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Project Identification Form (PIF) entry – Full Sized Project – GEF - 7

## Sustainable food systems and integrated land/seascape management in the Marshall Islands

### Part I: Project Information

**GEF ID**

10862

**Project Type**

FSP

**Type of Trust Fund**

GET

**CBIT/NGI**

CBIT No

NGI No

**Project Title**

Sustainable food systems and integrated land/seascape management in the Marshall Islands

**Countries**

Marshall Islands

**Agency(ies)**

FAO

**Other Executing Partner(s)**

Ministry of Natural Resources and Commerce

**Executing Partner Type**

Government

**GEF Focal Area**

Multi Focal Area

**Taxonomy**

Focal Areas, Biodiversity, Biomes, Wetlands, Coral Reefs, Mangroves, Mainstreaming, Agriculture and agrobiodiversity, Fisheries, Land Degradation, Sustainable Land Management, Sustainable Livelihoods, Income Generating Activities, Ecosystem Approach, Community-Based Natural Resource Management, Sustainable Agriculture, Food Security, Climate Change Adaptation, Climate Change, Livelihoods, Climate resilience, Small Island Developing States, Sea-level rise, Ecosystem-based Adaptation, Influencing models, Strengthen institutional capacity and decision-making, Convene multi-stakeholder alliances, Stakeholders, Communications, Strategic Communications, Education, Awareness Raising, Beneficiaries, Private Sector, Individuals/Entrepreneurs, Civil Society, Academia, Non-Governmental Organization, Community Based Organization, Local Communities, Type of Engagement, Participation, Information Dissemination, Consultation, Partnership, Indigenous Peoples, Gender Equality, Gender Mainstreaming, Women groups, Gender-sensitive indicators, Sex-disaggregated indicators, Gender results areas, Participation and leadership, Capacity Development, Knowledge Generation and Exchange, Capacity, Knowledge and Research, Knowledge Generation, Workshop, Seminar, Training, Knowledge Exchange, South-South, Field Visit, Learning, Indicators to measure change, Theory of change, Protected Areas and Landscapes, Coastal and Marine Protected Areas, Land Degradation Neutrality, Land Cover and Land cover change, Carbon stocks above or below ground, Land Productivity

**Rio Markers****Climate Change Mitigation**

Climate Change Mitigation 1

**Climate Change Adaptation**

Climate Change Adaptation 1

**Duration**

48 In Months

**Agency Fee(\$)**

199,587.00

**Submission Date**

9/13/2021

## A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
LD-1-1	GET	1,365,595.00	3,919,500.00
BD-1-1	GET	735,318.00	2,110,500.00
	<b>Total Project Cost (\$)</b>	<b>2,100,913.00</b>	<b>6,030,000.00</b>

## B. Indicative Project description summary

### Project Objective

To transform agri-food systems and land/seascape management in the Marshall Islands to deliver integrated global environmental benefits and health benefits.

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
1. Favourable enabling conditions for integrated environmental and food system management Targets: - National sustainable food system plan developed and under implementation - Platform on agri-food system management functioning with broad cross-sector participation - Increases in systemic capacity indicator values (indicators and targets TBD during PPG) - Key decision-support instruments in use (indicators and targets TBD during PPG)	Technical Assistance	<p>1.1 Considerations of integrated environmental and food system management are mainstreamed into policies, strategies and planning in the RMI</p> <p>1.2 Capacities and instruments for environmental regulation, spatial planning and decision-making, in support of the integrated environmental and food system management, are enhanced</p>	<p>1.1.1 National sustainable food system roadmap</p> <p>1.1.2 Multi-sector platform on implementation of sustainable agri-food system roadmap and policy/regulatory adjustments</p> <p>1.1.3 Enhanced regulatory and incentive framework for environmental management, addressing flows of impacts among sectors (e.g. environment, agriculture, urban development, nutrition, waste management)</p>	GET	500,217.00	574,285.00

1.2.1 Program  
for the  
enhancement of  
human  
capacities in  
relation to  
integrated  
environmental  
and food system  
management

1.2.2 Decision-  
support  
instruments in  
relation to  
integrated  
environmental  
and food system  
management

<p>2. Strengthened sustainable food production systems Targets: - 400 ha under SLM in production systems - 450 ha under improved management to benefit biodiversity - 3,500 ha of MPAs with reduced threats - 5,000 farmers, fishers and other local community members have access to sustainable options - 100 ha of degraded agricultural land restored - 50 ha of forest and forest land restored - 41,777 tCO2 eq sequestered through improved farming practices and ecosystem restoration</p>	Investment	<p>2.1 Institutional and local stakeholders (including farmers, fishers and other local community members) have access to feasible and attractive options for resource management and restoration and food production that contribute to land degradation neutrality, and</p>	<p>2.1.1 Strengthened systems for the participatory co-development and demonstration of models for sustainable land management and food production in rural and urban areas, featuring integrated farming systems, nature-based solutions and circular economy solutions</p>	GET	800,349.00	2,871,429.00
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ecosystem  
conditions and  
services

2.1.2 Integrated  
natural resource  
and food system  
management  
systems in urban  
areas

2.1.3  
Community-  
based natural  
resource  
management  
models including  
multi-  
stakeholder  
dialogues and  
plans for social  
development and  
environmental  
management,  
integrating  
terrestrial,  
coastal and  
marine elements  
with a  
landscape/land  
degradation  
neutrality (LDN)  
perspective

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<p>3. Favourable value chain conditions for sustainably-produced and nutritious food</p> <p>Targets: - Volumes of sustainably produced, nutritious locally-grown food purchased in retail outlets (target TBD during PPG) - % increase in income of community members from engagement in the value chain process (by producing and supplying sustainable locally grown food) (target TBD during PPG) - Numbers of schools and pupils participating in feeding and education programs on sustainable and nutritious food (target TBD during PPG)</p>	Investment	<p>3.1 Value chain/market conditions in the RMI favour sustainably produced and nutritious food</p>	<p>3.1.1 Public outreach/education programme (including school education) focused on sustainably-produced and nutritious food, including traditional crops</p> <p>3.1.2 Strategy for supporting markets and value chains for sustainably-produced and nutritious food, including private sector engagement</p>	GET	500,217.00	1,722,857.00
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4. Knowledge management Targets: All results framework indicators measured and applied in results-based management. Numbers of national and regional actors receiving outreach materials (target TBD)	Technical Assistance	4.1 Knowledge on options for integrated environmental and food system management is effectively managed to permit scaling elsewhere in the country, and in other atoll states and elsewhere (particularly SIDS)	4.1.1 Knowledge management system supporting sustainability, replication and scaling out of results.  4.1.2 Programme for outreach to other Pacific SIDS (on e.g. LDN, integrated landscape management, reconciling environmental and dietary considerations)	GET	200,087.00	574,286.00
<b>Sub Total (\$)</b>					<b>2,000,870.00</b>	<b>5,742,857.00</b>
<b>Project Management Cost (PMC)</b>						
GET					100,043.00	287,143.00
<b>Sub Total(\$)</b>					<b>100,043.00</b>	<b>287,143.00</b>
<b>Total Project Cost(\$)</b>					<b>2,100,913.00</b>	<b>6,030,000.00</b>

**C. Indicative sources of Co-financing for the Project by name and by type**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Donor Agency	Global Agriculture and Food Security Program (GAFSP)	Grant	Investment mobilized	2,530,000.00
Donor Agency	Green Climate Fund	Grant	Investment mobilized	2,500,000.00
Recipient Country Government	Ministry of Natural Resources and Commerce	In-kind	Recurrent expenditures	1,000,000.00
			<b>Total Project Cost(\$)</b>	<b>6,030,000.00</b>

**Describe how any "Investment Mobilized" was identified**

- The Investment Mobilized cofinancing from GAFSP corresponds to the Small Islands Food and Water Project (SIFWaP)

<https://www.gafspfund.org/projects/small-islands-food-and-water-project-sifwap> - The Investment Mobilized cofinancing from Green Climate Fund refers to GCF projects FP066, with an estimated cofinancing of USD 1.5 million and USD 1.0 million respectively, based on their respective GCF budget allocations and degree of temporal overlap with the proposed project. <https://www.greenclimate.fund/project/fp066> and FP112 (<https://www.greenclimate.fund/project/fp112>)

## D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
FAO	GET	Marshall Islands	Land Degradation	LD STAR Allocation	1,365,595	129,732	1,495,327.00
FAO	GET	Marshall Islands	Biodiversity	BD STAR Allocation	735,318	69,855	805,173.00
<b>Total GEF Resources(\$)</b>					<b>2,100,913.00</b>	<b>199,587.00</b>	<b>2,300,500.00</b>

**E. Project Preparation Grant (PPG)**PPG Required **true**

PPG Amount (\$)

100,000

PPG Agency Fee (\$)

9,500

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
FAO	GET	Marshall Islands	Land Degradation	LD STAR Allocation	65,000	6,175	<b>71,175.00</b>
FAO	GET	Marshall Islands	Biodiversity	BD STAR Allocation	35,000	3,325	<b>38,325.00</b>
<b>Total Project Costs(\$)</b>					<b>100,000.00</b>	<b>9,500.00</b>	<b>109,500.00</b>

## Core Indicators

### Indicator 2 Marine protected areas created or under improved management for conservation and sustainable use

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
3,500.00	0.00	0.00	0.00

### Indicator 2.1 Marine Protected Areas Newly created

Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
0.00	0.00	0.00	0.00

Name of the Protected Area	WDPA ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
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### Indicator 2.2 Marine Protected Areas Under improved management effectiveness

Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
3,500.00	0.00	0.00	0.00

Name of the Protected Area	WDPA ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)	METT score (Baseline at CEO Endorsement)	METT score (Achieved at MTR)	METT score (Achieved at TE)
Arno	555583313	Protected area with sustainable use of natural resources	3,000.00						
Kwajalein	555592846	Protected area with sustainable use of natural resources	350.00						

Majuro	555592845	Protected area with sustainable use of natural resources	150.00	
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### Indicator 3 Area of land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
150.00	0.00	0.00	0.00

### Indicator 3.1 Area of degraded agricultural land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
100.00			

### Indicator 3.2 Area of Forest and Forest Land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
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50.00
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**Indicator 3.3 Area of natural grass and shrublands restored**

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
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**Indicator 3.4 Area of wetlands (incl. estuaries, mangroves) restored**

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
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**Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)**

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
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425.00	0.00	0.00	0.00
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**Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)**

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
200.00			

**Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)**

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

**Indicator 4.3 Area of landscapes under sustainable land management in production systems**

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
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225.00			
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**Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided**

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
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**Documents (Please upload document(s) that justifies the HCVF)**

Title	Submitted
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**Indicator 6 Greenhouse Gas Emissions Mitigated**

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
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Expected metric tons of CO <sub>2</sub> e (direct)	41777	0	0	0
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Expected metric tons of CO <sub>2</sub> e (indirect)	0	0	0	0
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## Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO <sub>2</sub> e (direct)	41,777			
Expected metric tons of CO <sub>2</sub> e (indirect)				
Anticipated start year of accounting	2026			
Duration of accounting	20			

## Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO <sub>2</sub> e (direct)				
Expected metric tons of CO <sub>2</sub> e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

## Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

## Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
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## Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	2,500			
Male	2,500			
<b>Total</b>	5000	0	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

The Sub-Indicator targets are as follows: - 2.2: Area of MPAs under improved management: 3,500 ha. Arno, Kwajalein and Majuro atolls comprise a total of 7,629 ha of MPAs and it is estimated that reduced agrochemical/effluent runoff and improved fisheries practices will reduce threats over around half of this area (as reflected in the METT scorecard, which will be prepared during PPG). - 3.1: Area of agricultural land restored: 100 ha - 3.2: Area of forest and forest land restored: 50 ha - 4.1: Area of landscapes under improved management to benefit biodiversity: 200 ha. - 4.3: Area of landscapes under sustainable land management in production systems: 225 ha. The terrestrial landscapes referred to under Indicator 4 form part of integrated landscapes/seascapes; the marine (lagoon/shelf parts of these are included under sub-indicator 2.2 (given that all of the marine area is included under Marine Protected Areas). The area targets refer to the specific localities where the project will work on each of the three provisionally selected atolls (Laura on Majuro atoll, Bigeej on Kwajalein and Aaron island on Arno atoll): area targets for core indicator 4 include the area both of the terrestrial part of the locality and the adjoining area of lagoon and oceanic shelf, in accordance with the integrated atoll management vision of the project which considers atolls as "integrated land/seascapes" with biophysical and livelihood connectivity spanning their constituent parts. Indicators 3.1 and 4.3 include a total of around 325 ha of agricultural land, which is around 16% of the total area of arable land in the country. It is estimated that through scaling, the models of sustainable land management to be promoted through the project will eventually be applied over 60-80% of the country's arable land, through co-financing by Government of RMI and associated projects. The site level interventions reflected in the 225 ha target for sub-Indicator 4.3 (Area of landscapes under sustainable land management in production systems) will involve an estimated 500-1,000 farm families (to be confirmed during PPG) farming approximately 0.5-1.0 ha per family. The overall total of 5,000 beneficiaries given under Core Indicator 11 refers to the total number of members of these farm families. The 150 ha target under Core Indicators 3.1 and 3.2, and the 200 ha target under Core Indicator 4.1 will contribute to Aichi Biodiversity targets 6, 7, 8, 10, 13, 14, 15 and 18 (please see Section 6 for detailed explanation).

## Part II. Project Justification

### 1a. Project Description

#### 1) Global environmental problems, root causes and barriers that need to be addressed (systems description)

##### Context

1. The Republic of the Marshall Islands (RMI) is composed of twenty-nine atolls and five low elevation islands located in the north-central Pacific Ocean. Twenty-two of the atolls and four of the islands are inhabited. The islands are scattered in an archipelago consisting of two almost parallel groups, the eastern 'Ratak' (sunrise) chain and the western 'Ralik' (sunset) chain. The islands extend about 700 miles (1130 km) west to east, from 4°34'W to 14°43'E, and about 800 miles (1230 km) north to south, from 160°48'N to 172°10'S. The Marshall Islands have also claimed the Wake Islands (Enenkeo) to the north, currently an American possession.
2. Isolated by ocean, the RMI is more than 2,000 miles (3230 km) from the nearest trading centers, Honolulu and Tokyo. Geographically, its nearest neighbors are Kiribati to the south and the Federated States of Micronesia to the west.
3. The total land area of the RMI is just under 181.43 km<sup>2</sup>). The topography is uniformly low and flat. and the mean height above sea level is about two meters. The soils are nutrient-poor and hence the agriculture base is very limited. Around the edges of the typical islet there is generally a small tidal ridge, most pronounced on the ocean side. On the lagoon side, this ridge is generally composed of sand and fine gravel deposits, while on the seaward side it is more commonly made up of coral limestone reef surface, overlain by cobbles.
4. Only around 8,600 ha (around 47% of the total land area) are classified as agricultural: of this, around 2,000 ha are classed as arable and the remainder are under permanent crops (coconuts).
5. The Republic's marine resource base is however broad, with its combined lagoon area totaling 6511 km<sup>2</sup>, and its Exclusive Economic Zone (EEZ) encompassing 1.2 million km<sup>2</sup>) of the Pacific Ocean.
6. **Climate** : the moist, tropical climate of the Marshall Islands is heavily influenced by the north-east trade wind belt. While trade winds prevail from December through April, periods of weaker winds and doldrums occur from May through November. Annual rainfall varies considerably from north to south within the archipelago, the southern atolls receiving 300-340 cm and the northern atolls receiving 100-175 cm. The average annual temperature is 27°C, with monthly means scarcely varying from 26.9°C to 27.1°C. The maximum daily variation is about 7°C. Temperatures are much the same throughout the country.

7. There is some climate seasonality, marked by changes in rainfall and windspeeds; there are also significant regional variations in rainfall. The southern atolls, including Majuro, where long-term weather data exists have high rainfalls that average between 3,000 to 4,300 mm whereas the northern atolls receive 1,000 to 1750 mm. The northernmost atolls (Wake, Taongi and Bikar) are drier, support limited flora and fauna and have not been occupied in recent times.
8. Annual rainfall in Majuro averages 3,500 mm and there are seasonal variations between the dry months of December to April, with February having an average rainfall of 158 mm, and the wet months of April to November, with October having an average rainfall of 390 mm. Droughts are relatively infrequent, other than in 1982-83 period when 11 drought occurred in many parts of Micronesia, in association with a major shift in the El Nino-Southern Oscillation (ENSO), and in early 1970 (Fosberg 1990). Major storms do not often impact the Marshall Islands, but typhoons and hurricanes frequently originate in the area, gathering strength as they move away from the equator. Prior to typhoons Zelda and Axel in 1992, the most recent typhoons to affect the Marshall Islands occurred in 1905 and 1918, and the nation never experienced a tsunami. However, high wave action and ocean swells following hurricanes in other parts of the Pacific do occasionally impact the Marshall Islands, with devastating results. In December 1979, high ocean swells inundated urban Majuro for several hours, washing away land, homes and commercial buildings. The cost of damage ran into millions of dollars.
9. Climate change: Average annual temperature is projected to increase by 2090 between 0.8°C (RCP2.6) and 3.1°C (RCP8.5). Average annual rainfall is projected to increase in 2090 between 3% (RCP2.6) and 8% in Majuro and 14% in Kwajalein (RCP8.5). Current extreme rainfall events will become more frequent by 2090, between 12.5% chance to occur in any one year (RCP2.6) and 16.7% chance to occur in any one year in Majuro and 20% in Kwajalein (RCP8.5).
10. Increase in seawater temperature and ocean acidification are also expected in RMI. The main projected future climate change impact for RMI is sea level rise because of the low elevation of its atolls and islands. Extreme sea level events are also projected to become more frequent. Under the low emission scenario (RCP2.6), sea level is expected to increase by 0.41m by 2090 and by 0.65m under the high emission scenario (RCP8.5) . By 2030, under a high emissions scenario, this rise in sea level is projected to be in the range of 1.2–6.3 inches (3-16 cm). The sea-level rise combined with natural year-to-year changes will increase the impact of storm surges and coastal flooding.
11. **Soils:** with few exceptions, the soils of the Marshall Islands are nutrient-poor, frustrating largescale agricultural development. Moreover, salt spray resulting from turbulence at the windward reef margin is continually carried by winds across the islands. This, in combination with high evaporation rates fostered by abundant solar radiation and high average wind speeds, results in high surface salinity which further impedes the growth of plant life.
12. **Water:** for the most part, fresh water resources are limited to sub-surface, Ghyben-Herzberg lenses, generally located on larger islets. Such lenses consist of fresh water “floating” on a denser seawater layer just below the surface. Regularly replenished by rainfall, these lenses can usually be accessed by digging down one to eight feet. The water is often “hard” or “limey”, but it is not brackish. As these lenses are not uniformly present, most of the inhabited islands rely heavily on rainwater catchment systems to help meet fresh water needs.
13. A recent assessment by the Marshall Islands Environmental Protection Authority (MIEPA) found 9 out of 10 ocean and lagoon locations in Majuro were badly polluted, often with disease-causing bacteria associated with human and animal waste . Untreated, raw sewage is dumped on the oceanside, brown-algae-blanketed reef. Waste from pig pens pollute the lagoons, and residents use rubbish-strewn beaches as toilets. Ocean currents then course the sewage to the shore, to the same places where residents and visitors swim and fish.

14. Land and forest cover : RMI has about 70% total forest cover, which includes native forest, agro-forest, and coconut plantations. Fourteen percent of land cover area is listed as barren lands, which includes coastal areas and sand spits. About twelve percent of the landscape is urban land including roads and infrastructure, mostly on Kwajalein and Majuro, and about four percent is non-forest vegetation including rangeland and agricultural lands. Forest cover is considered to be stable, with little change in the last 25 years, but data availability and confidence are low. Existing information on forest condition indicates that about 37% of sampled trees have some form of damage. Land cover mapping has only been carried out on the 10 larger atolls which make up 74% (13,403 hectares) of the land area.

15. The changes of forest cover on the main urban atolls greatly reduce the habitat and key species of importance. Increased urbanisation has major negative impacts on ground water and forest biodiversity. The loss of forest cover and native tree species has major implications for native fauna. Coastal strand/forest vegetation plays an important role in reducing salt damage to crops and other forest vegetation – the loss of this buffer has adverse consequences.

16. **Biodiversity:** the entirety of the Marshall Islands lies in the central-western part of the Conservation International Polynesia/Micronesia Hotspot, and the northern Marshall Islands form the Key Biodiversity Area, Kabin Meto. Nine unique mangrove forests are located on the islands within Jaluit Atoll. The largest of the mangrove forests, estimated to be approximately 4 kilometers long and 0.5 kilometers wide at its widest point, is located on Jaluit Jaluit. Three species of mangroves (*Brugiera* sp., *Rhizophora* sp., and *Sonneritia* sp.) have been identified in this area although it is possible other species are also present.

17. Seventy bird species (mainly seabirds and migratory birds) are reported to be found in the RMI. Of the 31 species of seabirds found, 15 are reported to breed in the islands. The IUCN Red List lists one Critically Endangered species in the country (the Oceanic white-tip shark *Carcharhinus longimanus*), 7 Endangered species (of which one, Boettger's emo skink, *Emoia boettgeri*, is terrestrial and limited to Eastern Micronesia) and 48 Vulnerable species. No terrestrial mammals are found in the Marshall Islands other than humans and the Polynesian rat (*Rattus exulans*). Lamberson (1984) recorded the presence of seven species of lizards and one species of blind snake in the Marshall Islands but noted that none of these species was endemic to the RMI. Five species of marine turtles occur in the Marshall Islands with at least two species (hawksbill and green turtle) known to nest in the islands. A compilation of published records of marine algae found in the Marshall Islands (McDermid 1989) lists a total of 238 species of green, brown, red, and blue-green algae and the Republic has begun to explore the potential for the commercial production of this resource.

18. The protected area network of the RMI consists of 16 sites totaling 5,839.29 km<sup>2</sup>, of which 5,812.23 km<sup>2</sup> (99.5%) is marine area. The ongoing UNDP GEF Reimaanlok project will add a further 310 ha to the national PA estate.

19. **Population:** The census of the Marshall Islands conducted on 5 April 2011 enumerated a total population of 53,158, of whom 27,243 were males and 25,915 females (up from 50,840 people in 1999 and 43,380 in 1988). Whilst the overall population growth rate has declined during the period 1999-2011 to 0.4 percent per annum, urbanization due to migration from rural areas, especially the main urban centers of Majuro and Ebeye, has resulted in intense population densities and overcrowding: the Marshall Islands is now one of the most urbanized countries in the Pacific with almost 74% of the population living either on Majuro or Ebeye, which are home to around 70% of the country's population

20. The high rate of population growth in the Republic has resulted in an increasingly high ratio of dependency: the median age of the national population is 20.6 years and 40% of the population is under the age of 15 years. The needs of this extremely young population can be expected to strain progressively both private and public sector resources, particularly within the healthcare and education segments.

21. Until the signing of the Compact of Free Association (CFA) with the United States of America, almost all migration in the RMI was internal. International migration was confined to those moving to the USA for tertiary education and most of these graduates subsequently returned to the RMI, although this is now less true. The signing of the CFA gives all Micronesian citizens unrestricted access to the USA.

22. **Gender:** Women are recognized for having a primary role in providing food, water, sanitation, and health care in their communities. Most women living in rural areas work on their household duties and sometimes engage in agriculture and/or fishery activities as supports for their male family members or for their self-consumption. They are not likely to engage in the commercial activities on their own in the sectors. However, the production of handicrafts is one of the popular activities for them and helps to generate incomes for their livelihoods by selling their products to Majuro and Ebeye. Usually men engage in commercial fisheries and women engage in fisheries activities in smaller-scale for self-consumption.

23. In 2011, only 28% of women were in paid employment, against 51% of men: unpaid household, community and family care work – work typically done by women – are not considered employment, or counted in the GDP. Gender gaps in employment persist across age groups in both urban and rural areas, and in 2017 there was a 10% gender pay gap overall. Although women have a key role in agricultural activities, they have limited access to and control of resources, and they make up only 10% of those in paid employment in the agriculture sector (against 16% in industry and 39% in the service sector).

24. More girls than boys attend higher levels of education, with a gender parity index of 0.99 at primary, 1.07 at secondary and 1.04 at tertiary level: this is leading to a progressive closing of the gender gap in relation to school completion. Literacy rates are higher among women and girls.

25. The land ownership inheritance system in the RMI is based on the indigenous matrilineal system. In the system, all persons born to a woman may inherit the right to cultivate and use land owned by their matrilineal lineages. This system is still working in the RMI and some communities have female chiefs because she is entitled to control her family's inheritance system.

26. **Agriculture:** Agriculture was traditionally a key component of the Marshall Islands' economy, mainly permanent crops and plantations. Nearly all families were once involved in agriculture. There has been a steady decline and loss of engagement in the agricultural sector with about less than half of households currently involved. In 2006 there was only 0.3% of the labor force engaged in agriculture and forestry activities as their main economic activity. In 2011 64% of the total land area of the Marshall Islands was considered arable. And in 2014, the agriculture and forestry export value as a proportion of the total export was only 1.2%.

27. Most agricultural production in the country is still subsistence based. In general, the development of the production sector has been hindered by an inadequate supply of skilled labor and natural resources, and by the nation's geographic isolation from world markets. Agriculture production is relatively small but important to the livelihood of people and the economy of the RMI. It comprises food crops, small livestock and a single cash crop - copra.

28. Land for agriculture is limited and in most atolls, there are islets that are not suitable for growing crops. Less than one half of the total land area is considered as potential agricultural area. Use of available land for housing, infrastructure and US military needs compete with that for cropping.

29. Typical of atoll soils, the soils of the RMI are generally thin, sandy, alkaline and lacking minerals (particularly nitrogen, phosphorus, potassium and calcium) and micronutrients essential for plant growth. Low and poorly distributed rainfall combined with poor water retaining properties of the soil limits the

range and quantities of crops that could be cultivated. The domestic market is small and undeveloped resulting in volatile prices for local produce, limited opportunities to diversify production, inefficiencies and diseconomies of scale in production, processing and marketing. Introduced pests have increasingly become important and the small sizes of farming land would make any commercial agricultural development initiative extremely challenging.

30. The Agriculture Sector Plan 2021-2031 highlights the following as particular challenges for sustainable agriculture development in the country:

- **Poor soil conditions:** The sandy carbonatic soils of Pacific atolls are considered infertile and poorly suited to agriculture. The Republic of the Marshall Islands is comprised predominantly of atolls, and there is scant information on the fertility status of the Marshall Island soils. Most Marshallese soils are limited in nitrogen (N), phosphorus (P), potassium (K), iron (Fe), copper (Cu) and manganese (Mn).
- **Water availability:** The Marshall Islands experienced severe droughts in the last few years and with increasing sea level rise the freshwater supply is dwindling. United Nations Development Program (UNDP) has reported that the 34 islands that comprise the country are in danger of being inundated by rising sea levels and dwindling freshwater supplies. This signals a major challenge to agriculture development to develop water management strategies for producing crops in the face of this potential crisis.
- **Narrow genetic base:** Some of the varieties of species like pandanus, taro, breadfruit, coconuts, dwarf banana, traditional fruits and sources of traditional medicines are now endangered. The major challenge is protecting the genetic diversity of the crops from introduced pests and diseases and the effects of extreme weather events like droughts and severe cyclones.
- **Pests and diseases:** A major problem with introduced crops is their susceptibility to pests and diseases. Traditional crops like coconuts and breadfruit also threatened by pest and disease problems. The most serious of these include insect pests such as the breadfruit mealybug, coconut scale, and spiraling whitefly, which cause severe damage to many food crops and seriously affect crop productivity and overall food security. To show how serious this problem is, twenty-one new pest species were introduced to Jaluit and Majuro in 1975 of which twelve species were new to the country.
- **Costs of farm inputs:** Farm inputs are generally costly in the Pacific Islands and more on atolls.
- **Challenges for livestock:** There are limited choices for livestock production on atolls. The most common are smaller animals – pigs, poultry, and ducks. The traditional breeds of small animals raised on atolls are disappearing.
- **Climate change:** Particularly the danger of sea-level rise. Sea level rise has already encroached landwards, and high tides and frequent storms continue to threaten local homes and property. Recent research indicates that sea levels have been increasing by 3.4 millimeters (0.13 inches) per year. A one-meter rise could result in the loss of 80 percent of the Majuro Atoll, which is home to half the nation's population. Besides, the underwater freshwater supply has been salinated by this influx of seawater. Efforts will be made to improve the resilience of food production systems to impacts of climate change by improving above-ground biodiversity and below-ground biodiversity.
- **Trade and Marketing:** Currently a shift is taking place away from the traditional copra export in favor of the export of coconut oil. There are opportunities in the domestic market for added value products like breadfruit flour and for selling fresh agricultural produce. There is an opportunity as well for organic produce.
- **Challenges for forestry:** The major challenge for forestry is the disappearance of native forest trees and traditional agroforestry systems.

31. The *traditional agricultural system* is developed around the combination of coconut, breadfruit and pandanus and the cultivation of taro in pits, with small quantities of papayas (pawpaw), sweet potatoes, limes and other vegetables. Agriculture in RMI has been characterized as 'nature-intensive' by a US Government study:

"Rather than rearrange the environment and expend great amounts of energy, people's activities were directed to the most effective use of microhabitat and natural phenomena. This 'technology' has been classified as being 'nature-intensive,' and can be contrasted with what might be classified as 'Asian labor-intensive agriculture' and 'Western energy- and chemical-intensive agriculture' (US Congress, Office of Technology Assessment 1987:144)" .

32. Most of the traditional subsistence crops are high in complex carbohydrates with good nutritional value. The traditional agricultural system has declined substantially in recent times: on many atolls, pit taro cultivation has declined, and on the densely populated atolls of Ebeye and Majuro (with the exception of a small area at Laura), traditional agriculture no longer exists, and many young people have never seen or experienced the traditional Marshallese agricultural economy. Consequently, in the last three decades, diets have incorporated a larger quantity of imported food: about 90 per cent of all food is imported.

33. Overall, there is a general lack of awareness about the potential of small-scale agriculture in the RMI. Very little agriculture production is marketed from the outer islands, because of transport costs, irregular services and limited production, other than occasional bananas, much of which comes from Laura or Long Island. Chickens and pigs are also occasionally sold. Barriers to the development of the agricultural economy include land shortage, high labor costs, an educational system oriented to 'white collar' occupations rather than agricultural development, consumer tastes oriented to imported foods, limited marketing infrastructure, inadequate and expensive transport, and few skilled agriculturalists.

34. **Copra** has been the primary export of the RMI since the days of the German and Japanese occupations. Annual copra production declined by 15.1 per cent between 1979 and 1988. Dwindling production has been attributed to: i) depressed price of copra in world markets; ii) reduced productivity of aging coconut plantations; and iii) inadequate storage and shipping capabilities of outer atolls. Coconut groves, many of them planted near the turn of the century, cover 22,000 acres, or 60 per cent of the nation's land. Approximately 11,000 acres of the plantations are currently still productive (OPS 1991a). Without copra production, most outer atolls would be subsistence economies almost entirely dependent on remittances and government employment for cash incomes yet copra production alone is an inadequate base for an agricultural economy.

35. **Food crops:** breadfruit is the most widely available starch food and regularly consumed when in season from January to March and June to July. Some breadfruit is preserved using traditional methods. Pandanus produce fruits between December and March and a year's supply of leaves for roofing and handicrafts. Production of sweet bananas varies between atolls with Namdrik and Ebon atolls having the greatest relative production. Cooking banana is less common while pumpkins are widely eaten and easy to grow. Production of taro and sweet potato has fallen dramatically because of increased access to imported staples which are more convenient for preparation and storage. Arrowroot, the traditional staple of the atolls, has virtually disappeared from use.

36. Traditionally, food crops were not sold but shared or exchanged. Exchanging local atoll food for imported food between relatives living in the outer islands and those living in urban centers was prevalent. But many young families have been growing up in times of easy access to imported food and many youths, especially those in urban centers, are therefore unfamiliar with atoll food today. Today, local foods are used mainly on special occasions as a reserve when imported foods are not available and for variety from imported foods.

37. Because of cultural values, food produced on the outer atolls is rarely sold locally, though a pig may sometimes be purchased for a special occasion. Outer atoll crops are rarely marketed at the urban atolls because of seemingly insurmountable problems in transportation and lack of a reliable mechanism for payment. Urban relatives sometimes request that a pig, a bunch of bananas, a cluster of pandanus, lobsters, crabs or other shellfish be sent to them depending on availability of transportation. These are not tendered for a particular cash value but are 'paid for' under the cultural tradition of reciprocity among Marshallese. The principal methods of marketing foods produced locally in Majuro are at roadside stands, 'take-out' stores, major retailers, the Laura Farm, and at the monthly Farmers' Market. Domestic marketing of food is largely the responsibility of women.

38. **Livestock:** While husbandry of domestic ducks, geese, turkeys, goats, and other livestock species have been attempted, only pigs and chickens have proved viable. For the most part, these are raised in a haphazard manner as the primary source of meat on festival occasions and are allowed complete freedom to roam as they please. Free-ranging pigs have been the demise of many private attempts to garden. Commercial chicken production, for either meat or eggs, thus far has not been profitable because it requires importation of costly imported feed. A few small piggeries exist in Majuro, including one at the Laura Farm. Demand for pork, chicken and eggs is now almost wholly met by imports.

39. **Fisheries:** Marine resources have significant dietary importance (see below). Fisheries also make economic contributions, partly through income derived from fishing licenses, and partly through employment and income generation from tuna processing operations, from fishing activities and from servicing fishing vessels. Over the last decade there have been significant increases in fisheries contribution to GDP and in fisheries exports. Yellowfin tuna in the RMI is nearing full exploitation and if the fishing effort is maintained at the current rate, yellowfin tuna stock will be overfished. Bigeye tuna stock is reported to be fully exploited and the current level of exploitation is therefore unsustainable.

40. Removal of large biomass of target fish stocks may have impacts beyond these stocks, some of which may also have a high fishery value (e.g. billfishes). Due to the poor state of knowledge the impact of fishing on these species is uncertain. Other species also interact with fisheries. For example, turtles, seabirds and marine mammals are sometimes caught accidentally by longline and purse-seine operations. Continuing extraction of sand and gravel aggregate from the reef, beaches and nearshore areas of Majuro Lagoon is unsustainable and may be contributing to shoreline erosion and hence, inshore fisheries.

41. A study conducted in 2015 around several islands found concentrations of harmful contaminants in fish and runoff water that could pose a health threat to the population. The contaminants, the study concluded, were mainly pesticides, other organic chemicals and toxic metals. Experts say that this pollution could be caused by anything from boat paint stripping to unregulated waste disposal. For the moment, a fishing prohibition is applied in polluted harbours.

42. Fisheries in the RMI are regulated, promoted and managed in terms of resource sustainability by the Marshall Islands Marine Resources Authority (MIMRA). The Marshall Islands Marine Resources Authority (MIMRA) is responsible for policies, regulations and the monitoring of all types of coastal and oceanic fisheries, as well as aquaculture and mariculture activities that include supporting oyster and clam production. The Marshall Islands Marine Resources Authority (MIMRA) acts as a business and broker for small fishers, as well as a regulator for larger private companies operating in domestic and international waters. The involvement of the Marshall Islands Marine Resources Authority (MIMRA) in the RMI food system extends to its transportation of artisanal fishers' catches from the Outer Islands to Majuro markets, and the promotion of consumption of domestic blue foods across the country .

43. **Food and nutrition:** At present food retail in the urban centres is almost exclusively through privately-owned supermarkets: these receive food imports through monthly container shipments, and much of the fresh produce typically spoils between one shipment and another. There is therefore a large unsatisfied potential demand for fresh produce which, given the infrequency of shipments, would need to be supplemented by local production. The trade in locally-produced food in urban centres is largely limited to small niche markets such as the Majuro Local Food Market, and one-off purchases for social occasions.

44. Whilst outright hunger may not be prevalent in the RMI, poor nutrition certainly is a major issue. The increase in incidence of non-communicable diseases (NCDs), and lifestyle diseases, many of which have dietary causes, is testament to this. Serious problems of nutritionally-related diseases are common, including vitamin A deficiency and anemia among children, diabetes, hypertension, heart disease, and certain cancers among adults. In 2002, 64% of the population did not consume the World Health Organization (WHO)-recommended 5 serves of fruit and vegetables each day ; in 2007, at least 10% of children

(0-5 years) living in urban areas and 18.8% of children in rural areas were malnourished, indicated by low weight for age, thinness or wasting, and the Community Survey conducted in 2006 showed that 35% of households did not have sufficient food for all their family members at all times. There is a strong relationship between children's nutritional status and economic well-being of their families, with the largest proportions of malnourished children (20%) found in households of the lowest wealth quintiles. The significant economic costs of NCDs continue to be a major burden on the health budget, and NCDs also have implications for productivity and income losses at national, household and company/firm level.

45. Because of physiological needs, pregnant women, infants, children and adolescent girls are particularly vulnerable to the effects of poor nutritional quality: preventing malnutrition during pregnancy and the first two years of life is when most gains can be made in reducing morbidity and mortality and preventing the onset of NCDs later in life. For infants, food security is primarily about exclusive breastfeeding for the first six months of life and the introduction of nutritious complementary foods after this. Micronutrient supplementation (i.e. iron and folic acid) of pregnant women, children and adolescent girls is important when there are low levels of food fortification and consumption of nutrient rich food. Rates of death from diabetes and cardiovascular disease are higher among men than women, however.

46. This situation is strongly related to increasing dependence on poor quality imported food. Food imports arrive monthly by sea and, between one shipment and another, vegetables typically deteriorate to the point of becoming inedible. There is therefore a large unsatisfied need for fresh locally produced vegetables.

47. Fish is a very important component of the national diet and is vital to food security, particularly in the outer-islands where people are highly dependent on fish for daily nutrition. In the atolls, livestock rearing is difficult due to limited water supply and limited access to suitable animal feeds, thus making the sustainable supply of local fish as a source of quality protein even more important. Sustainable fisheries management and security of village marine food resources are therefore recognized in the national Food Security Policy as priority outcomes to ensure long-term food security in RMI. The role of Iroij (chiefs), local governments and the active involvement of communities are essential to realizing these outcomes.

48. **Tenure:** Land tenure in the RMI is based on a matrilineal society. All children inherit lands from their mothers. There are no landless people and their land tenure pattern is the most important single factor of their lives. All children become members of their mother's clan. However, the clan is not a factor in the land ownership pattern. Paramount chiefs in the Marshalls are not clan chiefs: their powers are associated with specific land parcels and the people that live on them. A land parcel is controlled by a paramount chief, a family head and an undetermined number of commoners.

49. **COVID-19:** In Marshall Islands, from 3 January 2020 to 5:15pm CEST, 30 September 2021, there have been 4 confirmed cases of COVID-19 with 0 deaths, reported to WHO. The first cases in the country were reported on 28 October 2020, among two members of the US Army Garrison, who were among a group of 300 Marshall Islanders abroad being repatriated. There was judged to be no threat of community transmission and no lockdown was implemented. As a result of RMI Government measures (including restrictions on international arrivals), COVID infection rates have been very low in the country to date (a total of four recorded cases), the pandemic has had major negative impacts on the tourism fishery-related sectors, and has also resulted in significantly increased the prices of imported foods. The Government has taken additional measures to address this situation, including the distribution of farming implements and fishing gear in order to support local food self-sufficiency. On 29 December 2020, the Marshall Islands became the first country in the Pacific to start its COVID-19 vaccinations. As of 24 September 2021, a total of 40,028 vaccine doses had been administered.

## Environmental problems and causes

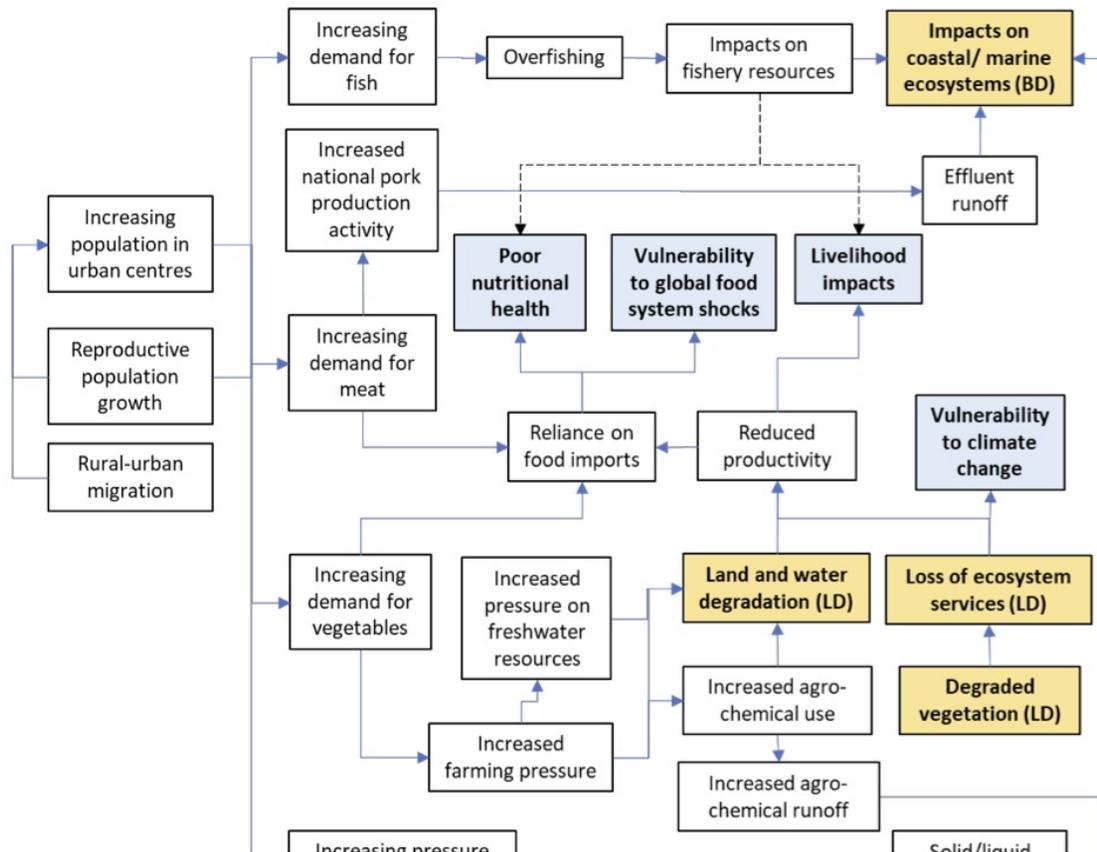
50. The overall problem statement may be summarized as follows:

- Food system conditions, coupled with population growth and urbanization, are causing the degradation of terrestrial, coastal and marine natural resources in the RMI, which are already under growing pressure from the impact of global climate change;
- Investments in development of the agriculture and food sectors, aimed at addressing issues of food supply (security and self-sufficiency) and nutritional quality, are unlikely to be environmentally sustainable (and risk exacerbating environmental problems) or to gain widespread and lasting uptake, unless they are adequately adjusted to environmental, social and cultural conditions and take into account traditional knowledge and governance structures;

51. The degradation of natural resources and ecosystems is itself undermining food system sustainability, in a vicious circle effect.

52. The environmental problems to be addressed by the project are summarized in Figure 1.

Figure 1. Summary of environmental problems and causes to be addressed by the project with potential “entry points”





53. Specific issues of concern shown in Figure 1, at the nexus between unsustainable food systems, land degradation and biodiversity loss, include the following:

- Increased and unsustainable pressures on the country's highly fragile soils and scarce freshwater resources, as a result of increased intensity of vegetable production with inadequate measures for sustainable land management;
- Pollution of coastal waters, with impacts on fisheries and biodiversity, arising currently and potentially from, for example, domestic sources in urban settlements, increases in livestock production (particularly in enclosed piggery systems), and from food value chain activities;
- Inadequate protection and management of coastal vegetation, given the vital ecosystem functions that it delivers, for example in buffering agricultural production against the effects of salt spray and sea level rise;
- Degradation of coastal fisheries due to overexploitation (associated directly with demographic growth and increasing demand) and poor management.
- Climate change impacts associated with effluent from livestock production systems, and from the long-distance transport of imported foodstuffs.

54. RMI faces additional challenges to food security stemming from the potential impact of climate change on our natural resources. Extreme events such as drought, extreme high tides, violent winds, and storm surges are the major risks to the low-lying islands that make up the country. On-going sea level rise is likely to cause significant problems through both contamination of ground water and erosion of land, coupled with changing weather patterns and changing migration routes of commercially exploitable.

55. These environmental problems, and the social problems (especially dietary-related non-communicable diseases, NCDs) with which they are inextricably linked, call for a transformation towards more sustainable food systems in the RMI, that are:

- Compatible with the carrying capacity of country's natural resources;
- Resilient and adaptive to environmental pressures, climate change and changing social conditions;
- Capable of providing the country's population with nutritious food;
- Capable of offering socially and economically attractive options to actors all along the length of food value/supply chains; and
- Adjusted to the "nature-intensive" traditional approach to natural resource management and farming that is predominant in the country.

### Barriers

56. Satisfying the country's food needs in an environmentally sustainable manner is unlikely to be achievable unless the following factors are addressed:

**1) Policy, planning and institutional conditions fail adequately to provide for integrated approaches to food system sustainability that address land/ecosystem degradation and biodiversity loss**

57. Together, key policy and planning instruments such as the Agriculture Sector Plan, the Food Security Policy and the Forestry Action Plan highlight the need for the sustainable production of nutritious food and the protection of the environment: they do not, however, as yet present a fully integrated approach to achieving this in ways that respond adequately to social, cultural, economic, logistical and environmental realities, such as the spatial dimensions of ecological and social interactions between land, coastal and marine elements of the land/seascape, and the evolving and uncertain nature of demographic and economic conditions and climate change impacts. This is reflected at ground level by limitations in land use planning and governance, that fail adequately to ensure that land uses are appropriately matched to land and ecosystem conditions, or to considerations of resilience and ecosystem service flows.

**2) Limited availability and knowledge of technical options for environmentally- and socially-sustainable landscape management, farming and food systems**

58. Loss of traditional agroforestry knowledge has accompanied the decline in engagement in agriculture activities by Marshallese households. Traditional knowledge of how to farm and care for domestic and traditional plants and animals is eroding. Even traditional forms of food preparation and preservation are unknown to many young people. Loss of traditional agroforestry knowledge has accompanied the decline in engagement in agriculture activities by Marshallese households. To date, international cooperation has focused heavily on commercial, technocentric approaches which have relied heavily on external support, with questionable sustainability. Agricultural extension systems have not succeeded in stimulating large-scale uptake of agricultural production practices and management systems that combine environmental sustainability with social and economic attractiveness, or that fully respond to the challenging and changing biophysical, demographic and economic conditions in the country.

59. Opportunities for local food production are particularly limited in the main urban centers of Majuro and Ebeye due to their high population densities, resulting from rural-urban migration: this also puts increasing pressure on water resources.

### 3) Food value chain/market conditions that are set up principally for imported foodstuffs of low nutritional value.

60. There has been a major shift in consumer preferences, especially among the urban population, towards imported foods with low nutritional value, and food supply/marketing systems perpetuate these preferences by focusing on price and convenience at the expense of nutritional, cultural and environmental values.

61. Despite the emergence of an organic agriculture movement in the country, sale of local and organic food in the urban centres is still very much a “niche” activity, for example through the small Majuro Local Food Market supported by Majuro Atoll Local Government.

### 4) Limited knowledge and awareness of alternative approaches to food system sustainability

62. The predominance in the country of external technocentric approaches to food production and natural resource management is in part due to inadequate flow of knowledge on the values of resilient traditional approaches and their implications for environmental values, resilience and nutrition: also lacking are mechanisms for combining this traditional knowledge with potentially valuable external knowledge contributions (generated in the country, elsewhere in the country or in regional research centres), and with reliable and relevant information on biophysical and social variables.

## 2) The baseline scenario and any associated baseline projects

63. Under the baseline scenario:

- There will be continued high reliance on imported food, with consequent high value chain GHG emissions, as well as social disbenefits in the form of poor nutrition and diet-related non-communicable diseases
- Weak environmental governance will undermine ecological and food system sustainability, for example through overfishing in the vicinities of urban areas and impacts on fisheries from the discharge of pollutants, especially in urban areas
- There is a risk that initiatives aimed at boosting national food security and dietary quality, if inadequately planned and executed, will increase extractive pressures on scarce freshwater lenses (already under pressure from climate change), degrade already nutrient-poor soils, lead to the pollution of soil and water resources and coastal ecosystems, by agricultural chemicals and the runoff of wastewaters from animal production facilities, and lead to the clearance of forest cover.

64. Although a movement towards self-sufficiency in agriculture is favored in the RMI's development policies, it is recognized that total self-sufficiency is impossible given demand for foods like beef which cannot be produced locally. The Marshall Islands National Development Plan (1981-1995) had as its first priority the attainment of self-sufficiency in basic foods, for both economic and health reasons. Two strands of this were the rehabilitation and replanting of coconut plantations and the development of vegetable production. Demonstration farms were established on Laura and Wotje in 1981 and 1982, both of which were supplying vegetables to urban Majuro by mid-1982. By 1983, there was little marketing of agricultural produce and grave concern was expressed about the heavy dependence of the experimental farms on fertilizer inputs making produce both expensive and declining over time. Efforts by UNDP through its Integrated Atoll Development Project to encourage agricultural development achieved only intermittent success mainly because of transport problems (UNDP 1991).

65. There is a growing movement in support of organic agriculture in the country, but this still remains at niche level, without a significant scale of insertion into value chains.

66. Baseline investments on which the project will build include the following:

- The GEF/UNDP R2R Reimaanlok project (2017-present): this combines Biodiversity and International Waters focal areas and has as its objective “to sustain atoll biodiversity and livelihoods by building community and ecosystem resilience to threats and degrading influences through integrated management of terrestrial and coastal resources” through expanding and sustaining the RMI protected areas network, and improved governance for integrated atoll management, within the framework of the National Conservation Areas Plan (Reimaanlok).
- Global Agriculture and Food Security Program (GAFSP): the Small Islands Food and Water Project (SIFWaP) seeks to contribute to reducing the fragility and the poor food, nutrition and water security. Agricultural systems are also addressed to ensure the production and availability of local nutritious foods. Climate change adaptation measures will be mainstreamed in agricultural production activities to increase climate resilience.
- GCF: Addressing Climate Vulnerability in the Water Sector (ACWA) in the Marshall Islands : This project will increase the resilience of water resources for drinking and hygiene in the Marshall Islands. Planned interventions include improving household and community rainwater harvesting and storage structures; and securing groundwater resources from seawater intrusion. The project will also strengthen the technical capacities of national and subnational institutions and key stakeholders to integrate climate change risks into water governance processes. This baseline will serve to reduce competition for water between different users, thereby increasing the availability of water for agriculture (including urban), and improving its feasibility.
- GCF: Pacific Resilience Project Phase II for RMI . The project will focus on enhancing the resilience of coastal infrastructure in the densely populated areas of the capital Majuro and the island of Ebeye. It will include strengthening institutions and improving access to early warning and disaster preparedness. The proposed coastal infrastructure intervention has been shown to be the only feasible option to protect people and assets against sea level rise and storms. This baseline investment in coastal resilience constitutes an essential element in integrated land/seascape management of atolls, but does not fully address linkages with sustainable food systems or the management of the land/seascape as a whole, and its different constituent land uses.
- The Japanese Technical Cooperation Project II for Promotion of Regional Initiative on SWM in Pacific Island Countries (JPRISM II) aims to create a sound Solid Waste Management System in Majuro, and has supported the Majuro Atoll Waste Company (MAWC) in the formulation of a Solid Waste Management Plan for Majuro. JICA baseline investments include the establishment of facilities for the separation and composting of green waste, but are yet to constitute a fully integrated circular economy system linked to the production and consumption elements of sustainable food systems.
- In addition to pandemic-related funding in 2020, the Asian Development Bank (ADB) also committed \$3 million for the Ebeye Water Supply and Sanitation Project and \$5 million for solid waste management in Ebeye .

### 3) The proposed alternative scenario

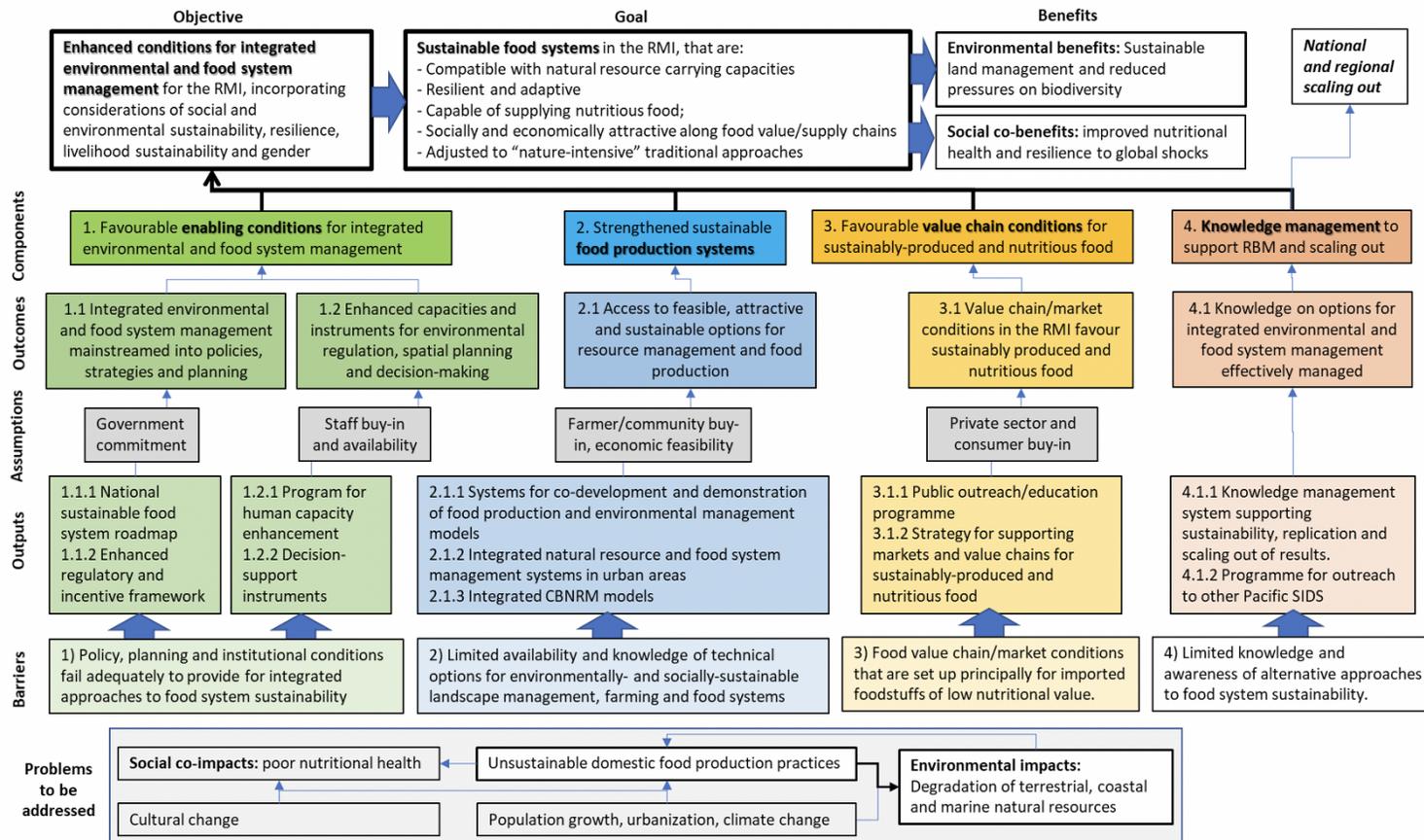
67. The Project Objective will be to transform food systems and land/seascape management in the Marshall Islands to deliver integrated global environmental benefits and health benefits.

68. The project will focus in particular on supporting the recognition of the values of traditional food system elements and natural resource management and governance practices, and their adaptive application within a context of evolving demographic, cultural, economic and climatic conditions in order to meet present and future nutritional needs in an environmentally sustainable manner. The project will contribute to land degradation neutrality (LDN), by applying an integrated land/seascape approach in which spatial flows of agro-ecosystem services and interactions are addressed and promoted, as essential underpinnings of sustainability; environmental, productive and social dimensions are considered in an integrated manner; and natural resources are subject to effective community-focused governance. This land/seascape ecosystem-based approach is also designed to generate biodiversity benefits, by addressing flows of negative impacts on terrestrial and aquatic biodiversity resulting from poor land and ecosystem management.

69. The focus of the project on resilient local food systems based on the environmentally-sustainable domestic food production will contribute to blue-green recovery by reducing the country’s reliance on imports from global food systems, which have proven to be highly vulnerable to global shocks such as the COVID-19 pandemic, as well as global climate change and economic crises. Another dimension of blue-green recovery will be its focus on resilient, sustainable and culturally-appropriate local livelihood support options, capable of generating food, ecosystem goods and services, employment and income, as fallback options or alternatives to the tourism, commercial fisheries and port-related employment on which much of the population currently depends and which has been heavily impacted by COVID-related restrictions.

70. The project Theory of Change is presented below .

## Theory of Change



71. The project will be highly strategic within the region given that similar challenges of growing population, urbanization, environmental degradation, climate change impacts, unsustainable food systems and nutritional problems are being faced by many other Pacific SIDS countries . In addition to delivering environmental benefits in terms of land degradation neutrality and biodiversity (ecosystem) conservation, it will directly contribute to the priority themes defined in the country's draft Food Systems Pathway, developed in the context of the UN Food Systems Summit in September 2021 :

- 1: Developing diverse and sustainable blue food production and consumption
- 2: Expanding sustainable green food production and consumption
- 3: Delivering lifelong nutrition and health education and awareness raising
- 4: Ensuring food safety in a complex system
- 5: Building inter-ministerial/cross-sectoral collaboration

72. The project will complement and build on the achievements of the GEF/UNDP R2R Reimaanlok project (2017-2022), the end of which is expected to coincide with the PPG period of this project: this project will incorporate the approaches to integrated atoll management supported through the R2R project, building on this through the incorporation of the added dimension of sustainable food systems .

73. Subject to final confirmation during PPG, it is proposed that the project will work on the following atolls (to be confirmed during PPG):

Municipality	Population (2011)		Land Area (km <sup>2</sup> )	Atoll area (km <sup>2</sup> )	Target locality
	Total	% of national total			
Majuro Atoll (capital)	27,797	52.3	295	9.71	Laura island
Kwajalein Atoll	11,408	21.5	2,174	16.4	Bigej island
					Ebeye island
Arno Atoll	1,794	3.4	338.7	13.0	Arno island
<b>Totals</b>	<b>40,999</b>	<b>77.2</b>	<b>2,807.7</b>	<b>39.11</b>	

74. These have been selected on the basis of a range of factors including their population, their area, their level of urbanization and the existence of areas with agricultural potential near to the urban centres.

#### **Component 1: Favourable enabling conditions for integrated environmental and food system management**

##### **Outcome 1.1 Considerations of integrated environmental and food system management are mainstreamed into policies, strategies and planning in the RMI**

###### *Output 1.1.1 National sustainable food system roadmap*

75. The project will help the Government of the RMI to complement the existing sector-based policy, strategy and planning instruments (including the 2013 Food Security Policy, the 2021-2031 Agriculture Sector Plan, the 2000 National Biodiversity Strategy and Action Plan, the Marine Resources Authority (MIMRA) Strategic Plan 2019-2023 and the 2019-2028 Solid Waste Management Plan for Majuro) by developing an integrated National Sustainable Food System Plan that will set out principles, strategies and a road map for addressing the country's food needs in an environmentally sustainable manner in the medium term. This will complement the existing sector-based policy, strategy and planning instruments (including the 2013 Food Security Policy, the 2021-2031 Agriculture Sector Plan, the 2000 National Biodiversity Strategy and Action Plan, the Marine Resources Authority (MIMRA) Strategic Plan 2019-2023 and the 2019-2028

Solid Waste Management Plan for Majuro), and specifically will support the implementation of the Marshall Islands Draft Food Systems Pathway, developed in September 2021 in the context of the UN Food Systems Summit. As proposed in the Draft Food Systems Pathway Document, this will be a collaborative and negotiated process involving both public and private sector actors, given the key roles that private sector actors (especially food retailers) play in shaping food demand and determining the nature of food supply, and their need for favourable business conditions to enable them to make positive contributions to food system sustainability and healthy diets.

*Output 1.1.2 Multisector platform on implementation of sustainable agri-food system roadmap and policy/regulatory adjustments*

76. The project will facilitate the establishment and functioning of a multi-stakeholder platform, involving public and private actors from across the range of relevant sectors, which will support and advise on the implementation of the roadmap and policy-regulatory adjustments. The composition and functioning of the platform will initially be defined during PPG, and confirmed at the start of project implementation, with a view to the platform becoming a permanent entity that will outlive the project itself and support ongoing negotiation and adaptive management of food systems issues into the future.

*Output 1.1.3 Enhanced regulatory and incentive framework for environmental management, addressing flows of impacts among sectors (e.g. environment, agriculture, urban development, nutrition, waste management, energy)*

77. The project will support an inter-sector review of current regulatory and incentive frameworks in terms of their implications for food system sustainability, and the collaborative definition of needs and opportunities for adjustments in order to address any identified conflicts and trade-offs. This collaborative, interactive process will build on an initial review to be carried out during project formulation.

**Outcome 1.2 Capacities and instruments for environmental regulation, spatial planning and decision-making, in support of the integrated environmental and food system management, are enhanced**

*Output 1.2.1 Program for the enhancement of human capacities in relation to integrated environmental and food system management*

78. An initial capacity assessment will be carried out during PPG, and a detailed assessment at project start, to identify key capacity gaps, and on the basis of this a capacity enhancement program will be formulated and implemented. This will target in particular actors in central and municipal governments and will focus on, for example, conceptual understandings of the relations between environmental (e.g. land degradation and environment) and food systems issues, and land degradation neutrality (LDN); and technical capacities in relation to environmental governance, spatial planning and decision-making.

*Output 1.2.2 Decision-support instruments in relation to integrated environmental and food system management (e.g. strategic environmental assessment, targeted scenario analysis, natural capital accounting and information management systems, LDN monitoring)*

79. The project will develop systems and human capacities in the different sector ministries involved to take objectively informed, quantitative and balanced decisions on how to manage the environment/food system nexus in the long term. This will mark a major area of value added relative to the more static, site-specific and sector-specific interventions that characterize the past and present baseline. These systems will include tools such as strategic environmental assessment (SEA), targeted scenario analysis (TSA) and natural capital accounting (NCA), and variables to be covered may include, for example:

- The sustainable productive potential of the country's natural resources (land, freshwater and coastal/marine)
- The environmental, economic and health implications (expressed in objectively comparable terms) of future scenarios of climate change and demography
- The potential returns achievable through alternative courses of action (such as the use of subsidies, fiscal incentives and direct investments to stimulate the production, retail and consumption of sustainable and nutritious food), in environmental, economic and health terms.

80. Application of the land degradation neutrality (LDN) approach will be supported through an LDN monitoring system, that will allow landscape-wide balances of land/ecosystem resources to be assessed, to guide management decisions and planning as part of an integrated landscape management framework

### Component 2: Strengthened sustainable food production and integrated natural resource management systems

81. Figure 2 depicts the integrated farming and land/seascape system and circular economy models to be promoted by the project, the elements of which are further detailed under the specific outputs.

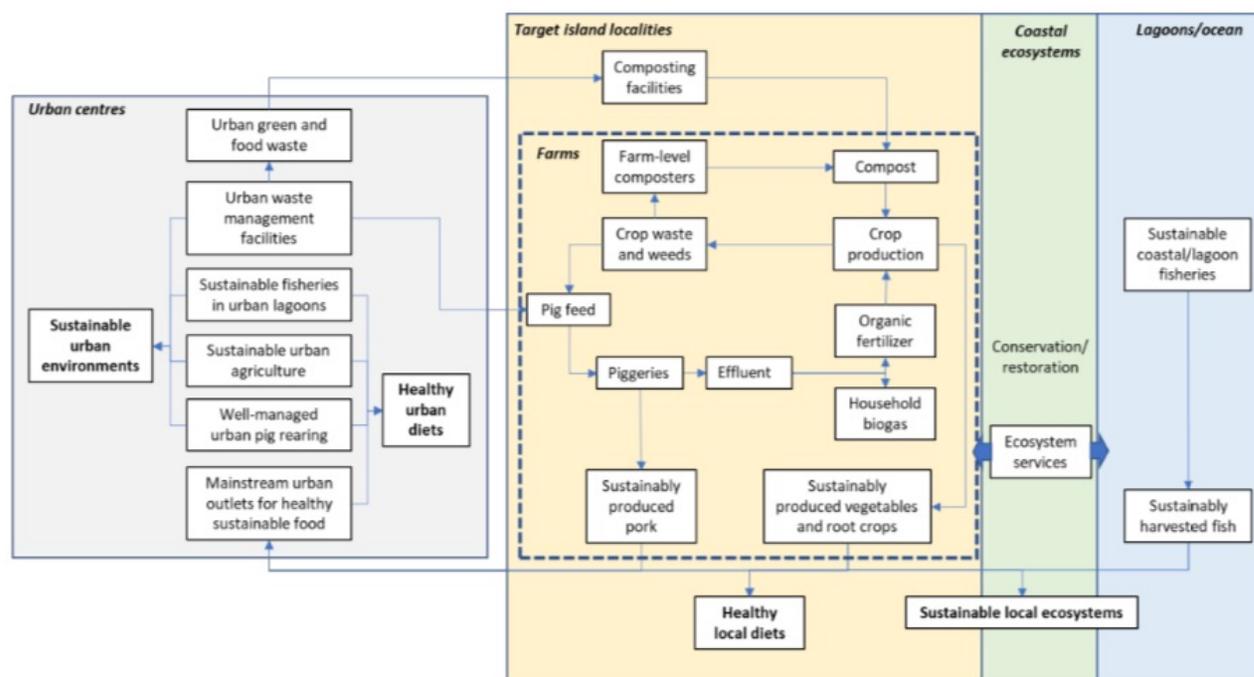


Figure 2. Integrated farming and land/seascape system and circular economy models to be promoted by the project

Outcome 2.1 Food system actors (including farmers, fishers and other local community members) have access to feasible and attractive options for resource management and food production that integrate considerations of environmental sustainability

*Output 2.1.1 Strengthened systems for the participatory co-development and demonstration of food production and environmental management models in rural and urban areas, featuring integrated farming systems and circular economy solutions*

82. At each of the target localities (see above), the project will fund the establishment of resource centres to support local communities in sustainable food production, land/seascape management and value chain participation. At Laura, this will build on investments by the Government of RMI in the existing Demonstration Farm, converting it into a resource centre with broader functions. These centres will focus on the promotion and application of sustainable farming systems capable of combining the generation of diverse environmental benefits with contributions to the country's targets of improving the supply of locally-produced nutritious food. The farming systems to be applied will be based on concepts of integration, agroecology and circular economies, including (as appropriate in each case and subject to the results of participatory planning based on the farmer field school approach):

- The production of vegetables and other food crops, including as appropriate traditional staples such as taro and arrowroot, using diverse multistorey agroforestry systems including low external input (and where possible organic) and integrated pest management practices, resulting in:
  - Enhanced cycling and retention of carbon, nutrients and moisture;
  - Avoidance of agrochemical contamination of soils, of freshwater lenses (which are currently highly limited and stressed by overextraction and sea level rise) and of lagoon and coastal waters (which are important fishery resources for local diets)
  - Reduced reliance on inorganic fertilizers with their associated GHG footprints (from production and transport).
- The establishment of small-scale enclosed piggery systems: this will focus strongly on a "circular economy" approach whereby:
  - The pigs' feed is complemented by fodder crops grown on the farm and agricultural waste/by-products (weeds, stems etc.), in order to reduce the need for feed imports and their associated cost and carbon footprint;
  - Piggery effluent is channeled into on-farm biodigesters that will provide an energy source on-farm use (including for the small-scale processing/value-adding of agricultural products), resulting in avoidance of GHG emissions and of contamination of soil, freshwater and atoll/coastal waters by effluent runoff;
  - Biodigester residues will be used as organic fertilizer for vegetable production (on farm, and potentially for distribution/sale to local farmers), avoiding the need for application of non-organic fertilizers.

83. The promotion of climate-smart traditional farming systems, and water capture/management technologies (in crop production and piggery systems) will also reduce extractive pressures on freshwater lenses.

84. These resource centres will be established and managed with the full participation of local communities (a series of consultations and participatory planning meetings have already taken place on Bigej). One of their functions will be as production centres, providing local communities with environmentally-sustainable sources of fresh, nutritious food, as well as income generation opportunities through the sale of food products (including value-added products where possible), especially to the urban centres of Ebeye and Majuro. They will thereby function as community-managed social enterprises, with project funds being used to provide technical, organizational and management support to ensure their productive feasibility, profitability and crucially their social sustainability (including considerations of gender equity and avoidance of elite capture). This on-site support will be complemented by support to the development of value chain linkages for food from the resource centres and the communities associated with them, as detailed under Component 3 below.

85. Crucially, they will also serve as extension nuclei/resource centres, in order to promote the adoption of the farming models by individual farm families more broadly across the islands and atolls on which they are located, and beyond. They will serve as resources for teaching and for participatory learning

(using the farmer field school approach), and for the low-cost supply of inputs (e.g. planting materials and equipment); they will also serve as value chain channels to facilitate marketing and value-adding of individual farmers' produce, as detailed under Component 3.

86. In addition to the agriculture-focused approaches, the project will provide technical support to fishing communities for the improved management of the lagoons and coastal shelves, including the strengthening of small-scale fishery initiatives undertaking improved sustainable fishing practices (based on the ecosystem approach to fisheries), together with value addition to fish products and improvement of the functioning of fisheries supply chains. This will result in improvements in the conservation status of the Marine Protected Areas (MPAs) in each of the target localities, as well as generating co-benefits in terms of food security, nutrition and income generation for local communities, especially women.

87. Figure 3 depicts how the resource centres will support local communities and also serve as channels for sustainably-produce food to urban centres.

88. Subject to further technical analyses and stakeholder consultations during PPG, the project may also support small-scale aquaculture (such as integrated backyard ponds, integrated with pig production) and fish aggregation devices (FADs) to contribute to environmentally sustainable increases in availability of fish protein.

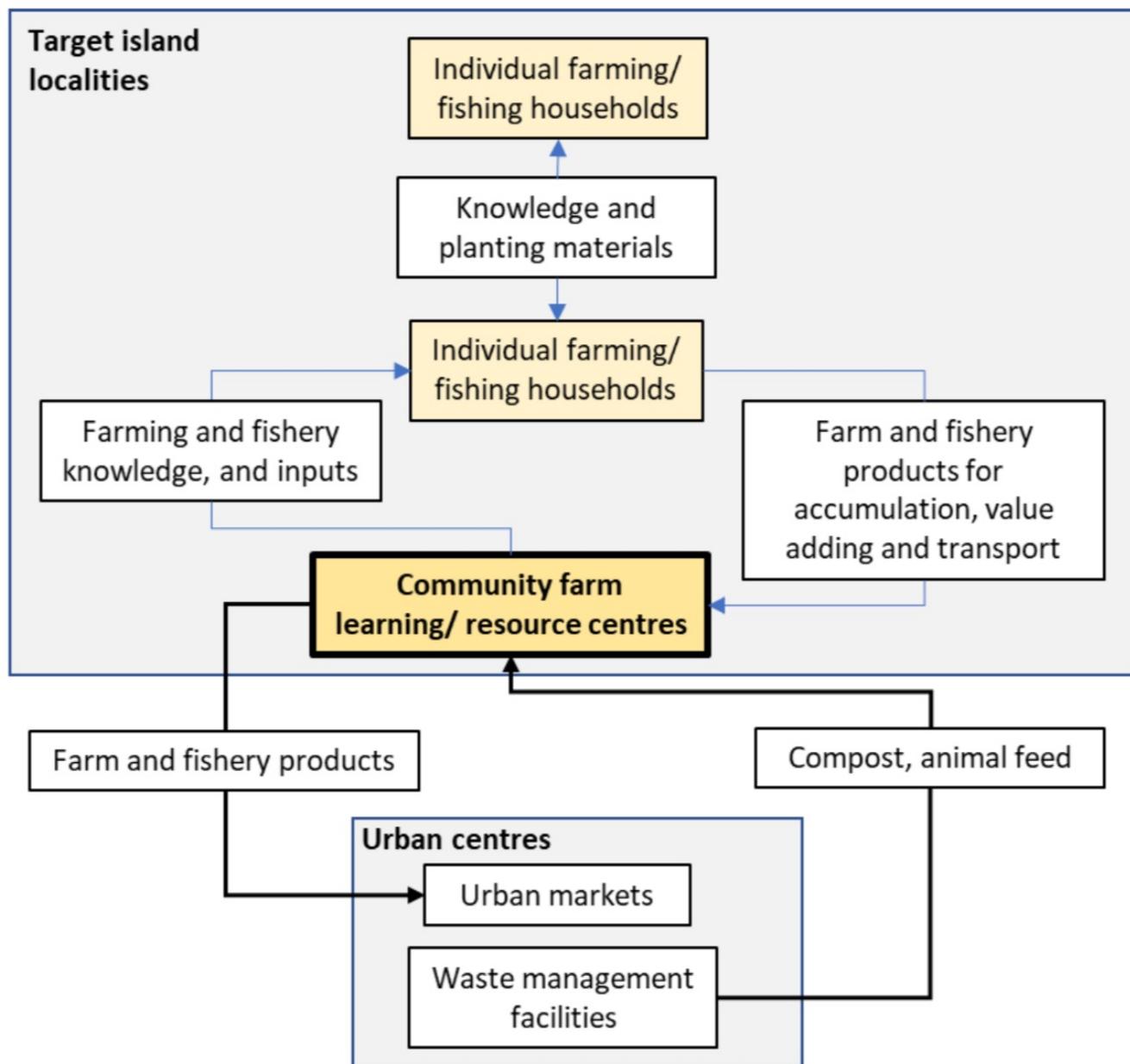


Figure 3. Roles of community farm learning/resource centres

*Output 2.1.2 Integrated natural resource and food system management systems in urban areas*

89. The project will support circular economy approaches to natural resource and food system management in the highly overcrowded and environmentally stressed urban areas.

90. In 2019 the Majuro Atoll Waste Company constructed a composting facility at Laura, and plans to bring most of the green wastes coming in to the final disposal site to the compost yard at Laura. Project resources will be used to advise on the management and use of the resulting compost for soil improvement, in the community-managed farm at Laura described under Output 2.1.1 and also in individual satellite farms elsewhere on the atoll, as well in ecosystem restoration activities such as the restoration of coastal vegetation to buffer against wind, salt spray and coastal erosion. The project will also advise on the establishment and management of similar facilities, using accessible appropriate technologies (including household level composting) in the other target locations of the project and potentially elsewhere.

91. The project will support the provision of technical assistance to urban agriculture in order to improve its environmental sustainability, addressing issues including: the improvement of backyard livestock management (especially pigs) in order to reduce pollution of freshwater resources and lagoon waters, and to improve the use of food wastes as pig feed; optimizing the management of scarce urban water sources for vegetable production, for example through the safe use of waste waters for small-scale vegetable irrigation; and the use of integrated pest management and organic fertilizers in order to avoid the risks of chemical pollution.

*Output 2.1.3 Community-based natural resource management models including multi-stakeholder dialogues and plans for social development and environmental management, integrating terrestrial, coastal and marine elements*

92. The model of sustainable integrated food systems to be supported through the project will be applied within a broader framework of integrated management of the land/seascapes within which food production takes place. This is essential in order to reflect the ways that food systems are affected by conditions in the broader land/seascape, depend on them for their sustainability (for example through flows of ecosystem services) and potentially impact them, their human populations and their global environmental values. Such considerations, which would not be addressed through a solely farm-limited approach, include for example:

- The close linkages that exist between lagoon, terrestrial and coastal/marine elements in terms of livelihood systems (which largely depend on a combination of terrestrial and marine-based activities and natural resources), tenure (based on wetos, which are strips of land that run across an atoll from the lagoon to the ocean) and resilience/vulnerability (terrestrial areas are highly threatened by sea level rise).
- The potential impacts on the management of freshwater lenses (e.g. extraction for domestic and agricultural use, contamination by different users) for water quality and availability among competing users;
- The potential impacts of different productive alternatives on natural ecosystems and on wild food (especially fishery) resources, for example through contamination by runoff of piggery effluent or agricultural chemicals;
- Competition for limited land and coastal resources by alternative uses (e.g. agricultural, urban and protective vegetation), and the need to tailor land allocation to each according to site conditions;
- The relation between coastal vegetation and the impacts of wind and salt spray on production;
- Social interactions and jurisdictional structures, which may determine the area of influence of outreach and scaling impact from the extension centres, and the identity of their populations participating in and benefiting from them, as well as the areas over which natural resource management (NRM) decisions

are taken and NRM governance applies.

93. The area of operation of the project in each target area will therefore be whole land/seascapes, and their constituent human communities, rather than solely the farms themselves. The scale and precise limits of the target land/seascapes in each locality will be confirmed during project preparation through participatory processes involving all relevant local stakeholder groups (such as fisher organizations) and local authorities, but normally they would include at least whole islands within the target atolls (for example Bigej island on Kwajalein) and would stretch from the oceanic coastal waters, across the terrestrial portion to the waters and reefs of the lagoon.

94. The project will facilitate community-based, land/seascape level processes of participatory planning and implementation of integrated landscape management, including:

- Participatory mapping of natural resources, analysis of their conditions (including trends, threats, and spatial flows of impacts and ecosystem services);
- Participatory analysis of the conditions and needs of the local communities in relation to NRM and how these relate to food systems;
- Multi-stakeholder dialogue and planning, resulting in medium- and long-term plans defining strategies and priorities for NRM and food system management, including their spatial configuration and addressing the relations, synergies and trade-offs among different objectives and land/seascape elements (especially between environmental sustainability and nutrition);
- Spatial and land-use planning to ensure that land and resource use is appropriately situated to maximize production without undermining or degrading ecosystem functions, services or biodiversity.
- Participatory formulation of specific thematic plans covering e.g. ecosystem restoration (based on the principle of nature-based solutions); co- and community-based management of fisheries (based on the ecosystem approach to fisheries); agricultural production and value chain development; freshwater management; and nutrition.
- Review, and adjustment where necessary, of norms and regulations related to natural resource management and productive activities, such as agrochemical use, effluent management, fisheries (e.g. no-take zones and seasons, catch quotas, size limits).
- Strengthening of community-level NRM governance mechanisms including procedures for oversight and sanctions.

95. These processes will all be determined by detailed participatory baseline analyses during project formulation, in order to ensure that they appropriately build on, rather than duplicate or undermine, existing planning processes and governance structures (including traditional community-based governance).

96. In accordance with the results of these community-based planning processes, project resources will be used to provide direct support to the restoration and protection of key ecosystems, including for example coastal forests and mangroves, in order enhance their abilities to provide ecosystem services including buffering against salt spray and the habitat for fish populations.

### **Component 3: Favourable value chain conditions for sustainably-produced and nutritious food**

#### **Outcome 3.1 Value chain/market conditions in the RMI favour sustainably produced and nutritious food**

*Output 3.1.1 Public outreach/education programme (including school education) focused on sustainably-produced and nutritious food, including traditional crops*

97. There is a need for a nationwide change of mindset regarding food purchasing and dietary habits, moving from the currently dominant preference for convenient low nutritional value foods with high environmental impact, to a recognition of the nutritional, cultural and environmental value of sustainably-produced local food, including agricultural, tree-based and fisheries products. This needs to move from being a niche issue to being placed in the mainstream

of consumers' decision making. The justification for the use of GEF funds to this end will be the potential to associate the leverage of environmental benefits with the improvement of nutritional habits, through purchasing decisions. Project resources will be used to support public information campaigns, for example through television and radio slots, information boards, and educational materials to be used in school settings: detailed proposals of outreach strategies tailored to local resources and cultural conditions will be developed during PPG.

*Output 3.1.2 Strategy for supporting markets and value chains for sustainably-produced and nutritious food*

98. At present food retail in the urban centres is almost exclusively through supermarkets: these receive food imports through monthly container shipments, and much of the fresh produce typically spoils between one shipment and another. There is therefore a large unsatisfied potential demand for fresh produce which, given the infrequency of shipments, would need to be supplemented by local production. The trade in locally-produced food in urban centres is largely limited to small niche markets such as the Majuro Local Food Market, and one-off purchases for social occasions. The project will work with local retailers on the high-visibility placement of sustainably-produced and nutritious local food in the supermarkets on which the urban population in Majuro and Ebeye principally rely for their food purchases. This will be complemented by support to the development of advertising materials. Crucially the project will also provide support along the length of the value chain in order to ensure that produce arrives on the supermarket shelves in a reliable and timely manner, and is of consistent high quality: this will involve the technical and organizational strengthening of producer organizations in the areas of origin, to enable them to negotiate effectively with retailers; to plan production in accordance with future demand; to carry out high quality post-harvest management, packaging and, as appropriate, processing for value-addition; and to organize reliable storage and transport, especially for fresh produce, in order to ensure timely market access.

99. This approach is in accordance with the Marshall Islands Draft Food Systems Critical Pathway 5.2, "Incentivize the private sector to realign its resources to sustainably deliver healthier diets". This recognizes that there is a vital role for the private sector in reforming the RMI food system, and that government must work in partnership with those businesses operating within the food system to help bring about the required food system transformation. It proposes that encouraging Corporate Social Responsibility within businesses domestic to, and operating within, the RMI has an important role to play in encouraging consumption patterns that support sustainable, local food production and drive improved nutrition and health outcomes. Highlighting meals and products made with locally produced products is one way of doing this. The potential role of tax incentives and disincentives will be explored: for example, restaurants incorporating a specific proportion of local foods in their menus, or those partnering with local suppliers, may qualify for specific tax concessions. In addition, there is role for taxes to be placed on highly processed goods and those containing high levels of fats, salt and sugar. Key stakeholders are the Ministry of Finance (MOF), the Ministry of Natural Resources and Commerce (MNRC) and the private sector (both food retail and hospitality, amongst others).

#### **Component 4: Knowledge management**

**Outcome 4.1 Knowledge on options for integrated environmental and food system management is effectively managed to permit scaling elsewhere in the country, and in other atoll states and elsewhere (particularly SIDS)**

*Output 4.1.1 Knowledge management system supporting sustainability, replication and scaling out of results.*

100. The project will place a strong emphasis on knowledge management and outreach, with the aim of positively influencing perceptions of stakeholders throughout the country regarding the need and options for transformation towards increased sustainability of food systems. A review of information management conditions and needs in the agriculture sector was carried out in 2005, and this will be updated and extended to cover other issues related to food system sustainability. The cross-sector platform proposed under Output 1.1.2 will be a key channel for the inputs of this knowledge into planning and decision-making processes at national level, in relation to food systems.

#### *Output 4.1.2 Programme for outreach to other Pacific SIDS*

101. The project has major strategic potential in the region, as a catalyst and source of lessons on sustainable food system and integrated land/seascape management for scaling out throughout the region, especially the atoll countries of Micronesia and Polynesia. Regional entities such as the South Pacific Regional Environment Programme (SPREP), the Pacific Community (SPC) and the University of the South Pacific (USP) will be used as channels for knowledge exchange and outreach across the region, as well as (with FAO support) global mechanisms such as the Agroecology Knowledge Hub.

#### **4) Alignment with GEF focal area strategies**

102. **Land degradation:** the project will contribute to LD Objective 1 (to support on the ground implementation of SLM to achieve LDN), and specifically to outcome 2 “diversified agro-ecological food production systems”, including efficient use of land, soil, water, and vegetation in crop and livestock production systems, including temporal diversification and spatial diversification at various levels, including plot, farm and landscape.

103. **Biodiversity:** the project will contribute principally to GEF-7 BD Objective 1: “Mainstream biodiversity across sectors as well as landscapes and seascapes”, and specifically “Biodiversity Mainstreaming in Priority Sectors”, through its investments in:

- Improving and changing production practices to be more biodiversity-positive with a focus on sectors that have significant biodiversity impacts. It will have a primary focus on agriculture, and a secondary focus on forestry and fisheries.
- Spatial and land-use planning to ensure that land and resource use is appropriately situated to maximize production without undermining or degrading biodiversity.
- Developing policy and regulatory frameworks that favour biodiversity-friendly traditional production and resource management systems.

#### **5) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF and co-financing**

104. The project will combine the delivery of global environmental benefits with contributing to the aim of RMI Government to improve dietary health among the population, and reducing food imports.

105. Without GEF support, the development of the food and agriculture sectors would focus largely on technocentric approaches with high requirements of ongoing investment and technical support, and the issues of food production, natural resource management and health would be viewed in isolation from each other, without adequate consideration of the relations and flows of ecosystem services between different elements of the land/seascape. As a result, there would be a risk that production practices, and declining appreciation of traditional sustainable management systems, coupled with climate change, would lead to the degradation of land, water and vegetation resources, and of terrestrial and aquatic ecosystems.

106. GEF incremental support will focus on bringing about a transformation of how food systems are viewed and approached in the Marshall Islands. This new food systems vision will involve:

- Increased recognition of the value and potential of traditional foods, farming systems and natural resource management systems, in terms of their contributions to land degradation neutrality, ecosystem protection and health;

but also the need to combine them with exogenous ideas (subject to participatory validation) and to adapt them to changing conditions and emerging challenges (including demographic growth, cultural change and climate change).

- “Joined-up thinking” on how dietary health is dependent on a diverse and sustainable food supply, and how this in turn relies on the sustainability of the management of food production systems (crops, wild food and fish); and in order to be sustainable food production in turn needs to be embedded within land/seascapes that are subject to integrated management that recognizes ecological interactions and spatial flows of ecosystem services;
- The introduction of a “circular economy” approach that will reduce waste and pollution, and improve resource use efficiency, by linking together different food system and resource management elements in both rural and urban areas;
- A community-based approach to food system and natural resource management, promoting interactions among individual farms centred on learning and resource hubs; participatory learning, experimentation and knowledge exchange; and natural resource governance building on traditional cultural mechanisms.
- A value-chain approach that aims to address current challenges by supporting the grouping of farmers, and the coordination and bulking of their production (in order to reduce transport and transaction costs, increase their market negotiation power and ensure reliability and quality of supply), and by working with private sector value chain actors (particularly retailers) to insert local sustainable products as mainstream, rather than niche, items in urban outlets.
- Enhanced human and systemic capacities for planning and managing landscapes and food systems for the generation of multiple benefits, including tools for evidence-based decision-making and LDN monitoring.

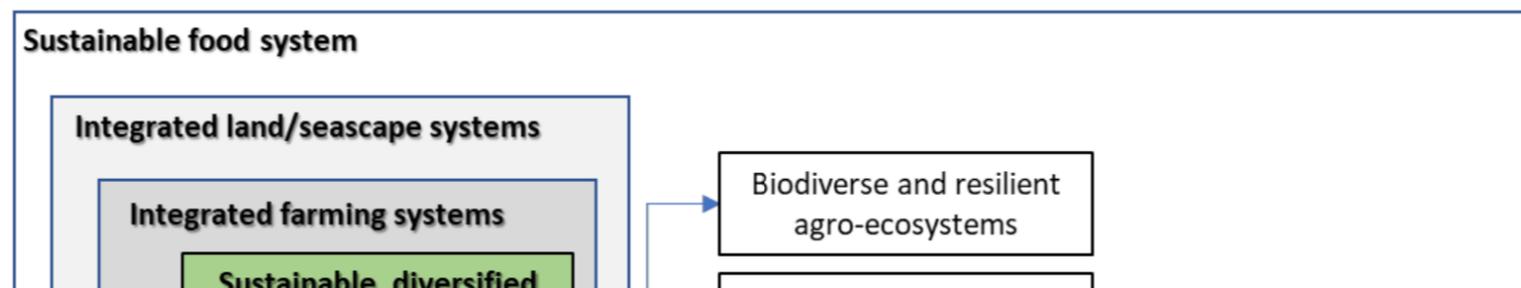
107. This will result in incremental global environmental benefits in terms of the sustainability of the management of soils, water and vegetation (contributing to land degradation neutrality at land/seascape level) and the improved protection of natural ecosystems of importance for biodiversity.

108. The project will build on a significant baseline, much of which will also constitute cofinancing, including the following:

- The R2R Reimaanlok project will generate important experiences and capacities in integrated atoll management, which will be applied in this project – the project will build on this by introducing food systems elements;
- GCF support to climate change resilience under the Pacific Resilience Project Phase 2 for RMI, which will include major investment in the restoration of coastal ecosystems, which will constitute core elements of the integrated land/seascapes in which the project will work, helping to buffer the food production systems against the effects of climate change;
- ABD and JICA support to waste management: important advances have already been made with the separation and composting of green wastes, and the project will build on these to support their integration into sustainable food production systems.

## 6) Global environmental benefits (GEFTF)

109. Figure 3 highlights the technical options on which the project will work, and the justifications of each of these in terms of their potential to contribute to environmental and social benefits.



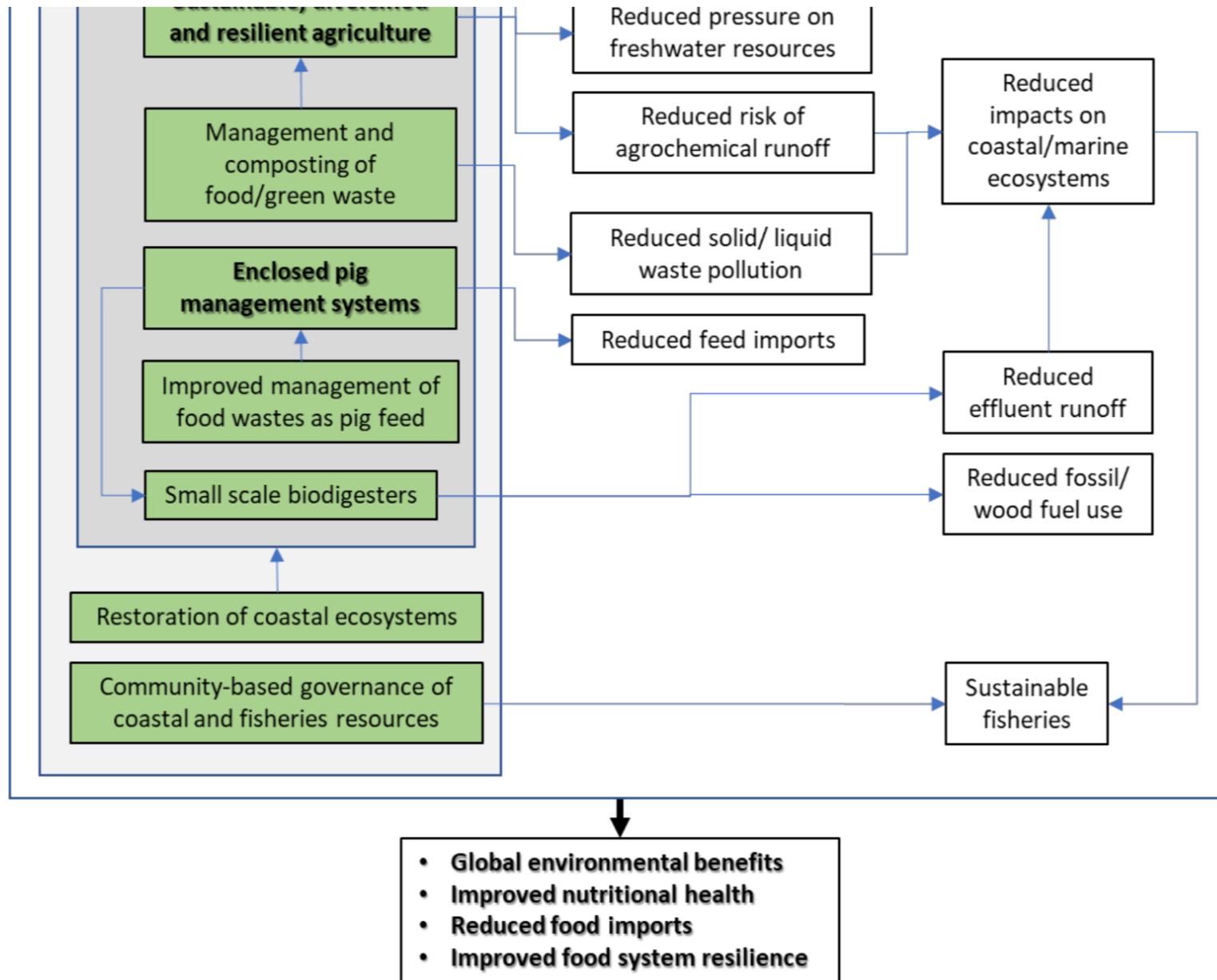


Figure 4. Technical options and their links to environmental benefits, within an overall food system framework

110. The project will deliver global environmental benefits (GEBs) under each of the target GEF-7 focal areas, as follows:

- **Land degradation:** support to sustainable, diversified low-input traditional farming/agroforestry systems will result in the maintenance and improvement of soil fertility and agroecosystem function (including natural predator/pest balances and nutrient cycling), which in turn will lead to a reduction in the contamination of soil, freshwater and marine/lagoon waters by pesticides and inorganic fertilizers. The promotion of climate-smart traditional farming systems, and water capture/management technologies (in crop production and piggery systems) will also reduce extractive pressures on freshwater lenses. The project will contribute to land degradation neutrality through the application of a landscape approach, supported by land use planning, decision-making and monitoring tools and capacities, and including ecosystem restoration and protection, thereby maintaining and promoting flows of ecosystem service across the target land/seascapes (such as the protection of agricultural production systems from salt spray, and the provision of reproduction/nursery habitat for fisheries).
- **Biodiversity:** support to sustainable, low input and appropriate-technology farming (crop and livestock) production systems, and improved waste management, will result in reductions in flows of organic and inorganic pollutants (including agricultural chemicals, piggery effluent and domestic wastes) into coastal and aquatic ecosystems (coral reefs, mangroves, lagoons and coastal waters), which are of vital importance for fish populations and for migratory birds. This will result in improvements to the Management Effectiveness Tracking Tool (METT) scorecard ratings for the marine protected areas (MPAs) in each of the three target islands. Support to traditional diversified production systems will also contribute to the conservation of agricultural biodiversity: in small Pacific islands [such as those of the Marshall Islands], sustainability depends largely on traditional agrobiodiversity, and the most culturally useful and highly threatened biodiversity is normally found within the fabric of active garden areas rather than in virgin forests.

111. The project will contribute to the following Aichi Biodiversity targets:

- Target 6: All fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches (the integrated atoll management approach of the project will also address community-based fisheries in lagoons and coastal waters)
- Target 7: Areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity (forest areas, in the form of coastal vegetation, which be subject to improved management) .
- Target 8: Pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity (the project will address the risk of pollutant flows into lagoons and coastal waters from agriculture and piggery systems).
- Target 10: The multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning (integrated atoll management, including ecosystem-based fisheries and reduction of pollutant runoff, will reduce pressures on coral reefs).
- Target 13: The genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity (the project will support local communities' management of traditional crops, including tree-based crops, which are being marginalized by cultural and dietary shifts).
- Target 14: Ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable (the project will support the management and restoration of coastal ecosystems, which provide buffering services against salt spray and sea level rise, as well as contributing to the recharge of freshwater lenses).
- Target 15: Ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification

(the restoration of coastal ecosystems under Core Indicator 3.1 and the improved management of coastal ecosystems under 4.1 will contribute to ecosystem resilience

- Target 18: The traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected (the project will support the recovery, maintenance and promotion of traditional practices of production and natural resource management).

112. As a co-benefit, the project will contribute to climate change adaptation by promoting the use of resilient, diverse farming systems capable of withstanding impacts such as extreme rain events and droughts; providing alternative income sources to buffer livelihoods against CC-related failure; and improving the condition of coastal ecosystems capable of buffering farming systems against the effects of CC-related sea level rise and salt spray.

## **7) Innovation, sustainability and potential for scaling up.**

### ***Innovation***

113. The project will be highly innovative in the context of the Marshall Islands by virtue of:

- Its promotion of systems-based “circular economy” approaches linking sustainable production, healthy consumption and sound environmental management;
- Its aim of combining traditional knowledge, and traditional approaches to food systems and natural resource governance and management, with external technical inputs (subject to local validation), supported by objective science-based decision support tools.

### ***Sustainability***

114. Social sustainability of the models to be promoted will be furthered through the use of proven participatory methods for technology generation, dissemination, selection and adaptation based on the Farmer Field Schools approach which FAO has pioneered globally, and through the project’s focus on working with a base of traditional crops and farming/resource management systems with which local people are already familiar. The project will also promote broader sustained cultural support through its investments in outreach to the population as a whole regarding the importance of sustainably-produced, healthy food.

115. Financial sustainability will be ensured by adopting a whole value chain approach, supporting groupings of producers at the supply end in order to realize efficiencies and economies of scale, permit post-harvest care and value adding, and increase farmers’ bargaining power; while at the same time working with retailers in order to promote the mainstream insertion of sustainably-produced local food into urban outlets.

116. Environmental sustainability will be ensured through the promotion of an ecosystem approach that will maintain ecological functioning, and a landscape approach that will maintain and support essential ecological interactions between different land/seascape units.

117. The RMI draft Food Systems Pathway recognizes that the transformation of the RMI food system is complex and requires a consistent, cross-sectoral commitment and action. To be successful, this commitment must come from across all sectors and all levels of RMI society, as well as from the partner organizations at the international level. This itself requires extensive coordination and oversight to maintain momentum, ensure monitoring, identify synergies between existing policies, strategies and projects, and facilitate ongoing stakeholder engagement. To achieve this (as Critical Pathway 5.1: ensure ongoing cross-sectoral collaboration to maximize progress towards shared goals and to enable project synergies to be capitalized on), an external, independent and impartial RMI Food System Transformation Clearinghouse will be established. This Clearinghouse will support the logistical aspects of following through on the Transformation Pathway, thus removing the potentially extensive capacity burden from government. It will facilitate ongoing Dialogues to ensure the

development of a clear inter-ministerial strategy and national plan, with measurable targets, and will ensure that relevant data is accessible to all parties. GEF project resources will be used, under Component 1, to support the establishment of the Clearinghouse and the facilitation of dialogues of the inter-ministerial strategy and action plan, including advisory support to ensure that these adequately considerations of environmental sustainability, especially in relation to land degradation and biodiversity.

118. The project will be implemented by national counterpart entities in order to maximize ownership and institutional sustainability. Capacity assessments of project partners and counterparts will be carried out during project formulation, and implementation arrangements configured accordingly, taking into account possible needs for external technical expertise to be contributed in complement to that of the Government, taking advantage of FAO's institutional expertise in relation to sustainable food systems. Capacity enhancement investments by the project will be specifically focused on ensuring the existence of knowledge, technical capacities and operational/financial capacities required in order for the project's results to be sustained in the long term. Technical approaches and tools to be promoted and supported both at farm/community and institutional levels will focus in particular on appropriate options that are compatible with cultural norms, operational conditions and institutional capacities.

### ***Scaling***

119. The environmental and food systems issues found in the Marshall Islands are repeated across much of the Pacific, especially the atoll countries of Micronesia and Polynesia. There is therefore major potential for this project to act as a laboratory from which models and lessons on sustainable food systems can be scaled out throughout the region, taking advantage of regional entities such as SPREP, SPC and USP, and global mechanisms such as the Agroecology Knowledge Hub and the World Overview of Conservation Approaches and Technologies (WOCAT), with both of which FAO is closely involved.





## 2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities Yes

Civil Society Organizations

Private Sector Entities

If none of the above, please explain why:

121. In preparation for and during the process of PIF formulation, consultations were held in a participatory manner with inputs from stakeholders from Majuro, Kwajalein and Arno (including local landowners, traditional community leaders and elected representatives, as well as other community members, both male and female). Various appraisal approaches were used throughout the process to ensure the involvement of all stakeholders and to start building partnerships at the beginning of the process. This approach also ensured that the stakeholders within the communities shared a feeling of empowerment and ownership right from the planning phase, which should follow through to implementation and participatory monitoring and evaluation. The consultation process was guided by the contributing principles that would lead to economic, social and environmental sustainability.

**In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement**

### Stakeholders

122. A social engagement specialist will be contracted using PPG funds. The specialist will carry out a gender-sensitive stakeholder analysis to identify and characterise all key stakeholder groups that need to be engaged in project formulation, in function of their potential to be affected positively or negatively by the project, and their potential to participate in its implementation.

123. A national inception workshop will be carried out at the start of the PPG phase, to communicate and further discuss the proposals presented in the PIF, and to agree on the stakeholder engagement to be carried out through the PPG phase. All key initially identified Government and civil society stakeholders will be invited to participate in this workshop, including representatives of the populations of the target atolls (local Government members and CSOs), with particular attention paid to ensuring the adequate participation of women and their organizations. This will be complemented by atoll-specific inception processes to ensure broader community participation.

124. The detailed context and problem analyses, and the definition of solutions, to be carried out during PPG will include inclusive gender-sensitive participatory processes such as participatory rural appraisal (PRA) workshops and focus groups.

125. Participatory validation workshops will be held towards the end of the PPG phase, at national and atoll-specific levels.

126. During PPG, a detailed gender-sensitive stakeholder analysis and engagement plan will be developed for the project implementation phase.

### Project Stakeholders

	Stakeholder Name	Stakeholder Type	Stakeholder profile	Roles
1	Ministry of Natural Resources and Commerce (NRC)	<i>Partner</i>	<i>National Government Institution body</i>	Primary government organization responsible for Agriculture, Energy, Trade

				and Investment.  Includes the Agricultural Production Services Division, which provides agricultural extension support and will work through the project to promote sustainable farming systems.
2	Environmental Protection Authority (RMIEPA) of NRC	<i>Partner</i>	<i>National Government Institution body</i>	Responsible for preservation and improvement of the quality of the environment. Will participate in the formulation and implementation of activities related to environmental planning and governance.
3	Climate Change Directorate of RMIEPA	<i>Partner</i>	<i>National Government Institution body</i>	Office of the GEF OFP
4	Marine Resources Authority (MIMRA)	<i>Partner</i>	<i>National Government Institution body</i>	Responsible for the regulation of marine resources: will work with the project on activities related to sustainable fisheries.
5	Ministry of Health and Human Services (MOHHS)	<i>Partner</i>	<i>National Government Institution body</i>	Responsible for nutrition policy and programs. Will participate in the formulation and implementation of project activities in support of nutritional dimensions of food systems.
6	Marshall Islands Organic Farmers Association	<i>Indirect Beneficiary</i>	<i>Non-Governmental Organization</i>	Will work with the project to support production and value chains for agricultural product.
7	Community members	<i>Direct beneficiary</i>	<i>Local communities</i>	Principal actors and beneficiaries: responsible for management of demonstration farms as community-based enterprises and resource hubs; co-definition and application of natural resource governance mechanisms; and beneficiaries of technical and organizational capacity enhancement in relation to sustainable production, resource management and value chains

### 3. Gender Equality and Women's Empowerment

**Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).**

127. A detailed gender-sensitive stakeholder analysis will be carried out during project preparation, and a gender action plan developed. This will identify strategies and mechanisms to ensure that women are adequately and equitably involved in project implementation, as well as for the enhancement of capacities and mechanisms to ensure that this participation is sustained in the long term.

128. Women will be particularly important participants in, and beneficiaries of, the project given the customarily important roles that they play in relation to food production and family nutrition. The project will help to ensure that women have easy access to nutritionally high value and affordable food both for themselves and their families. It also has the potential to provide opportunities for women to enjoy increased participation in food value chains, with consequent improvements in their economic and power status.

129. The National Food Security Policy, with which the project will be fully aligned, recognizes that the empowerment of women is essential to raise levels of food and nutrition security and improve production and distribution of food and agricultural products, and proposes as its Strategy 1.9 "Ensure that all intervention programs are gender focused and gender responsive. Although extension services will be directed to all producers special attention will be given to women in recognition of their critical role in family household management and nutrition" .

130. The project will seek to contribute to closing gender gaps in access to and control over natural resources, improving women's participation and decision-making, and generating socio-economic benefits or services for women, by:

- Facilitating the identification and selection, and supporting the application, of options for food production and natural resource management which permit full and real participation of women in control over resources and the enjoyment of social and economic benefits, such as small-scale (including backyard) vegetable production and artisanal fishing;
- Supporting women's participation in value-adding and marketing activities for sustainably-generated produce (marketing of vegetables and handicrafts is a sector which is currently dominated by women, so increases in volumes of production and sale will proportionately benefit women);
- Facilitating the mainstreaming of gender into the community-level planning and governance mechanisms that will be supported under Output 2.1.3, by seeking to ensure a) women's adequate participation in the mechanisms in terms of size and effectiveness of representation and b) the consideration of gender in the mechanisms, both as a cross-cutting issue and through specific gender-positive initiatives.

**Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes**

**closing gender gaps in access to and control over natural resources; Yes**

**improving women's participation and decision-making; and/or Yes**

**generating socio-economic benefits or services for women.** Yes

**Will the project's results framework or logical framework include gender-sensitive indicators?**

Yes

#### 4. Private sector engagement

**Will there be private sector engagement in the project?**

Yes

**Please briefly explain the rationale behind your answer.**

131. The project will engage closely with private sector actors especially on the retail end of domestic food value chains in the RMI such as store owners (see Output 3.1.2), working with them to support the placement of sustainably produced food items in retail outlets. The forms of collaboration (to be confirmed during PPG) are expected to include: project support to the development of promotional materials highlighting the quality and health benefits of domestically produced food; the organization of fairs and tasting sessions to stimulate interest both among the retailers and their customers; and support to medium- and long-term value chain planning, based on analyses of supply, demand and profitability, in order to provide the private sector actors with increased confidence of the commercial viability of the products, thereby helping to ensure the sustainability of their buy-in. As explained under Output 3.1.2, the Marshall Islands Draft Food Systems Critical Pathway 5.2 proposes that government must work in partnership with those businesses operating within the food system to help bring about the required food system transformation, including through exploration of the potential role of incentives such as tax concessions for restaurants incorporating a specific proportion of local foods in their menus, or those partnering with local suppliers.

## 5. Risks to Achieving Project Objectives

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

Description of risk	Impact	Probability	Mitigation actions	Responsible party
Limited pool of qualified individuals to lead or carry out project activities	Moderate	Moderate	Focus on capacity development to build human resource pool; explore national and international recruitment; agree on realistic timetables for implementation due to potential delays in recruitment; back-stopping and recruiting through CMAC agencies; utilize technical advisors and counterparts.	Project executing agency, FAO and partners
Weak coordination among project partners; government partners are overloaded; limited coordination with outer island leaders	Moderate	Moderate	CMAC, interagency committees created and meet regularly; senior staff participating; workplan endorsed by Chief Secretary; foster strong ownership of the project by mainstreaming project objectives into government process.	Project executing agency, FAO and partners
Poor communications and limited travel to outer islands	Moderate	High	Budget for and purchase cell phones (where service) or SSB/HF radio with antenna. Use ship when airlines down. Consult with atoll leaders through use of mobile and other communications if face-to-face meetings are limited. Travel costs allocated in project budget.	Project executing agency, FAO and partners
Weak enforcement of law	Moderate	Moderate	Assess and address reason	Project exec

s			s why specific laws are not respected or enforced. Include issues of enforcement in education and awareness campaigns.	uting agency, FAO and partners
Limited receptiveness to dietary changes among urban population	Moderate	Moderate	Collaboration with Ministry of Health on outreach on dietary issues (linking environmental, cultural and health issues); collaboration with private sector entities on publicity campaigns and product placement to promote uptake in urban retail outlets.	Project executing agency, FAO and partners
Limited interest in sustainable traditional agriculture among young people	Moderate	Moderate	Promotion of financially viable value chain opportunities based on sustainable agriculture; tailoring of outreach and extension campaigns to suit young people.	Project executing agency, FAO and partners
Climate change (especially increase in extreme rainfall events with potential for crop damage; sea level rise with potential for increase soil and water salinity, and salt spray impacts; and increase in sea temperatures, potentially affecting coastal and lagoon fisheries)	high	high	Focus on promotion of diversified traditional farming systems with a high degree of inherent climate resilience; application of sustainable livelihood approaches to ensure diversified and therefore resilience household livelihood support strategies; promotion of ecosystem and landscape approaches and nature-based solutions, including the protection and restoration of the roles of ecosystems in buffering against climate change impacts such as sea level rise and salt spray	Project executing agency, FAO and partners
COVID19 pandemic related impacts on the intern	high	high	1. If there are changes in co-finance, then	Project executing agency,

al and international travel, operation of government/ partners/ project; health impacts on general population as well as economic impacts nationally and locally

1. Reduced financial (co-financing) support from Government, development partners, and private sector, due to limited overall funding availability resulting from the COVID-19-related economic downturn, and/or the reorientation of available funding to actions directly related to COVID-19
2. Government expenditure and prioritization of different programs and sectors, including agriculture, food security and natural resources might change.
3. Closure of offices, transport etc. will delay launch

partners to work closely to seek alternative options for co-financing and ensure continuity of resource allocation to ongoing initiatives in project target areas.

2. It is anticipated that the project scope will help to support the Government's response to COVID-19 through its focus on food security and livelihoods diversification of vulnerable communities. However, project activities will be further discussed with the Government to ensure that emerging priorities and responses, as a result of the pandemic, are well reflected in the project's target areas during implementation.
3. It is likely that periodic closures of transport and offices as well as restrictions on organizing meetings/ training with large number of people will impact project implementation. Th

FAO and partners

ch of project and its implementation.

4. Potential or partial disruption of food system supply chains, such as logistics
5. Increased losses and spoilage in high value commodities
6. Disruption of demand for products and markets, due to temporary closure of hotels and restaurants
7. Higher dependence on natural ecosystems, as people who lose employment and income from other sectors depend more on them for their livelihoods, thereby increasing pressures on them

Therefore, the project will institute local mechanisms such as local facilitators / work with local partners to ensure that some work can continue on the ground. Detailed planning will be done with the government operational partners to mobilize their field offices and others and the project will ensure that all recommended safe practices are followed by the project team and by communities where the project is working.

4. Provide advice to farmers and government to meet immediate food needs
5. Conduct socio-economic impact assessment (as part of baseline assessment) to inform the project implementation
6. Ensure close collaboration with private sector entities and logistic companies to understand emerging barriers related to the pan

			<p>demic and establish feasible options</p> <p>7. Support producer organizations in linking with export markets and encourage use of online markets where possible</p> <p>8. FAO is planning to undertake more detailed analysis on the impacts of COVID-19. Based on these findings, the project will prioritize work in more impacted areas of the project sites to strengthen community management and alternative livelihoods.</p>	
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132. Restrictions on international travel to the Marshall Islands due to the COVID-19 pandemic meant that neither FAO staff nor concept formulation consultants were able to visit the country during PIF formulation; regular Zoom calls were however held involving the FAO Funding Liaison Officer (FLO), Lead Technical Officer (LTO), GEF Programme Design Specialist consultant and representatives of Marshall Islands Government to discuss project ideas, obtain information for PIF drafting, and review the PIF draft. Government staff were able to consult with local stakeholders as there were no restrictions on domestic travel or meetings.

133. Although, as a result of RMI Government measures, COVID infection rates have been very low in the country to date (a total of four recorded cases), the pandemic has had major negative impacts on the tourism fishery-related sectors, and has also resulted in significantly increased the prices of imported foods. The Government has taken additional measures to address this situation, including the distribution of farming implements and fishing gear in order to support local food self-sufficiency. The pandemic has therefore made further evident the current fragility of the country's food systems, adding further weight to the justification for this project that emphasizes sustainable and resilient domestic food production: the Government's COVID-response measures described above constitute a further element of the baseline on which the project will build.

## 6. Coordination

**Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.**

134. The project will be nationally executed, under the Operational Partners Implementation Modality (OPIM) or through Letters of Agreement with technically qualified entities: the decision between these two options will be made on the basis of capacity assessments to be carried out in accordance with FAO OPIM procedures during PPG.

135. In all cases a Project Steering Committee (PSC) will be established to provide strategic and technical guidance and oversight to the project, and to ensure full ownership of and participation in the project by key national stakeholders (including through the approval of Annual Work Plans and Budgets of the appointment of key project team members). The PSC will be chaired by the national Executing Agency and will include representatives of other key sector entities and beneficiaries (the identity of the participants and their roles in the PSC will be confirmed during PPG).

136. None of the current portfolio of national GEF projects in the Marshall Islands will overlap with the period of implementation of this project. As described above, the project will complement and build on the achievements of the R2R Reimaanlok project.

137. During PPG, any national or regional GEF-8 projects of potential relevance that may at that time be under development will be identified, and coordination arrangements defined. It is foreseen that the South Pacific Regional Environment Program (SPREP) will in particular have potential to facilitate inter-project coordination across the region, and also to act as a hub for knowledge exchange.

## 7. Consistency with National Priorities

**Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions?**

Yes

**If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc**

138. The national policy environment and country ownership of the project are highly favourable, given the commitment of RMI Government to the integration of national food security, nutritional quality and environmental sustainability, as set out in the **RMI's 15-year National Strategic Development Plan**.

139. The project is fully consistent with the **draft RMI National Food Systems Pathway** developed in the context of the UN Food Systems Summit in September 2021, including all of its priority themes:

- 1: Developing diverse and sustainable blue food production and consumption
- 2: Expanding sustainable green food production and consumption
- 3: Delivering lifelong nutrition and health education and awareness raising
- 4: Ensuring food safety in a complex system
- 5: Building inter-ministerial/cross-sectoral collaboration

140. Goal A3 of the **National Biodiversity Strategy and Action Plan (NBSAP)** is "People Taking the Initiatives in Planting Trees and Crops", with individuals taking responsibility for planting of trees and crops to restore the original lush vegetation and replenish food crops. Key actions will include a program to increase community awareness of the importance of planting trees and crops, and organizing communities to initiate community-based actions in Majuro and in the outer islands and atolls; strengthening the existing Agriculture Extension systems so that they have an active presence in the outer islands and they are able to provide the community-based program with the necessary support; and more research on indigenous crop species and farming systems to provide the community based program with plant cultivars suitable for the local environment.

141. Strategic Theme C of the NBSAP focuses on Traditional Culture and Practices: Goal C1 is to "Apply Traditional Skills and Knowledge"; Goal C2 is "Institute Learning of the Culture Through the Traditional Way of Passing Knowledge from Elders to the Young"; and Goal C3 is "A Move Toward More Use of Local Products".

142. In addition to the above, of particular relevance to the project is the proposed action "Support government to initiate policies on reduction dependency on imported food and materials", under NBSAP Goal D1 "Self-reliance Through Traditional Values and Culture".

143. The **Marshall Islands National Environment Management Strategy 2017–2022** is a national policy with a cross-sectoral approach. Its overall purpose is to conserve and improve its environment for current and future generations, by promoting sustainable development and integrating environment conservation and the proper governance of development efforts. The key principles are listed for the effective implementation of this Strategy, as leadership and good governance; collective responsibility for the environment; indigenous knowledge, practices and innovations; and integration of the environment and development.

144. The project will contribute to the NEMS Action Areas in relation to:

- Land: 1. Ensure protection of existing forest ..; and 2) Promote sustainable agricultural practices on cultivated land and placing more focus on traditional practices;
- Biodiversity: 1. Protect special ecosystems, sites, tradition, language and species and 2. Foster long term protection and maintenance of biodiversity with RMI.
- Marine: proper management of inshore marine environment;

145. In order to ensure food security, sustainable agricultural practices will be promoted on cultivated land and existing vegetation, coconuts, breadfruit and pandanus will be protected. Public awareness-raising campaigns will be carried out for the promotion of healthy eating, with the aim of protecting public health. Furthermore, efforts will be given to maintain traditional food production and consumption.

146. Long-term protection and maintenance of biodiversity will be fostered through strategies in the fields of protection of natural resources and the environment, ecosystem preservation, and protection of habitats, critical sites, and species. Biosecurity concerns regarding the introduction of invasive alien species and protection of endangered species will be addressed. Programs will be developed to replenish, restore and rehabilitate natural resources and the environment that were exploited or degraded through extensive development activities. Agricultural production will be increased by promoting sustainable practices on cultivated land in line with traditional practices. Moreover, the conservation of living marine resources and the marine environment will be strengthened through effective inshore and offshore management of marine environment and control over offshore marine resources exploitation. The network of locally managed marine protected areas will be expanded for effective monitoring, control and surveillance activities. Integrated management of marine and terrestrial systems will be developed through a community-based approach. In addition, marine ecosystems and species will be protected, with a special emphasis on marine mammals and marine turtles. Management of coral reefs will be strengthened by continuous monitoring.

147. The project will specifically contribute to the following outputs of the RMI Agriculture Sector Plan 2021-2031:

#### **Output 1. Environmental Degradation Minimised:**

The activities to be undertaken to achieve this output include:

- 1.1 Coastal tree planting: The Division of Agriculture will lead and coordinate the planting of salt-tolerant traditional trees along coastal areas to protect the coast and to minimize current erosion along the coast.
- 1.2 Promote tree planting on farmlands including coconut replanting: Where there is a problem of deforestation and on barren lands, efforts will be made to promote tree plantings including coconut replanting. Surveys will also be conducted and senile coconuts will be selectively logged and replaced.
- 1.3 Promotion and preservation of the diversity of traditional and cultural plants: Conservation of biodiversity in the Marshall Islands concerns terrestrial native species, especially endemic species. Priority target trees and areas include breadfruit, climax forest (*Pisonia grandis*, *Neisosperma oppositifolium*), *Pemphis acidula* forest, and Mangrove forests. The Forestry Section of the Division of Agriculture will collaborate with other partners to map more detailed forest ecosystem types; map forest types and conservation values on the atolls and designate 'traditional land use' conservation areas (subsistence agroforestry production and compatible income generation with sustainable practices).
- 1.4 Support development of appropriate agroforestry systems: This activity will include promoting and increasing the production of agroforestry including high-value market intercrops; community extension and education. The approach will also rehabilitate and replant coconut.

#### **Output 2. Sustainable small-livestock production systems developed and promoted**

**2.2 Improve feeds with local ingredients:** Livestock feeds are very expensive, making the cost of livestock production too high. There is, therefore, a need for the Division of Agriculture to seek capacity building in making livestock feeds from local ingredients or making the feeds locally with a combination of local and imported materials. Recommendations should also be developed on good diets to be given to pigs and chickens using ingredients available to households.

**2.3 Appropriate livestock management practices developed and promoted:** The Division of Agriculture in collaboration with TTM will seek support for capacity building in the development and promotion of sustainable improved small livestock management practices, including animal pest and disease control, appropriate housing and waste management strategies. Many of the challenges facing the Division of Agriculture are interwoven, and significant benefits can be gained from closer integrated efforts with other stakeholders, including the Secretariat of the Pacific Community (SPC) and the United Nations Food and Agriculture Organization (FAO).

**2.4 Livestock waste management improved:** Piggery waste is a problem in the Marshall Islands, especially along with the coastal areas. This activity is linked to Output (soil management). Piggery waste should be used as one of the ingredients for composting to be used in crop production. The Agricultural Division should explore spearheading a national campaign on waste management for a cleaner environment and better crop nutrition.

### **Output 3. Sustainable crop production systems developed and promoted**

**3.1 Improve soil conditions:** Efforts will be on improving soil organic matter by the use of composting, adaptable cover crops, and any other intervention that will recycle organic matter back to the soil. With the soils being multi-nutrient limiting, an effort should be made to develop targeted compost.

**3.2 Improve water use:** With the increasing incidence of droughts recently causing dwindling freshwater availability in the Marshall Islands and competition from other sectors, water use in agriculture will have to be very efficient. The use of bucket drip irrigation, wicking systems, and mulches will be promoted. Fullstops will be used to assess the vertical movement of water and potential polluting of the groundwater.

148. One of the principles of the Agriculture Sector Plan is that agricultural innovations should be developed to bring about sustainable management of forests, soil, and water resources and their adaptation to climate change impacts and reduce agricultural pollution to manageable levels.

149. The Agriculture Sector Plan thereby contributes to the issues of environment, climate change and resilience and sustainable economic development that are highlighted in the Marshall Islands National Strategic Plan.

150. The priority areas for forestry in the Marshall Islands from the **State -Wide Assessment and Resource Strategy 2010 – 2015+ (FAP)** are improving biodiversity; improving food security and sustainable livelihoods; coastal reinforcement; and reducing the loss of urban trees. The implementation of the activities under this output will also align with the Reimaanlok Conservation Plan.

151. The project will contribute to the following objectives of the 2018-2030 Strategic Framework of the United Nations Convention to Combat Desertification (UNCCD) :

**Strategic objective 1:** To improve the condition of affected ecosystems, combat desertification/land degradation, promote sustainable land management and contribute to land degradation neutrality

- Expected impact 1.1 Land productivity and related ecosystems services are maintained or enhanced.
- Expected impact 1.2 The vulnerability of affected ecosystems is reduced and the resilience of ecosystems is increased.
- Expected impact 1.3 National voluntary land degradation neutrality targets are set and adopted by countries wishing to do so, related measures are identified and implemented, and necessary monitoring systems are established.

- Expected impact 1.4 Measures for sustainable land management and the combating of desertification/land degradation are shared, promoted and implemented.

**Strategic objective 2:** To improve the living conditions of affected populations

- Expected impact 2.2 The livelihoods of people in affected areas are improved and diversified.
- Expected impact 2.3 Local people, especially women and youth, are empowered and participate in decision-making processes in combating DLDD.

**Strategic objective 4:** To generate global environmental benefits through effective implementation of the UNCCD

- Expected impact 4.1 Sustainable land management and the combating of desertification/land degradation contribute to the conservation and sustainable use of biodiversity and addressing climate change.
- Expected impact 4.2 Synergies with other multilateral environmental agreements and processes are enhanced.

## 8. Knowledge Management

**Outline the knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.**

152. The project has particular potential to act as a regionally replicable model of how to link the delivery of global environmental benefits with sustainable, healthy food systems. The project implementation team will include a dedicated specialist responsible for monitoring, evaluation and outreach in order to ensure that knowledge is managed and disseminated effectively at national and regional levels. During PPG, a specific knowledge management and outreach plan will be developed, and a monitoring and evaluation (M&E) scheme will be formulated with relevant SMART indicators, which will provide the basis for the Results Based Management (RBM) of the project and also for the objective assessment and reporting of impacts and lessons learned through the project.

153. The knowledge management strategy will define, on the one hand, how to ensure that project formulation and implementation adequately take into account relevant experiences generated to date in the region and globally (for example in relation to land/seascape management and sustainable food systems in small island contexts); and, on the other, how the project will share the experiences that it generates at national, regional and global levels. This process will start with the inclusion in the PPG inception workshop of a review (with national partner institutions, other GEF agencies, regional entities including SPREP, SPC and the USP, and FAO specialists at regional and HQ levels) of relevant experiences and lessons to be taken into account in project formulation. The knowledge management strategy to be developed by the time of CEO Endorsement will then specify how during implementation the project will work with these regional entities, as well as with global mechanisms such as the Agroecology Knowledge Hub and the World Overview of Conservation Approaches and Technologies (WOCAT) (Section 1(7) above) as hubs for continuous knowledge exchange across the Pacific and across SIDS globally. It will be particularly important to learn from the multi-focal Ridge to Reef (R2R) projects initiated during GEF-5 across the Pacific, led by UNDP and in which FAO also participated as implementing agency.

154. At ground level, emphasis will be placed on the participatory review, discussion, sharing and management of traditional knowledge regarding food system and natural resource management, in line with the provisions of the NBSAP (Strategic Theme C on Traditional Culture and Practices) and in accordance with the provisions of the Nagoya Protocol on Access and Benefit Sharing.

## 9. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

**Overall Project/Program Risk Classification\***

PIF

CEO Endorsement/Approval MTR

TE

Medium/Moderate

**Measures to address identified risks and impacts**

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

The project has been classified as moderate risk (report uploaded) for triggering the following FAO Environmental Safeguards Standards:

ESS1: Natural Resources Management, ESS3: Plant Genetic Resources, ESS7: Decent Work, ESS8: Gender Equality and ESS9: Indigenous Peoples.

Due to the moderate risk rating, an Environmental and Social Analysis (ESA) or an Environmental and Social Management Framework (ESMF) will be conducted at the PPG phase.

The Climate Risk Screening has classified the project as High Risk (report uploaded) with a number of recommendations to be considered and integrated into the project during the project development phase to strengthen climate resilience of the project.

**Supporting Documents**

Upload available ESS supporting documents.

Title	Submitted
Climate Risk Screening_FAO-GEF_Marshall Islands	
ESS_Screening checklist	
FAO Environmental Risk Certification Sept 2021	



**Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)**

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

<b>Name</b>	<b>Position</b>	<b>Ministry</b>	<b>Date</b>
Clarence Samuel	CCD Director and GEF Operational Focal Point	Climate Change Directorate, Ministry of Environment, Republic of the Marshall Islands	9/9/2021

## ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

The geographical coordinates of the three target atolls of the project are as follows :

- Kwajalein Atoll: 8.7167° N, 167.7333° E
- Majuro Atoll: 7.0667° N, 171.2667° E
- Arno Atoll: 7.0833° N, 171.6833° E.





