultural significance to indigenous groups and other communities with settled recognized cultural claims?	No
<b>6.3</b>	Would the proposed project produce a physical “splintering” of a community?	No
<b>7. Health and Safety</b>		
<b>7.1</b>	Would the proposed project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
<b>7.2</b>	Will the project result in increased health risks as a result of a change in living and working conditions? In particular, will it have the potential to lead to an increase in HIV/AIDS infection?	No
<b>7.3</b>	Will the proposed project require additional health services including testing?	No
<b>8. Socio-Economics</b>		
<b>8.1</b>	Is the proposed project likely to have impacts that could affect women’s and men’s ability to use, develop and protect natural resources and other natural capital assets?  <i>The project will impact the use of natural resources. However, it is envisioned that these impacts will largely be positive. Current use patterns by all levels of island society are causing a rapid decline of resources, particularly fisheries. The interventions to be applied by the project will reverse this trend and ideally increase the number of fish available to island residents, particular poorer and women headed households who often do not have access to motorboats and more remote fisheries.</i>	Yes
<b>8.2</b>	Is the proposed project likely to significantly affect land tenure arrangements and/or traditional cultural ownership patterns?	No

<b>TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT</b>		
<b>8.3</b>	Is the proposed project likely to negatively affect the income levels or employment opportunities of vulnerable groups?	No
<b>9.</b>	<b>Cumulative and/or Secondary Impacts</b>	<b>Answer</b> (Yes/No/ Not Applicable)
<b>9.1</b>	<p>Is the proposed project location subject to currently approved land use plans (e.g. roads, settlements) which could affect the environmental and social sustainability of the project?</p> <p><i>There are no existing land use plans. However, there are traditional ownership patterns. This will be considered and highly important to the land and coastal use plans developed during project implementation.</i></p>	No
<b>9.2</b>	Would the proposed project result in secondary or consequential development which could lead to environmental and social effects, or would it have potential to generate cumulative impacts with other known existing or planned activities in the area?	No

**Annex 5: Capacity Development Scorecard**

Baseline: December 2014: Extension Officers

<b>CR 2: Capacities to generate, access and use information and knowledge</b>					
Capacity Result/Indicator	Staged Indicators	Score (Rating 0- 3)	Comments	Next Steps	Contribution to Which Outcome
Indicator 4 – Degree of environmental awareness of stakeholders	Stakeholders are not aware about global environmental issues and their related possible solutions (MEAs)	0	Extension officers have extremely limited exposure to global issues and responses	The project will build a comprehensive training program to expose extension officers to global environmental issues and possible solutions.	Outcome 1
	Stakeholders are aware about global environmental issues and the possible solutions but do not know how to participate	--			
	Stakeholders are aware about global environmental issues and the possible solutions but do not know how to participate	--			
	Stakeholders are aware about global environmental issues and are actively participating in the implementation of related solutions	--			
Indicator 5 – Access and sharing of environmental	The environmental information needs are not identified and the information management infrastructure is inadequate	0	There are currently no methodologies in place for extension officers to	The project through the generation and	Outcome 1

information by stakeholders			identify needed information and/or access information	application of tools such as the AMAT will address this issue.	
	The environmental information needs are identified but the information management infrastructure is inadequate	--			
	The environmental information is partially available and shared among stakeholders but is not covering all focal areas and/or the information management infrastructure to manage and give information access to the public is limited	--			
	Comprehensive environmental information is available and shared through an adequate information management infrastructure	--			
Indicator 6 – Existence of environmental education programmes	No environmental education programmes are in place	-			
	Environmental education programmes are partially developed and partially delivered	1	Extension officers have limited exposure during their one-year apprenticeship. However, this generally focuses upon production rather than conservation issues.	The project will develop a comprehensive training program for extension officers.	Outcome 1
	Environmental education programmes are fully developed but partially delivered	--			
	Comprehensive environmental education programmes exist and are being delivered	--			
Indicator 7 – Extend of the linkage between environmental	No linkage exist between environmental policy development and science/research strategies and programmes	0	There are no linkages in place to develop policy and research, particularly on the island level where extension officers operate	The project will generate these linkages through national guidelines for	Outcome 1

research/science and policy development				island-based management, including improved model fisheries regulation	
	Research needs for environmental policy development are identified but are not translated into relevant research strategies and programmes	--			
	Relevant research strategies and programmes for environmental policy development exist but the research information is not responding fully to the policy research needs	--			
	Relevant research results are available for environmental policy development	--			
Indicator 8 – Extend of inclusion/use of traditional knowledge in environmental decision-making	Traditional knowledge is ignored and not taken into account into relevant participative decision-making processes	--			
	Traditional knowledge is identified and recognized as important but is not collected and used in relevant participative decision-making processes	--			
	Traditional knowledge is collected but is not used systematically into relevant participative decision-making processes	2	Traditional knowledge is well-known. There are participatory decision-making mechanisms in place at the village and island level. However, these decision-making	The project will enhance decision-making through improving integration of extension and island-based	Outcome 1

			processes are not effective conservation tools.	conservation by-laws	
	Traditional knowledge is collected, used and shared for effective participative decision-making processes	--			
BASELINE SCORE		3			

Baseline: December 2014: Fisheries Conservation Field Schools Participants

<b>CR 2: Capacities to generate, access and use information and knowledge</b>					
Capacity Result/Indicator	Staged Indicators	Score (Rating 0- 3)	Comments	Next Steps	Contribution to Which Outcome
Indicator 4 – Degree of environmental awareness of stakeholders	Stakeholders are not aware about global environmental issues and their related possible solutions (MEAs)	0	Island residents - FCFS participants - have very limited opportunities to access information regarding global issues and solutions	The project will generate a comprehensive training program to address this issue	Outcome 2
	Stakeholders are aware about global environmental issues and the possible solutions but do not know how to participate	-			
	Stakeholders are aware about global environmental issues and the possible solutions but do not know how to participate	-			
	Stakeholders are aware about global environmental issues and are actively	-			

	participating in the implementation of related solutions				
Indicator 5 – Access and sharing of environmental information by stakeholders	The environmental information needs are not identified and the information management infrastructure is inadequate	0	Island residents have only a very basic understanding of information needs and no information management structure	The project will generate a comprehensive training program to address this issue. The training program will be linked to island and village based information generation and management	Outcome 2
	The environmental information needs are identified but the information management infrastructure is inadequate	-			
	The environmental information is partially available and shared among stakeholders but is not covering all focal areas and/or the information management infrastructure to manage and give information access to the public is limited	-			
	Comprehensive environmental information is available and shared through an adequate information management infrastructure	-			
Indicator 6 – Existence of environmental education programmes	No environmental education programmes are in place	0	There are no formal environment education programs in place	The project will generate a comprehensive training program to	Outcome 2

				address this issue	
	Environmental education programmes are partially developed and partially delivered	-			
	Environmental education programmes are fully developed but partially delivered	-			
	Comprehensive environmental education programmes exist and are being delivered	-			
Indicator 7 – Extend of the linkage between environmental research/science and policy development	No linkage exist between environmental policy development and science/research strategies and programmes	0	Island residents - training program participants - have no linkage between policy and science	The project will address this by integrating research with island based policy and integrating participants in both processes	Outcome 2
	Research needs for environmental policy development are identified but are not translated into relevant research strategies and programmes	-			
	Relevant research strategies and programmes for environmental policy development exist but the research information is not responding fully to the policy research needs	0			
	Relevant research results are available for environmental policy development	0			
Indicator 8 – Extend of inclusion/use of traditional knowledge in environmental decision-making	Traditional knowledge is ignored and not taken into account into relevant participative decision-making processes	-			
	Traditional knowledge is identified and recognized as important but is not collected	1	Island residents - training program participants -	Training participants will	Outcome 2

	and used in relevant participative decision-making processes		apply traditional knowledge to their daily lives and this is relevant to decision-making. However, this has not yet risen to the level of being entirely relevant to the decision-making process since there are no formal by-laws or other procedures to apply traditional knowledge to achieve conservation impacts	have an opportunity to be exposed to best international practices, monitoring, and information and be able to integrate this with traditional knowledge within effective decision-making regimes (e.g., management planning)	
	Traditional knowledge is collected but is not used systematically into relevant participative decision-making processes	-			
	Traditional knowledge is collected, used and shared for effective participative decision-making processes	-			
	Score	1			

**Annex 6: Co-financing Letters**

*[Refer to separate file for letters of co-financing commitment]*

**Annex 7: GEF Tracking Tools**

*[Refer to separate file for individual scorecards]*