



Empowered lives.
Resilient nations.



UNITED NATIONS DEVELOPMENT PROGRAMME

COUNTRIES:

Cook Islands, Federated States of Micronesia, Fiji Islands, Kiribati, Nauru, Niue, Palau, Papua New Guinea, Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu

PROJECT DOCUMENT

Ridge to Reef - Testing the Integration of Water, Land, Forest & Coastal Management to Preserve Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods in Pacific Island Countries

UNDAF Outcome(s): n/a

UNDP Strategic Plan Environment and Sustainable Development Primary Outcome:

Outcome 2; Output 2.5 . Legal and regulatory frameworks, policies and institutions enabled to ensure the conservation, sustainable use and access and benefit sharing of natural resources, biodiversity and ecosystems in line with international conventions and national legislation; Output 2.5.2

UNDP Strategic Plan Secondary Outcome: Outcome 1: Output 1.4 . Scaled up action on climate change adaptation and mitigation across sectors which is funded and implemented: Output 1.4.2.

Executing Entity/Implementing Partner: SPC Applied Geoscience and Technology Division (SOPAC)

Implementing Entity/Responsible Partners: SPC Applied Geoscience and Technology Division (SOPAC)

P
A
P
P
S
E

The purpose of the project is to test the mainstreaming of ridge-to-reef (R2R), climate resilient approaches to integrated land, water, forest and coastal management in the PICs through strategic planning, capacity building and piloted local actions to sustain livelihoods and preserve ecosystem services. This regional project provides the primary coordination vehicle for the national R2R STAR Projects that are part of the Pacific R2R Program, by building on nascent national processes from the previous GEF IWRM project to foster sustainability and resilience for each island through: reforms in policy, institutions, and coordination; building capacity of local institutions to integrate land, water and coastal management through on-site demonstrations; establishing evidence-based approaches to ICM planning; improved consolidation of results monitoring and information and data required to inform cross-sector R2R planning approaches. This project will also focus attention on harnessing support of traditional community leadership and governance structures to improve the relevance of investment in ICM, including MPAs, from community to cabinet

Management Arrangements: IGO
PAC Meeting Date: TBD

Total resources r
Total allocated res
GEF:
UNDP In-kind:
Other:
National Governm
SPC/SOPAC:

Agreed by Government of Cook Islands: _____
Date/Month/Year

Agreed by Government of the Federated States of Micronesia: _____
Date/Month/Year

Agreed by Government of Fiji: _____
Date/Month/Year

Agreed by Government of Kiribati: _____
Date/Month/Year

Agreed by Government of Nauru: _____
Date/Month/Year

Agreed by Government of Niue: _____
Date/Month/Year

Agreed by Government of Palau: _____
Date/Month/Year

Agreed by Government of Papua New Guinea: _____
Date/Month/Year

Agreed by Government of Republic of Marshall Islands: _____
Date/Month/Year

Agreed by Government of Samoa: _____
Date/Month/Year

Agreed by Government of Solomon Islands: _____
Date/Month/Year

Agreed by Government of Tonga: _____
Date/Month/Year

Agreed by Government of Tuvalu: _____
Date/Month/Year

Agreed by Government of Vanuatu: _____
Date/Month/Year

Agreed by (UNDP): _____
Date/Month/Year

Project Description

Given the close inter-connections between land, water and coastal systems in Small Island Developing States (SIDS), the integration of freshwater watershed management with coastal area management is considered essential to foster effective cross-sectoral coordination in the planning and management of land, water and coastal uses. In Pacific SIDS, such integrated approaches to freshwater and coastal area management have been termed *Ridge to Reef* to emphasise the inter-connections between the natural and social systems from the mountain ridges of volcanic islands, through coastal watersheds and habitats, and across coastal lagoons to the fringing reef environments associated with most Pacific SIDS. Inherent in the approach is the philosophy of cross-sectoral coordination in the planning and management of freshwater use, sanitation, wastewater treatment and pollution control, sustainable land use and forestry practices, balancing coastal livelihoods and biodiversity conservation, hazard risk reduction, and climate variability and change. Similarly, the integration of communities, stakeholders, and national governments within such a cross-sectoral planning framework is described by Pacific SIDS as a *Community to Cabinet* approach.

To support the ongoing development of *Ridge to Reef* and *Community to Cabinet* approaches in Pacific SIDS through the abovementioned multi-focal area R2R program, the GEF Council approved the development of an International Waters project entitled *Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management to Preserve Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods in Pacific Island Countries*. This regional project will be implemented by the United Nations Development Program through the Applied Geoscience and Technology Division of the Secretariat of the Pacific Community in partnership with the 14 Pacific Island Countries to improve the integration of water, land, forest and coastal management required to fashion sustainable futures for island communities. The project also aims to address the recent high-level recognition and calls for results-based approaches to the management of development assistance programmes and projects, and will provide support in areas of coordination, capacity building, technical assistance, and monitoring and evaluation for the operation of the broader Pacific R2R program.

Importantly, the project will build on nascent national processes built in the previous GEF IWRM project to foster sustainability and resilience for each participating island nation through: reforms in policy, institutions, and coordination; building capacity of local institutions to integrate land, water and coastal management; establishing evidence-based approaches to ICM planning; and improved consolidation of information and data required to inform cross-sector R2R planning approaches. These processes are being sustained. It is envisaged that this project will also focus much attention on harnessing support of traditional community leadership and governance structures to improve the relevance of investment in integrated land, water, forest and coastal management. This project will also provide coordination functions and linkages with the national GEF STAR multifocal projects and LDCF project and will facilitate dialogue and action planning through national Inter-Ministry Committees on responses to emerging issues and threats in environment and natural resource management. Similarly it will facilitate coordinated exchanges of experience and results of the GEF portfolio of investments in a broader regional R2R programme for SIDS. Linkages with co-financed activities on water resource and wastewater management, coastal systems and climate adaptation and disaster risk management will ensure more targeted capital investment in coastal infrastructure within an integrated management framework. Similarly the project will foster solidarity among the SIDS, particularly with respect to the political will required to support more integrated approaches to R2R in natural resource management.

Table of Contents

1 SITUATION ANALYSIS	7
1.1 INTRODUCTION AND THE Problem to be addressed.....	7
1.1.1 Environmental and Socio-Economic Context	10
1.1.2 Geography and Biodiversity	10
1.1.3 Socioeconomics.....	15
Key Economic Sectors ⁽³⁾	16
1.1.4 State of Water Resources	18
1.1.5 Climate Variability and Change.....	21
1.1.6 Sectoral, Institutional, and Policy Context.....	22
1.2 Threats and Root Causes.....	23
1.3 Barriers	25
1.4 Baseline Analysis	26
1.5 The Proposed Alternative Scenario	28
2 STRATEGY	32
2.1 Project Rationale and Policy Conformity	32
2.1.1 Strategic Action Programme for Pacific Island Countries.....	32
2.1.2 Implementing Integrated Coastal and Watershed Management.....	32
2.1.3 A Stepwise Catalytic Approach	33
2.2 Country Ownership: Country Eligibility and Country Drivenness.....	34
2.3 Design Principles and Strategic Considerations	35
2.4 Project Objective, Outcomes and Outputs/Activities.....	40
2.5 Key Indicators, Risks and Assumptions	59
2.5 Stakeholders and Coordination Arrangements.....	63
2.6 Financial Modality.....	66
2.7 Cost-effectiveness.....	66
2.8 Replication, Scaling-up and Mainstreaming	67
2.8.1 Replication.....	67
2.8.2 Scaling-up.....	67
2.8.3 Developing a National Replication and Scaling-up Plan for IW R2R.....	67
2.8.4 Mainstreaming.....	68
2.9 Public awareness and communications	68
2.10 Sustainability.....	68
3 PROJECT RESULTS FRAMEWORK.....	70
TOTAL BUDGET AND WORKPLAN	84
5 MANAGEMENT ARRANGEMENTS	90
6 MONITORING FRAMEWORK AND EVALUATION	94
7 LEGAL.....	97
List of Annexes.....	99

LIST OF ACRONYMS

ADB	Asian Development Bank
APR/PIR	Annual Project Review/Project Implementation Reports
CBOs	Community Based Organisation(s)
CCA	Climate Change Adaptation
CCCPIR	Coping with Climate Change in the Pacific Island Region
CFP	Coastal Fisheries Programme
CRGA	Committee of Representatives of Governments and Administrations
CTI	Coral Triangle Initiative
DRM	Disaster Risk Management
EC	European Union
ENSO	El Niño Southern Oscillation
ERC	UNDP Evaluation Office Evaluation Resource Centre
FAO	Food and Agriculture Organisation
FFA	Forum Fisheries Agency
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEF SCCF	Special Climate Change Fund
GIWA	Global International Waters Assessment
HSA	Hotspot Analysis
ICM	Integrated Coastal Management
ICWM	Integrated Coastal and Watershed Management
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
IW:LEARN	International Waters Learning Exchange and Resource Network
IWCAM	Integrating Watershed and Coastal Area Management
JCSP	Joint Country Strategy Programmes
LDCs	Least Developed Countries
LDCF	Least Developed Countries Fund
MARSH	Mangrove Rehabilitation for Sustainably-Managed Healthy Forests
MDG	Millennium Development Goal
MESCAL	Mangrove Ecosystems for Climate Change Adaptation and Livelihoods
NAMAs	Nationally Appropriate Mitigation Actions
NAPA	National Adaptation Programme of Action
NCSA	National Capacity Self-Assessment
NGO	Non-Governmental Organisation
ODA	Official Development Assistance
OFM	Oceanic fisheries management
OIP	Ocean and Islands Programme
PACC	Pacific Adaptation to Climate Change
Pacific RAP	Pacific Regional Action Plan of Sustainable Water Management
PaciWRM	Pacific Integrated Water Resource Management
PCU	Project Coordination Unit
PICs	Pacific Small Island Developing States Participating in the R2R Programme
PIMS	Project Information Management System
PPR	Project Progress Reports
R2R	Ridge to Reef
Rio+20	United Nations Conference on Sustainable Development Follow up Conference
RSTC	Regional Scientific and Technical Committee
SAP	Strategic Action Programme
SBAAs	Standard Basic Assistance Agreements
SDS-SEA	Sustainable Development Strategy for the Seas of East Asia
SESA	Strategic Environmental and Social Assessments
SGP	Small Grants Programme
SLM	Sustainable Land Management
SoC	State of the Coasts
SOPAC	Applied Geoscience and Technology Division

SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
STAR	System for Transparent Allocation of Resources
UN CBD	United Nations Convention on Biological Diversity
UN CCD	United Nations Convention to Combat Desertification
UN FCCC	United Nations Framework Convention on Climate Change
UN POPs	UN Convention on Persistent Organic Pollutants
UNDP	United Nations Development Programme
UNDP M/CO	UNDP Multi / Country Office
UNDP RCU	UNDP Regional Co-ordinating Unit
UNEP	United Nations Environment Programme
UNESCAP	United Nations Economic & Social Commission for Asia & the Pacific
UNICEF	United Nations Children's Fund
WSP	Water and Sanitation Programme
WSSD	World Summit on Sustainable Development

1 SITUATION ANALYSIS

1.1 INTRODUCTION AND THE PROBLEM TO BE ADDRESSED

Strengthening the Coordination of Multi-Focal Area Investment in Pacific PICS

1. The Heads of States of 13 Pacific PICS developed and in 1997 endorsed a GEF-financed International Waters Strategic Action Programme (SAP) for Pacific Island Countries. This document identified priority areas for action in the international waters focal area as improved management of ocean and coastal fisheries, integrated watershed and coastal management, and water supply protection. On the basis of the Pacific SAP, the GEF International Waters focal area has subsequently invested in a series of regional initiatives. The first was the UNDP implemented project entitled *Implementation of the Strategic Action Program for the International Waters of the Pacific Small Island Developing States* initiated in 2000 and operated over almost 7 years to 2006. In light of the critical water resource and sanitation issues facing PICS, GEF support in the years following the conclusion of the IWP project has been targeted at improved coordination and planning of water resource and wastewater management to balance overuse and conflicting uses of scarce freshwater resources through the GEF Pacific IWRM Project. The latter was financed by the GEF, implemented by UNDP and UNEP, and executed regionally by the Applied Geoscience and Technology Division of the Secretariat of the Pacific Community (SPC) in partnership with 14 Pacific Island Countries.
2. The GEF Pacific IWRM Project built on achievements of previous investments via a focus on national IWRM demonstration projects aimed at providing an opportunity for participating countries to implement, and experiment with, new management models and methods. The practical on-the-ground solutions to water and sanitation issues demonstrated by the national IWRM projects acted to stimulate support at both community and national government levels for policy reform and the mainstreaming of integrated approaches as part of national sustainable development planning. The independent terminal evaluation of this project highlighted that the experience and local capacity generated as a result of the GEF Pacific IWRM project is recognized both nationally and regionally as an appropriate entry point for the testing of innovative approaches and measures to integrate land, forest, water and coastal management, including climate change adaptation in Pacific PICS.
3. In this connection, the GEF Council at its 44th meeting in June 2014 approved the UNDP/UNEP/FAO multi-focal area *Pacific Islands Ridge-to-Reef National Priorities*. Integrated Water, Land, Forest and Coastal Management to Preserve Biodiversity, Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods program, the goal of which is to maintain and enhance Pacific Island countries' ecosystem goods and services (provisioning, regulating, supporting and cultural) through integrated approaches to land, water, forest, biodiversity and coastal resource management that contribute to poverty reduction, sustainable livelihoods and climate resilience. This goal will be achieved through a series of national multi-focal area *Ridge to Reef (R2R)* demonstration projects which will support and address national priorities and development needs while delivering global environmental benefits in line with GEF focal area strategies (Biodiversity, Land Degradation, Climate Change Mitigation, International Waters) and Climate Change Adaptation.

Addressing Priority National Activities

4. In this programme, the Pacific Islands Countries emphasize the need to focus on their own priority national activities as they utilize STAR resources. Experience has shown that an integrated approach from ridge to reef (and ocean--Ridge to Reef or R2R) is necessary for poverty reduction, sustainability, and capacity enhancement for small countries with few human resources to undertake projects. For example, Cook Islands and Palau focus is on protected areas and their effectiveness. As a follow-up to the Cook Islands approach, representative and sustainable national system of terrestrial, coastal and marine protected areas are to be complemented by appropriate sector practices in adjoining or upstream watersheds to mitigate threats to conservation from outside protected areas. Palau plans to focus on managing the full range of its Protected Area Network in association with many areas not captured by the PAN. It will focus on an integrated approach with regards to land-use management, forest management and water and coastal management to enhance their ecosystem services. Samoa is taking a

different approach using LDCF resources. The occurrence of natural disasters underlines the vulnerability of Samoa and the need for a coordinated response that protects the lives and assets of the communities. The Government of Samoa through the LDCF programme intends to address the barrier of a fragmented policy and programmatic approach, by putting in place an enabling framework that will guide interventions on climate change adaptation/mitigation and DRR/DRM, and will make CC a priority of economic and social concern. This will reflect integrated approaches and contribute to the R2R programme.

5. Fiji's R2R project will focus on enhancing integrated management of a series of forested watersheds to protect land, water, forest and biodiversity resources, maintain carbon stocks, and protect coastal mangrove and coral reef MPAs. Efforts in Kiribati will focus on creating a network of locally managed protected areas in remote atoll ecosystems and promoting sustainable land and water management practices for atoll land and agricultural systems. Nauru's project will link improving management of new marine conservation areas with community engagement in improved landscape and water resources management including through soil and water conservation measures and enhancing community water storage capacity. These on-the-ground efforts will be complemented by mainstreaming biodiversity and SLM into national policy and regulatory frameworks. Micronesia's project will support expansion of both marine and terrestrial protected areas in all four Micronesian states, complemented by support to integrated ecosystem management and restoration outside protected areas to enhance ridge to reef connectivity. Work in Niue will focus on establishing new terrestrial and marine protected areas and enhancing ecosystem connectivity across such areas, complemented by support to communities to manage their production activities outside designated conservation areas in an environmentally friendly manner.
6. PNG's R2R project will help to strengthen the government's operational capacity to effectively manage PNG's PA system, including efforts to strengthen the government's enforcement capabilities to address threats within its national parks. Marshall Islands' comprehensive Ridge to Reef project will protect RMI's atoll ecosystems and improve community well-being through improved water supply and sanitation, sustainable agricultural practices, community managed marine and terrestrial protected areas, and promotion of low carbon energy technologies. Tonga features two national Ridge to Reef projects that will strengthen and expand marine and terrestrial protected areas, enhance carbon storage through restoration of damaged forests and farmlands, build national climate resilience, and strengthen capacity for integrated water resources and coastal management. In Tuvalu, R2R will focus on strengthening protected areas management, rehabilitation of degraded coastal and inland forests, demonstrate small scale low carbon energy and water technologies, and support integrated water resources management. In Vanuatu, R2R will focus on strengthening Vanuatu's protected area network, sustainable management of production landscapes, and landscape restoration and forest degradation.

A Supporting Regional International Waters Project

7. Given the close inter-connections between land, water and coastal systems in Small Island Developing States (PICS), the integration of freshwater watershed management with coastal area management is considered essential to foster effective cross-sectoral coordination in the planning and management of land, water and coastal uses. In Pacific PICS, such integrated approaches to freshwater and coastal area management have been termed 'Ridge to Reef' to emphasise the inter-connections between the natural and social systems from the mountain ridges of volcanic islands, through coastal watersheds and habitats, and across coastal lagoons to the fringing reef environments associated with most Pacific PICS. Inherent in the approach is the philosophy of cross-sectoral coordination in the planning and management of freshwater use, sanitation, wastewater treatment and pollution control, sustainable land use and forestry practices, balancing coastal livelihoods and biodiversity conservation, hazard risk reduction, and climate variability and change. Similarly, the integration of communities, stakeholders, and national governments within such a cross-sectoral planning framework is described by Pacific PICS as a 'Community to Cabinet' approach.
8. To support the ongoing development of 'Ridge to Reef' and 'Community to Cabinet' approaches in Pacific PICS through the abovementioned R2R program, the GEF Council approved the development of an International Waters project entitled ***"Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management to Preserve Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods in Pacific Island Countries"***. This regional project will be implemented by UNDP and executed regionally by the Applied

Geoscience and Technology Division of the Secretariat of the Pacific Community and will support 14 Pacific Island Countries in the integration of water, land, forest and coastal management required to fashion sustainable futures for island communities. The project also aims to address the recent high-level recognition and calls for results-based approaches to the management of development assistance programmes and projects, and will provide support in areas of coordination, capacity building, technical assistance, and monitoring and evaluation for the operation of the broader R2R program.

9. Importantly, the project will build on nascent national processes built in the previous GEF IWRM project to foster sustainability and resilience for each participating island nation through: reforms in policy, institutions, and coordination; building capacity of local institutions to integrate land, water and coastal management; establishing evidence-based approaches to ICM planning; and improved consolidation of information and data required to inform cross-sector R2R planning approaches. It is envisaged that this project will also focus much attention on harnessing support of traditional community leadership and governance structures to improve the relevance of investment in integrated land, water, forest and coastal management.
10. This project will also provide coordination functions and linkages with GEF SCCF, biodiversity and land degradation focal areas in the national STAR projects and will facilitate dialogue and action planning through national Inter-Ministry Committees on responses to emerging issues and threats in environment and natural resource management. Similarly it will facilitate coordinated exchanges of experience and results of the GEF portfolio of investments in a broader regional R2R programme for PICs. Linkages with co-financed activities on water resource and wastewater management, coastal systems and climate adaptation and disaster risk management will ensure more targeted capital investment in coastal infrastructure within an integrated management framework. Similarly the project will foster solidarity among the PICs, particularly with respect to the political will required to support more integrated approaches to R2R in natural resource management.

A Consultative Project Preparation Phase

11. This project represents an important opportunity to test whether some or all of the 14 PICs can operationalize these integrated approaches for sustaining their island communities in the face of increasingly extreme climatic variability and population and development pressures. It also provides the occasion for governments to commit to adopting national policies, legislation, programs and budget reforms to mainstream and sustain R2R approaches into national development policies and plans. As Pacific Island officials witness the successes that pilot communities have in applying the Ridge to Reef paradigm, the dynamic known as *from community to cabinet* that was developed in the previous regional GEF IW project will come into play. Adoption and implementation of the policy and institutional reforms and budget measures will represent a signal that several key barriers have been removed and full scale implementation and scaling up should be a next priority for GEF 6.
12. Accordingly, the project preparation phase involved the conduct of a series of in-country planning meetings, sub-regional workshops, and a region-wide meeting, the latter of which facilitated the direct participation of national GEF Operational Focal Points in project design. This consultative process was linked directly to the closure and terminal evaluation of previous GEF Pacific IWRM Project, with the view of building on the momentum, national-level capacity built, and lessons learned from that initiative. During these consultations it became evident that whilst there was strong support for the role of the proposed project as part of the broader R2R program, the Outcomes and Outputs described in the GEF Council approved Project Identification Form did not clearly describe to country officials the support role the project would provide and how these were linked at a national level. Additionally, the design phase gave careful consideration to both Council and STAP comments and suggestions. As a result at an Outcome level, two new outcomes have been added to Component 1, and one new outcome to both Components 2 and 3. Significantly greater detail has been provided at the output level with Component 1 outputs increased from 2 to 11, for Component 2 from 4 to 10, for component 4 from 6 to 9 and for Component 5 decreased from 5 to 4. These changes have not materially changed the project concept but have provided more detail and coherence to make the project activities more transparent, relevant and catalytic to country officials. The project objective, outcomes, and outputs/activities are described in Section 2.4 of this document. Additionally, Annex 3 provides the detailed results framework for the project. Annex 2 contains results frameworks for national pilot activities to be elaborated during the project inception period.

1.1.1 Environmental and Socio-Economic Context

13. The Pacific Small Island Developing States (PICs) are distributed through an oceanic area covering 10 per cent of the Earth's surface. They vary considerably in their size and geomorphology with over 6,000 islands and islets ranging from high volcanic islands to tiny low coral atolls and have varied economies and systems of governance. Some Pacific Island Countries (PICs) consist of a few sparsely inhabited islands while others are more densely populated island groups and some have no confirmed freshwater (dependent on rainwater and desalination). Many of the small islands can source limited water supplies from fragile shallow water lenses. Consequently, there is a need for a variety of different governance and resource management strategies and approaches focusing on different scales, and different levels of capacity.
14. Despite these differences, PICs do share some common environmental features. Many are small, low-lying and isolated, with vulnerability to climatic influences such as storms, drought and sea-level rise. Yet many of these same islands are globally significant with regards to biodiversity. Flora and fauna of small isolated islands exhibit high endemism and global biodiversity significance. These fragile island ecosystems are increasingly exposed to external and internal anthropogenic impacts threatening endemic terrestrial and coastal biodiversity. Many PICs have high population growth rates with some islands such as Ebeye in the Marshall Islands and Tarawa in Kiribati having population densities greater than many large cities such as Kuala Lumpur and Paris. PICs are becoming increasingly urbanized and making increasingly rapacious demands of the environment. With the majority of people dwelling at the coast, serious degradation occurs there and in the estuarine environment and inshore marine areas.
15. The ability of PICs to manage their resources and ecosystems in a sustainable manner while sustaining their livelihoods is crucial to their social and economic well-being, and is clearly directly related to GEF's mandate for protection and sustainable management of biodiversity and international waters. PICs have specific needs and requirements when developing their economies. These are related to small population sizes and human resources, small GDPs, limited land area and natural resources. The small size of the catchments, shallow aquifers and lack of storage affects all water users from urban and rural water supplies, commercial forestry, subsistence agriculture, and fisheries/reefs and tourism.

1.1.2 Geography and Biodiversity

16. The fourteen developing PICs are home to over 9 million people, speaking about 1,200 languages (Tryon 2006), with the majority of Pacific islanders (about 60%) living in rural areas (WHO/SOPAC 2008). These Pacific Island countries have about 1,000 islands covering a land area of just over half a million square kilometres, spread across 180 million square kilometres of ocean (Figure 1). The ecosystems supported across these islands are unique and among the most endangered in the world (McIntyre 2005).
17. The PICs face similar challenges managing coastal resources to other developing countries. Access to sanitation and safe drinking water, protecting sensitive ecosystems and generating productive use of limited resources are among these issues. Nevertheless PICs face unique challenges managing coastal resources, constrained by their remoteness, small size, fragility, natural vulnerability and limited human and financial resources (SOPAC 2006). These challenges require innovative approaches and tailoring of solutions not just to the region, but often to the complex combination of geographical and socio-economic constraints of an individual island.
18. The PICs are unique geographically, biologically, socio-economically and culturally. The region is characterised by dramatically different small islands spread across the world's largest ocean, supporting numerous diverse ecosystems and high biodiversity; by a high degree of economic and cultural dependence on the natural environment and resources; by vulnerability to a wide range of natural disasters; and by a diversity of cultures, languages, traditional practices and customs which is central to the close and special relationship of the Pacific people with their environments.
19. The links between the Pacific people and their environments are heavily influenced by the geological characteristics of the islands. The PICs could be considered a combination of four main forms, namely high volcanic, uplifted limestone, low-lying coral island and atolls and mixed combinations of these forms (Figure 2). The island form significantly influences many aspects of

island life, from historical and cultural development to providing unique contemporary constraints to population growth and economic development. The high volcanic islands tend to have the largest and most varied biodiversity, associated with larger ecosystems and a greater range of habitats; however, the isolation of low-lying islands has often resulted in intense speciation to form many new species resulting in levels of endemism that are unique globally (McIntyre 2005).

20. The vulnerability of island biodiversity means that the ecosystems of the Pacific are among the most endangered in the world, whilst amongst the systems under the highest risk (Brooks et al 2002), to the point where extinctions are amongst the highest in the world (Kingsford et al 2009). Table 1 provides a summary of the Pacific PICs islands geographical characteristics. Of the 953 significant islands identified for the PICs, over half of these are less than 10 km² in area while many, particularly coral islands and atolls, are less than 1 km².

Table 1 – Pacific PICs geographical features

Country	Sub-Region	Population ('000s) ⁽¹⁾	Area (km ²)	Islands ⁽²⁾	Form ⁽³⁾
Cook Islands	Polynesia	20	237	15	Volcanic, volcanic & limestone, atoll
Federated States of Micronesia	Micronesia	111	701	59	Volcanic, atoll, mixed
Fiji	Melanesia	864	18 273	322	Volcanic, limestone, atoll, mixed
Kiribati	Micronesia	100	811	36	Atoll, coral island, limestone
Marshall Islands	Micronesia	64	181	34	Atoll and coral islands
Nauru	Micronesia	10	21	1	Limestone
Niue	Polynesia	1	259	1	Limestone
Palau	Micronesia	21	444	31	Volcanic, limestone
Papua New Guinea	Melanesia	6 745	462 840	151	Volcanic, limestone, atoll, coral island
Samoa	Polynesia	179	2 785	7	Volcanic
Solomon Islands	Melanesia	550	30 407	138	Volcanic, limestone, atoll
Tonga	Polynesia	104	650	67	Limestone, volcanic, mixed
Tuvalu	Polynesia	10	26	10	Atoll
Vanuatu	Melanesia	245	12 281	81	Volcanic, limestone

Notes: (1) SPC 2010b

(2) UN System-Wide Earthwatch Web Site Island Directory (<http://islands.unep.ch/>)

(3) Falkland et al (2002). The form listed first is that of the main island or greatest land mass. The form descriptions are generalised. For example, several of the larger volcanic islands also have coastal sand plains.

21. The high volcanic islands are generally large in area, consisting mainly of volcanic rock, forested with fertile soils with high rainfall and freshwater availability. The low coral islands and atolls are typically small with limited freshwater availability and resources and poor soil.
22. The isolated evolution of island ecosystems has led to unique biodiversity and ecosystems in PICs (McIntyre 2005). The close relationship between Pacific people and their environments means that biodiversity is not only critical for the maintenance of essential ecosystem functions, but also for social and economic development.

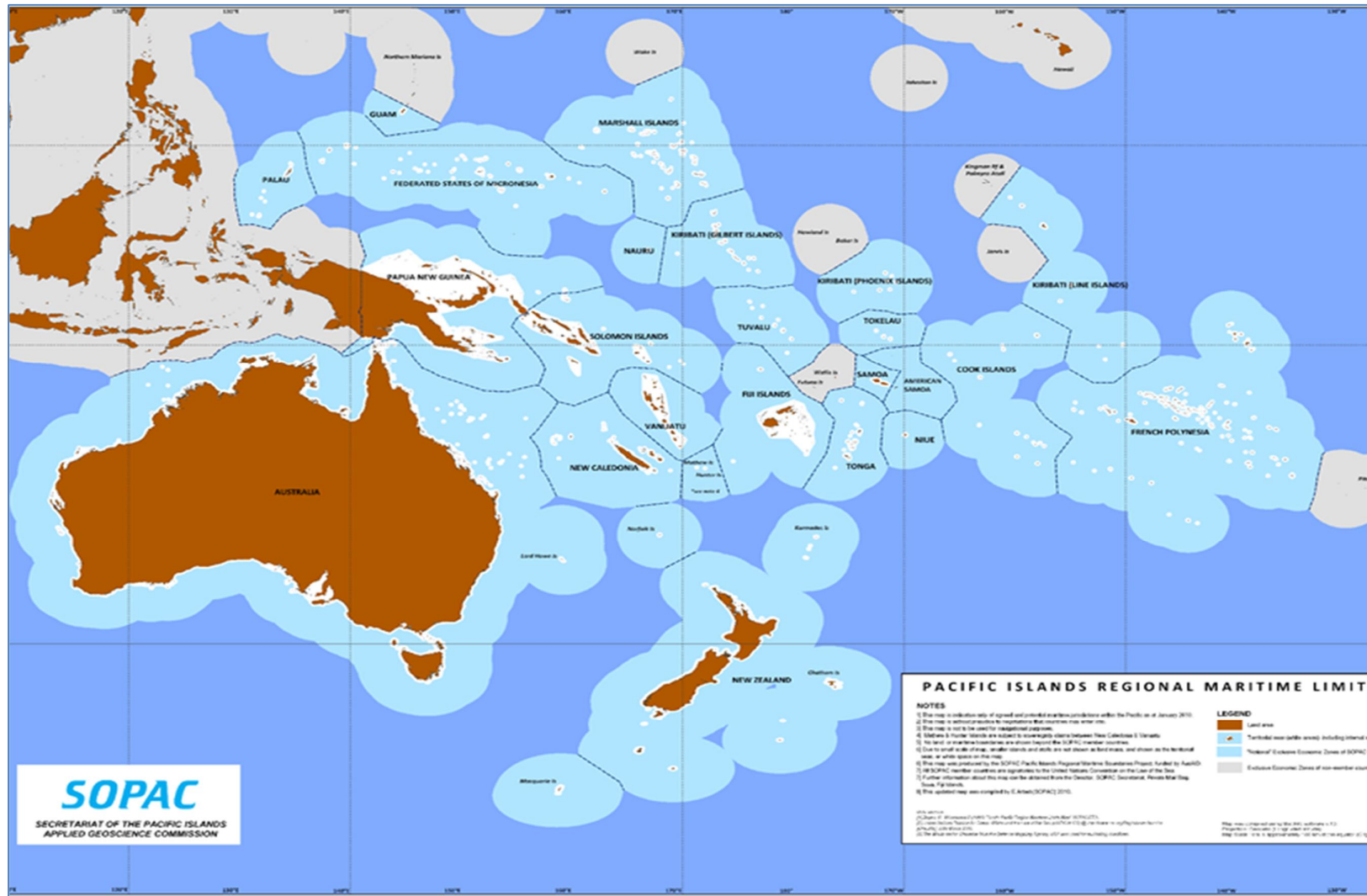


Figure 1 The Pacific Islands region



**Figure 2 –
Representative
photos of different
island forms**

Left – atoll (Fongafale Island, Tuvalu); Right – high volcanic (Rarotonga, Cook Islands); below – raised limestone island (Nauru left and Niue right)

Note high energy coastline on ocean side (right) of atoll and calmer lagoon side (left).



Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

The features of the raised limestone islands include a raised central plateau, steep coastal fringes and a reef shelf. In the case of Nauru (below), this shelf extends to a small coastal plain.



1.1.3 Socioeconomics

23. All fourteen of the PICs are recognised as small island developing states (PICS) by UN-OHRLLS, acknowledging their specific social, economic and environmental vulnerabilities. The PICS status reflects the unique constraints in their sustainable development efforts, including as a narrow resource base depriving them of the benefits of economies of scale; small domestic markets and heavy dependence on a few external and remote markets; high costs for energy, infrastructure, transportation, communication and servicing; long distances from export markets and import resources; low and irregular international traffic volumes; little resilience to natural disasters; growing populations; high volatility of economic growth; limited opportunities for the private sector and a proportionately large reliance of their economies on their public sector and fragile natural environments (UN-OHRLLS 2010).
24. In addition to these constraints, Pacific island countries are in general characterised by small land areas and populations and, in some cases, by relatively high population densities (Table 2). For many countries the population statistics would be even higher were it not for emigration, either for temporary employment or permanently.

Table 2 – Key regional socio-economic indicators

Country	Population Density (Capita.km ⁻²)	Population Growth (%)	Urban Population (%)	Urban Population Growth (%) ⁽²⁾	Net Migration Rate ⁽³⁾ (%)
Cook Islands	66	0.6	72	2.6	0.1
Federated States of Micronesia	159	0.4	22	-2.2	-2.1
Fiji	46	0.5	51	1.5	-1.0
Kiribati	124	1.8	44	1.9	0.0
Marshall Islands	301	0.7	65	1.6	-1.9
Nauru	475	2.1	100	-2.1	-2.1
Niue	6	-2.3	36	-1.1	-4.1
Palau	46	0.6	77	0.0	0.1
Papua New Guinea	15	2.1	13	2.8	0.4
Samoa	66	0.3	21	-0.6	-2.4
Solomon Islands	18	2.7	16	4.2	0.1
Tonga	159	0.3	23	0.5	-1.8
Tuvalu	429	0.5	47	1.4	-1.1
Vanuatu	20	2.5	21	4.0	0.6

Notes: (1) Data from the 2010 Pocket Statistical Summary unless otherwise stated (SPC 2010a)

(2) Data from Secretariat of Pacific Community (SPC) Estimates and projections for economic indicators (2010)

(3) Data from Population, migration and development in Asia, with special emphasis on the South Pacific: the impact of migration on population and the MDGs (Rallu 2008)

25. Emigration is a significant factor in maintaining capacity within PICs with a loss of skilled and educated workers particularly evident in this region (Rallu 2008). This brain drain is an additional hindrance to development in Pacific countries, with several countries reliant on overseas development assistance to provide necessary skills. To some degree this has been offset by regional political cooperation in the development of regional councils responsible for technical and policy support.
26. Almost 81% of the Pacific population live in rural or outer island communities (WHO/SOPAC 2008); however, the migration towards urban areas in most Pacific countries places further stress

in already limited agricultural capacity and urban infrastructure, including water supply and sanitation systems. This movement is somewhat offset by the net national emigration of some countries; however, the largest countries are recording both net immigration and high urban growth (Table 2).

27. Agriculture and fisheries are the primary economic sectors in most PICs, and for many communities and countries these activities represent the sole source of income and exports (Table 3). Mining, forestry, textiles and tourism are also important regionally. A review of official development assistance (ODA) into the Pacific island countries portrays how heavily dependent many countries are on overseas support, with half of the fourteen countries receiving ODA exceeding 30% of their GDP. This support reflects in part the lack of capacity within countries exacerbated by the emigration of skilled islanders, but also the economic vulnerability of many of the islands.

Table 3 – Key regional economic indicators⁽¹⁾

Country	GDP per Capita USD\$	GDP Growth (%) ⁽³⁾	ODA as %age of GDP (%) ⁽²⁾	Key Economic Sectors ⁽³⁾
Cook Islands	10 875	-1.2	4	Tourism, black pearls, offshore finance centre
Federated States of Micronesia	2 183	-2.9	49	Fisheries, tourism, copra
Fiji	3 499	0.2	2	Tourism, sugar, textiles
Kiribati	1 490	3.8	35	Copra, fisheries, agriculture
Marshall Islands	2 851	1.2	35	Copra, fisheries, tourism
Nauru	2 071	-0.1	113	Mining, coconuts
Niue	9 618	5.6	88	Tourism, handicrafts
Palau	8 423	2.0	14	Tourism, agriculture, fishing
Papua New Guinea	897	7.0	5	Agriculture, petroleum, mining, forestry, fisheries, copra, palm oil
Samoa	2 672	4.5	7	Fisheries, tourism, textiles, automotive parts
Solomon Islands	1 014	7.3	63	Forestry, fisheries, palm, copra, mining
Tonga	2 629	1.2	12	Agriculture, fisheries, tourism
Tuvalu	1 831	2.5	44	Fisheries, copra
Vanuatu	2 218	6.6	13	Tourism, agriculture, offshore financial centre, fisheries, forestry

Notes: (1) Data from the 2010 Pocket Statistical Summary unless otherwise stated (SPC 2010a)

(2) Data from Tracking governance and development in the Pacific (AusAID 2009)

(3) Business Advantage International (2010)

28. Pacific island countries are amongst the most vulnerable in the world to natural disasters, in a region where disasters are becoming more intense and more frequent (Bettencourt et al 2006). Costs to the region associated with natural disasters in the 1990s alone were approximately US\$2.8 billion (Bettencourt et al 2006). The economic impacts are potentially a significant constraint to the growth of several countries, with the average economic impact of natural disasters in Samoa at 6.6% of GDP and Vanuatu at 4.4% (Bettencourt et al 2006), compared with global averages typically at 1.2% (Okuyama and Sahin 2009). The costs associated with natural disasters are exacerbated by little or lack of attention paid by Pacific island governments to disaster risk management (PIFS 2009).
29. Critically, some of the Pacific countries at greatest risks to natural disasters are those that are the least developed to manage these risks. Four of the fourteen Pacific PICS (Kiribati, Solomon Islands, Tuvalu and Vanuatu) are amongst the United Nationsq least developed countries, reflecting low incomes, weak human assets (nutrition, health, school enrolment and adult literacy) and economic vulnerability.

30. Access to improved sanitation and safe drinking water supply are fundamental to reducing disease and improving living conditions. Despite significant efforts to improve sanitation and drinking water access in the Pacific, overall access to sanitation (53% of population) and drinking water (50%) remains low, with virtually no change over the past 20 years (WHO and UNICEF 2010).

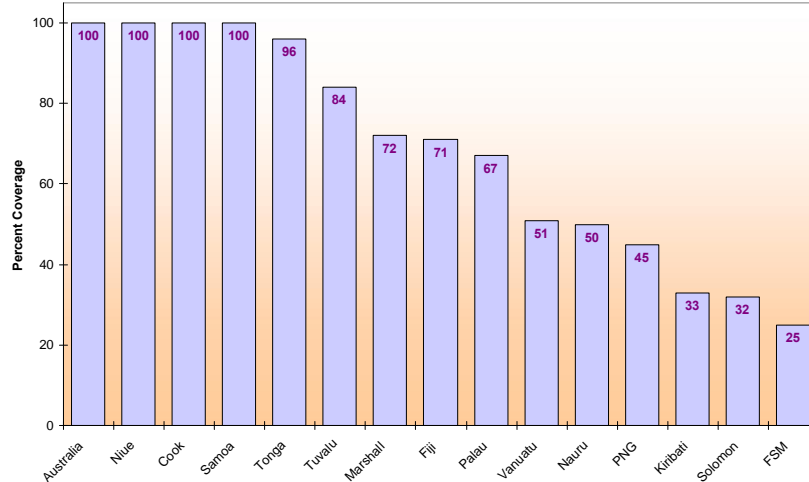


Figure 3 – Improved Sanitation Access (Data from WHO and UNICEF 2010)

31. The low rates of improved sanitation are consistent with elevated rates of water-borne diseases compared with regional developed countries such as Australia (WHO/SOPAC 2008). There is a reasonable correlation between diarrhoeal DALYs and access to improved drinking water (Figure 3).

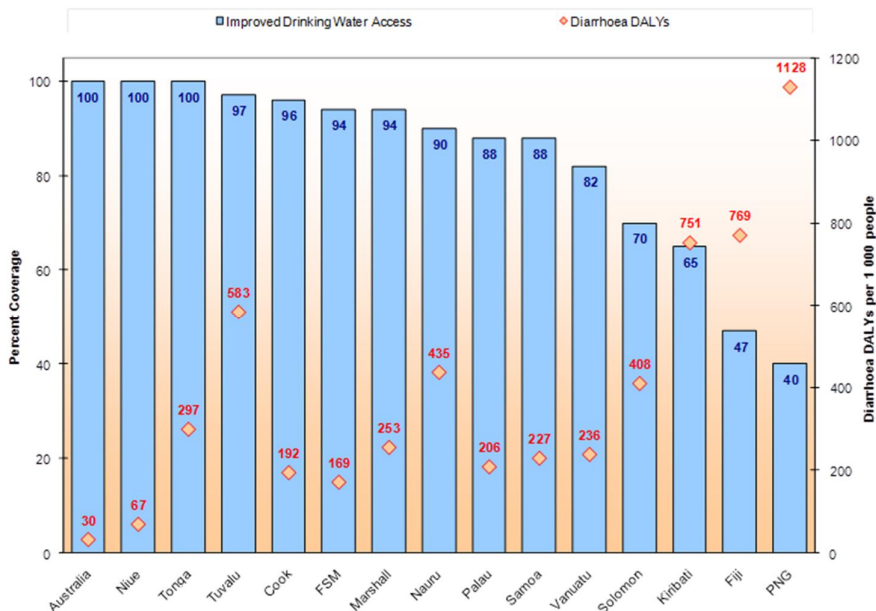


Figure 4 – Improved Drinking Water Access and Diarrhoeal DALYs¹
DALY data from WHO (2009) and Drinking Water Access from WHO and UNICEF (2010)

¹ DALYs . Disability adjusted life years: a WHO measure of the loss of life and quality of life associated with diseases

32. Typically about 10% of all deaths of children less than five years old in the Pacific island countries are attributable to diarrhoeal diseases (WHO/SOPAC 2008). About 90% of these diseases can be attributed to the lack of sanitation treatment systems, high levels of unimproved drinking water and poor hygiene (WHO/SOPAC 2008), although the overall health impacts may be significantly higher with an indirect influence of these risk factors on many other causes of death (Prüss-Ustün et al. 2008).

1.1.4 State of Water Resources

33. Water resource availability differs dramatically across the region, with parts of large islands reliably receiving over 10 m rainfall annually and annual run-offs in excess of 2,000 mm (Hall 1984), to several atolls with no significant surface or groundwater resources and variable rainfall patterns (Table 4). Whilst runoff may be high across several of the larger islands receiving high rainfall, the infrastructure is generally not in place to capture, store and distribute the water.

Table 4 – State of water resources of Pacific countries

Country	Total Renewable Water Resources ¹ Mm ³ .yr ⁻¹	Average Rainfall ¹ mm.yr ⁻¹ (spatial range)	Water Use ¹ Mm ³ .yr ⁻¹	Total Rainfall Mm ³ .yr ⁻¹	Rainfall Productivity ² \$.m ⁻³	Primary Water Resources ³
Cook Islands	56 ⁴	2 040 ⁴ (1 574 to 3 063)	4.4 ⁵	140	0.48	SW, GW,RW
Federated States of Micronesia	2 034 ⁶	4 115 ⁶ (3 028 to 5 000)	na	2 900	0.08	SW,GW, RW, D
Fiji	28 600	3 040 (2 000 to 10 000)	70	56 000	0.05	SW,GW, RW
Kiribati	21 ⁸	2 000 ⁸ (1 000 to 3 200)	na	1600	0.09	GW, RW, D
Marshall Islands	1.6 ⁹	3 378 ⁹ (2 000 to 4 000)	1.7 ¹⁰	610	0.24	RW, GW, D
Nauru	- ¹¹	2 167 ¹¹	0.42 ¹²	48	0.42	D, RW, GW
Niue	132 ¹³	2 180 ¹³	0.002 ¹⁴	570	0.03	GW, RW
Palau	1 160 ¹⁵	3 784 ¹⁶	5.5 ¹⁶	1 700	0.10	SW, GW, RW
Papua New Guinea	801 000	3 142 (1 000 to 8 000)	392	1 100 000	0.01	SW, GW, RW
Samoa	1 328 ¹⁷	3 000 ¹⁸ (2 500 to 6 000)	12.4 ¹⁹	8 400	0.06	SW, GW, RW
Solomon Islands	44 700	3 028 (2 000 to 4 500)	na	92 000	0.01	SW, GW, RW
Tonga	401 ²¹	2 062 ²² (1620 to 2450)	na	1 300	0.20	GW, RW
Tuvalu	1.0 ²³	2 850 ²⁴ (2 737 to 3 498)	0.2 ²⁴	74	0.24	RW, GW, D
Vanuatu	9 970 ²⁶	2 338 ²⁷ (1 400 to 4000)	12 ²⁷	29 000	0.18	SW, GW, RW

34. Typically, the Pacific high volcanic islands receive high rainfall, which generates high runoff, in turn leading to rapid responses in steep valleys, and flash flooding on fringing coastal plains. The

limestone and coral islands and atolls generally have limited or no surface water and are reliant on a combination of rainwater and limited groundwater lenses, supplemented by desalination on some islands to meet water resource needs. Exceptions to this include the drier Port Moresby area in Papua New Guinea and the large groundwater lens under Niue.

35. Much of the Pacific household water and irrigation is reliant on rainfall. The abundant rainfall in many areas, combined with the lack of surface water resources and, on some islands, limited or no potable groundwater resources and low investment in water infrastructure in other areas mean that many communities and even countries are highly vulnerable to rainfall variability, with many countries experiencing frequent droughts.
36. The amount of water available in thin groundwater lenses in atolls and limestone islands is a complex balance between recharge, exchanges with seawater and extraction for use. Often the limited availability of freshwater will lead to potable use of brackish groundwater, such as the high chloride water used for a potable source in Kiribati (Kingston 2004). Many of these lenses are very sensitive to rainfall variability, shrinking during low rainfall periods, and are also particularly vulnerable to salinisation as a result of overpumping.
37. The highly porous nature of the sandy, calcareous and volcanic soils commonly found on Pacific islands leads to high groundwater recharge rates, but also makes many groundwater resources vulnerable to pollution from sanitation systems and agricultural activities. Nationally significant aquifers in Majuro (Marshall Islands) and Tarawa (Kiribati) have been compromised by septic tank seepage from densely populated urban areas overlying shallow aquifers.
38. As well as compromising shallow aquifers, faecal waste from humans and animals (mostly pigs and cattle) cause pollution of surface waters and water supplies in nearly all Pacific island countries. Eutrophication² of waters from these sources and agricultural chemicals has been identified as the major environmental threat to Pacific aquatic ecosystems (COS 2009).
39. Regionally, agricultural chemicals, mining discharges and industrial wastewater are also significant pollution sources. Agricultural chemical use increased significantly from the mid-1990s in the Pacific region and continues to be a threat to water supplies and ecosystem health (McIntyre 2005). Sediment loads arising from deforestation, mining and agricultural activities are also a significant threat to ecosystems and potentially compromise water treatment capacity in water supplies.
40. Mining is a significant source of income in Papua New Guinea and Nauru; however, impacts of mining waste are potentially catastrophic. The Ok Tedi Mine, located in the central Papua New Guinea highlands has severely impacted the Fly River for hundreds of kilometres downstream by discharging tonnes of mine waste and tailings into the river system daily for decades, and discharges remain at about 160,000 tonnes per day (Lottermoser 2010).
41. Land availability and tenure are both an impediment to, and provides unique opportunities for, poverty alleviation and sustainable development of land (UNESCAP 2010). In Pacific island countries, land tenure is typically very high (e.g. traditional tenure in Papua New Guinea is 97% (Boydell 2001) and traditional land tenure regimes in urban centres generally do not readily adapt to the needs of rural and outer island immigrants, leading to the development of insecure squatter settlements with very poor solid waste, water, sanitation, electricity, and other urban services (ADB 2009). Complex land tenure frameworks, combined with high population densities and limited land availability place particular stress on systematic water management in the low coral islands and atolls. Even in larger islands, obtaining adequate land access can be a barrier for public infrastructure projects.
42. Water use efficiency in the Pacific islands varies depending upon the specific context of the island hydrology and supply system. Typically leakage losses within water supply systems are as high as 50%, and potentially limit development opportunities in countries with supply systems reaching their capacity due to leakage losses (Dawe 2001). Pacific island water resources are highly vulnerable to the impacts of climate variability and change, in particular increases in the rainfall variability and the frequency of storms and sea-level rise. Currently Pacific islands have a strong reliance on seasonal rainfall, in particular countries such as Tuvalu and Kiribati, which are

² Eutrophication is the increase in nutrients in a water body, increasing the plant and algal growth, which may upset ecosystem balance.

heavily reliant on rainfall for drinking water resources. Increased variability in rainfall patterns, particularly increases in drought periods, significantly increases the freshwater vulnerability of islands relying predominantly on short-term rainfall for the majority of water resources.

43. Rainfall across the southern Pacific islands is strongly influenced by the El Niño Southern Oscillation (ENSO)³ phenomena, influencing wet and dry cycles. An El Niño event typically increases rainfall and storm activity for central Pacific islands including Tuvalu, Samoa and western Kiribati, whilst coinciding with drought resulting in water shortages and drought in American Samoa, Fiji, Kiribati, Marshall Islands, Federated States of Micronesia, Papua New Guinea, Samoa and Tonga, with corresponding threats to food security and serious impacts on economies in these countries (UNESCAP 2007). A La Niña event; however, brings increased rainfall to the central Pacific islands and wetter conditions to much of Melanesia.
44. The low water extraction from many of the large island systems and the limited numbers of dams and gravel mining generally means that river flows are not significantly altered. Exceptions to this include areas of significant land clearance, such as the Nadi River basin in Fiji (Lal et al. 2009); however, as hydropower is being developed regionally, flow regimes will be changed significantly to accommodate the year-round supply demands. Similarly, low flows may suffer in small high volcanic islands, such as Rarotonga (Cook Islands) where a high proportion of the low flows are being redirected to water supplies. Little assessment has been undertaken on the ecological impacts of these altered flow regimes.

1.1.4.1 Atolls and Coral and Limestone Island Freshwater Resources

45. Water resources on atolls and coral and limestone islands are generally limited to groundwater, which is often very limited on low coral islands and atolls. Rainwater collection augmented by groundwater and desalination, generally provide the main water resources on these islands. Surface water is not common on these islands due to the high transmissivity of the soils, and limited extent of the islands, limiting runoff and drainage. Where they do occur, lakes and other surface bodies are commonly brackish; however freshwater lakes do occur, such as Vai Lahi on Niuafuofu, Tonga and rare occurrences on coral islands include Teraina, Kiribati, maintained by very high local rainfall.
46. Fresh groundwater on atolls, coral and limestone islands is often a delicate balance between rainfall, evapotranspiration, groundwater extraction and mixing with surrounding saline groundwater (Figure 5). On low-lying islands, this balance can be further complicated by storm surges, during which saline water mixes with fresh groundwater. The fresh groundwater typically occurs in lenses, floating on saline groundwater with a large brackish transition zone, where larger leeward islands are normally able to sustain much larger lenses than smaller windward islands (Bailey et al. 2009). Many of these lenses are highly sensitive to short-term rainfall variability, with reductions in the available resources by over 50% in some aquifers and complete depletion in others (Bailey et al. 2009).
47. The lack of fresh surface waters and reliable fresh groundwater resources has resulted in many small islands relying on rainwater for primary supplies. Tuvalu for example is almost entirely dependent upon rainwater, supported by small desalination plants. This reliance on rainfall makes many small islands, and Tuvalu particularly, highly vulnerable to rainfall variability and associated drought. Several countries, including Nauru and Kiribati rely on a combination of desalination and rainfall harvesting; however, costs of generating power and maintaining systems in such remote locations mean that water is expensive to generate, typically over US\$4/KL (Freshwater and Talagi 2010; SOPAC 2007a). Even more extreme measures have been employed during drought, with water imported to Nauru in 2002 to resolve shortages, estimated at \$58/KL (SOPAC 2007a). As a response to the 2011 Tuvalu State of Emergency, water was again imported into Tuvalu to alleviate drought conditions.
48. The water resources and supplies on small low-lying islands heavily reliant on rainfall and fragile groundwater lenses are therefore amongst the most vulnerable in the world to failure.

³ The ENSO phenomenon refers to climatic and oceanic cycles of warming and cooling in the eastern Pacific Ocean. El Niño events are associated with warming and La Niña with cooling.

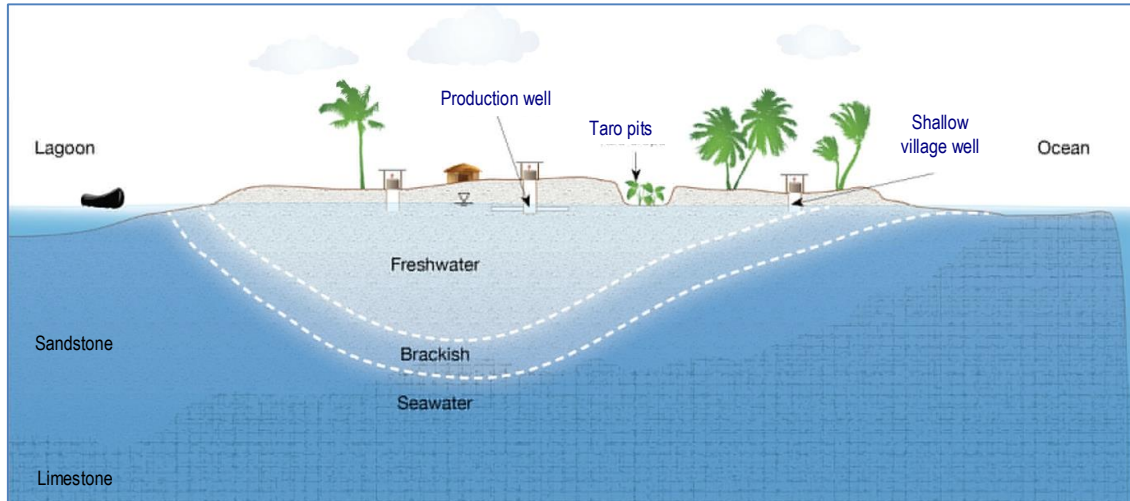


Figure 5 – Concept model of atoll groundwater.

1.1.4.2 High Volcanic Island Freshwater Resources

49. Surface water in high volcanic islands is generally abundant, with high rainfall over central highlands and high runoff rates due to steep slopes and shallow base rock. Groundwater resources are typically not well developed, largely due to the availability of surface water resources, with a few notable exceptions, including the Port Vila water supply in Vanuatu. Other water sources such as desalination tend to be used only to address local conditions and lack of supply infrastructure (e.g. Denarau Island, Fiji and Rarotonga, Cook Islands).
50. The high rainfalls experienced in the large islands, with extremes over 10 m in central Papua New Guinea (McAlpine et al. 1983), and runoff coefficients of over 75% (Hall 1984), provide these islands with abundant water resources. The high flows are often accompanied by high sediment loads, exacerbated by land clearance and mining. The Fly River alone discharges over 100 Mt of naturally- and mine waste-derived sediment per year in approximately 190 billion cubic metres of water (Markham and Day 1994). Many small high volcanic islands also have springs and perennial surface water resources, with discharges onto coastal plains, an example being Rarotonga.

1.1.5 Climate Variability and Change

51. Pacific island freshwater and coastal resources are highly vulnerable to many of the impacts of climate variability and change, in particular increases in rainfall variability, sea-level rise and the frequency of tropical storms. The IPCC 2007 report identified that under most climate change scenarios (Table 5), there is a very high level of confidence that water resources in small islands will be seriously compromised (IPCC, 2007). In the Pacific, a 10% reduction in average rainfall would reduce the freshwater lens on Tarawa (Kiribati) by 20%, and that this would be further compounded by sea-level rise potentially reducing the lens a further 29% (IPCC 2007).
52. The strong reliance of many atolls and coral islands on thin groundwater lenses makes them particularly vulnerable to sea level rise (SPREP 1999). Impacts on atolls in Kiribati and Tuvalu are likely to include increased reduced long-term freshwater lens capacity and potential increases in salinisation from storm surges (SPREP 1999). PICs recognize that they have limited water resources and that they are highly vulnerable to climate variability and change. Time lags between a climatic extreme and a water shortage can be as small as a week for countries entirely reliant on rainwater, or up to a month for those reliant on surface water, and even six months for some groundwater bodies. Flooding, especially associated with cyclonic rainfall events, can be near instantaneous, and outside of Papua New Guinea, arrive less than 6 hours after the rain storms. For example in Nadi, Fiji, there has been three catastrophic floods in the past 4 years. Similarly storm surges have also been a source of sudden and destructive

events on coastal communities. Coastal vegetation's natural buffering capacity has been lost through urbanization and resource demands.

Table 5 – Climatic changes predicted by the IPCC and effects on water availability, accessibility and use (adapted for Pacific Islands from IPCC 2007).

Predicted change	Confidence	Impact on water security
More frequent or intense floods	Very likely	Damage to water storage infrastructure Increased water pollution Potential relief of water scarcity in some areas Higher operating costs for water systems Saltwater intrusion in coastal areas
Increase in area affected by drought	Likely	Reduced water availability Reduced groundwater resources Compromised water quality Increased risk of water-borne disease Increased demand for irrigation
More frequent or intense tropical cyclones	Likely	Damage to water storage/supply system Power outages causing disruption to public water supply Increased water pollution Increased risk of water-borne disease
High sea-level rise	Likely	Damage to water storage/supply system Saltwater intrusion in coastal areas Salinisation of groundwater and estuaries
Higher water temperatures	High	Increased water pollution Water quality problems, such as algal blooms and reduced dissolved oxygen content Higher operating costs for water systems
Changes in river flow and discharge	Likely	Changes in seasonal water availability Increased risk of flash floods Impacts on groundwater recharge Changes in water availability for hydropower generation
Increased rainfall variability	Very likely	Changes in seasonal water availability Changes in water storage Increased demand for irrigation water

53. There is considerable uncertainty about the effects of climate variability and change on the ENSO cycle, with responses differing from model to model; however, the majority of the models suggest a subtle shift to increasing El Niño-type activity, (IPCC 2007) with more frequent droughts and floods anticipated.

1.1.6 Sectoral, Institutional, and Policy Context

54. The R2R program has been designed to complement the implementation of relevant national priorities including the CBD National Biodiversity Strategy & Action Plan (NBSAP), UNFCCC NAPA, UNFCCC National Communications, REDD+ Policies, UNCCD National Action Plans, National Sustainable Development Strategies and other documents. For each country, the relevance of this program to the implementation of the various strategies under the relevant

Conventions is described in Annex C of the GEF Council approved R2R Program Framework Document.

55. The Strategic Action Programme (SAP) for the International Waters (IW) of the Pacific Islands (1997) developed a strategy for the integrated sustainable development and management of IW to address the priority concerns for PICs. The SAP proposed the need to address the root causes of degradation of IW through regionally consistent, country-driven targeted actions that integrate development and environment needs and promote good governance and improved knowledge approaches. Major regional investment and assistance programmes have been guided by a small number of regional strategies that were agreed to under the Pacific Plan, which for the water sector included: (1) the Wastewater Policy and Wastewater Framework for Action (2001); (2) the Pacific Regional Action Plan on Sustainable Water Management (2002); and (3) the Pacific Framework for Action on Drinking Water and Health (2005). In response to growing pressures on PICs water resources, the then Governing Council SOPAC called for a revision of the regional strategy and action plan to address urgent issues pertaining to the sustainable management of water resources and delivery of water and sanitation services. This revision is ongoing and timely coinciding with other significant changes in regional strategies. The recent decision by Pacific Forum Leaders to graduate the Pacific Plan to a Framework for Pacific Regionalism with the primary objective of %ustainable development that combines economic social, and cultural development in ways that improve livelihoods and well-being and the use of the environment sustainably+will drive sectoral integration strategies. The regional agreement to integrate Disaster Risk Management and Climate Change Adaptation and Mitigation into a Strategy for Disaster And Climate Resilient Development in the Pacific exemplifies this. The integration water, land and coastal management through the proposed Ridge to Reef framework at National and regional levels is therefore in alignment with National and Regional Integration Strategy.

1.2 THREATS AND ROOT CAUSES

56. PICs currently face serious water resource and environmental stress issues, challenges that continental countries are likely to face in coming decades. Combined with limited human and financial resources PICS are faced with finding innovative and locally appropriate and adaptive solutions to address these challenges. The Strategic Action Programme (SAP) for the International Waters (IW) of the Pacific Islands (1997) developed a strategy for the integrated sustainable development and management of IW to address the priorities of PICs. The SAP identified a variety of priorities:
- pollution of marine and freshwater supplies(including groundwater) from land-based activities;
 - physical, ecological and hydrological modification of critical habitats; and
 - excessive exploitation of living and non-living resources.
57. Key environmental threats to the Pacific Region as identified by the SAP Process are summarized below (Table 6). Water and climate related threats are the focus of the Pacific Regional Action Plan of Sustainable Water Management (Pacific RAP). The Pacific RAP focuses on turning key threats into sustainable solutions through a series of key actions, agreed to by 16 Heads of State in the Pacific Region. In the more populated areas, population densities (especially on capital atolls) can become so great that water demand exceeds water availability.
58. Water demand in urban catchments results in complete loss of flows and degradation of downstream users supplies. Water quality degradation in urban areas and especially in low-lying atoll islands is a serious concern.

Table 6: Key Environmental Threats to the Pacific Region

Threats to:	Threat 1	Threat 2	Threat 3
1. Critical species and habitats exposed to	Nutrients derived from sewage, soil erosion and fertilizers due to changing land-use practices and urbanization (contributing to the pollution);	Physical alterations of the sea-bed or coastline in particular through destruction of fringing reefs, beaches, wetlands and mangroves for coastal	Overexploitation from overfishing (esp. urban areas). Weakened natural marine ecosystem resilience in the face of overfishing, pollution, elevated

<p>several forms of land based pollution</p>	<p>Nutrient overloads particularly affect coral reef ecosystems, weakening the reef carbonate skeleton and smothering it; Solid-waste disposal and sedimentation. Sedimentation is derived from soil erosion, dredging, coastal development, and upstream, inland activities including depletion of forest resources and related habitat destruction</p>	<p>development and by sand extraction</p>	<p>nutrient levels and sedimentation. Mitigating these threats is vital for species and habitats and the overall health of fresh and marine systems</p>
<p>2. Living marine and coastal resources</p>	<p>Over-exploitation of inshore fisheries exacerbated by destructive fishing methods, including explosives and various types of toxic compounds</p>	<p>Chronic environmental degradation with gradual rather than sudden changes in the resources, making the relationship between cause and effect less obvious and transparent, reducing the likelihood of timely and appropriate action being taken</p>	<p>Increased severity of destructive storms further threatens degraded natural barriers diminishing environmental services. Restoration of R2R functionality vital to Island Community resilience</p>
<p>3. Non-living resources, specifically the quality of both fresh and marine waters</p>	<p>Threat from land based sources of pollution. These derive in particular from sewage and poor sanitation practices, sediments (soil erosion, agriculture, forestry, poor land-use practices), urban run-off, agro-chemicals, and solid waste</p>	<p>Beaches, reef-flat sand and coastal aggregates are threatened by overexploitation. Extraction rates far exceed natural replenishment rates Degradation of the coastal and marine resources that form the ecological and economic foundation of many Pacific communities</p>	

59. Populations of PICs are small in global terms but 11 of the 14 PICs have birth rates that rank in the top 100 countries, have water-related health concerns, and many live in poverty. The comparatively small size of populations and the lack of natural resources is a severe constraint to economic growth and creates governance and management challenges. Geographical isolation limits trade between countries and within countries. Distance also imposes high costs and limits interchange in such fields as education, health and professional disciplines, all of which are important to ICM.
60. On average, approximately 40% of the Pacific population now lives in urban areas, a trend that is increasing. National urban growth rates are 50 to 100% higher than overall national population growth rates (which are high at av. 2-3% p.a.). Education, employment, lifestyle choices, increasing centralization of government sector bureaucracy, moderate industrialization and private sector development have all fuelled the population movement to cities and towns. Squatter settlements are increasing and housing densities continue to rise, domestic household and industrial waste is increasingly visible. The rate of urbanization has overwhelmed the capacity of PICs to keep pace with basic services (water supply and sanitation), increasing urban and wastewater pollution, urban and peri-urban land degradation and water degradation from inadequately controlled development. Smaller islands are often ecologically under considerable stress with 85%- 90% of the vegetation cleared for example on Majuro Atoll (Marshall Islands, Nauru and Fongafale (Tuvalu). The difficulties PICs have in the delivery of water supplies and sanitation services are evidenced by the lack of progress towards achieving Millennium Development Goal (MDG) targets. Almost half the PICs have less than 50% coverage with improved sanitation and the Pacific has an overall 48% coverage with improved sanitation in comparison to the global average of 62%.
61. The economies of PICs cover a mixture of sectors including natural resources (for example, forest products, marine fisheries) and minerals, although some PICs have minimal resources. The exploitation of natural resources has not always been well governed, particularly in cases where external interests have dominated. Tourism is an extremely important and evolving contributor to many economies in the region, with the balance between tourism development and environmental sensitivity increasingly difficult to maintain. Tourism is a significant consumer of water, land and coastal resources in those locations where facilities have been developed, and

also contributes to the pollution of freshwater and marine waters for example Fiji's annual visitor number is approaching 1 million.

62. The region is highly vulnerable to climatic factors such as the El Niño and La Nina cycles and climate variability. Climatic change will impact on water availability including the potential threat of sea level rise to low-lying islands and coastal zones. Groundwater is an extremely important water resource in the Pacific region, although volumes are limited in comparison to mainland regions, and are highly vulnerable to overuse and contamination. This is a feature that reinforces the need for a targeted approach to water, land and coastal management from country to country within the Pacific region.

1.3 BARRIERS

63. The similarity of the water and environmental problems faced by PICs, and their solidarity on the resolution of these is vital to maintaining the political will to seek remedies, to promote action based on the SAP for International Waters, and for the delivery of the Pacific Regional Action Plan on Sustainable Water Management (Pacific RAP). The Pacific RAP builds on the SAP with six key action areas ranging from **reducing water pollution** to **coping with island vulnerability, strengthening institutional arrangements, and leveraging additional financial resources**. **Regional, national and local partnerships** are essential to sustain activities that promote change over the long term and to foster support and resources for new ICM approaches. The Pacific Partnership on Sustainable Water Management played a pivotal role in the development and implementation of the GEF Pacific IWRM project and will continue to play a significant role in this project.
64. The ability of SIDS to manage their resources and ecosystems in a sustainable manner while sustaining their livelihoods is crucial to their social and economic well-being, and is clearly directly related to GEF's mandate for protection and sustainable management of biodiversity and international waters. The PICs also have specific needs and requirements when developing their economies. These are related to small population sizes and human resource limitations, small GDPs, limited land area and limited natural resources. Competing land pressures, the choice of whether to use precious and scarce land for agriculture, water reserves, a school or recreation area, are appreciated at the household, village and wider community level. In particular, every coastal village community understands the connection between activities on the land and in the sea, as they impact on freshwater, coastal interface, lagoons and coral reefs. The small size of the catchments, shallow aquifers and lack of natural storage affects all water and coastal resource users from urban and rural water supplies, commercial forestry, subsistence agriculture, and the fisheries/reefs and tourist developments.
65. The principal barriers to date that have confounded introduction of more integrated approaches to environmental and natural resource management in PICs include:
 - Fragmented, single sector development efforts (including donor funded) across different landscapes and government levels that do not include needed spatial management techniques due to unclear institutional responsibilities, weak policies, communication & coordination;
 - Limited knowledge and application of ICM and IWRM, SLM and SFM practices and tools in the Pacific Islands;
 - Limited human and institutional capacity for ICM in the PICs with much capacity lost to emigration;
 - Limited experience and capacity in linking sustainable land management in watersheds through IWRM with the livelihood needs of downstream coastal residents and ecosystems through ICM;
 - Limited PICs knowledge and national/local capacity on SLM, IWRM and ICM as well as carbon sequestration opportunities;
 - Insufficient involvement of key civil society and other stakeholders spanning the ridge to the reef;
 - Rising development pressures on a small taxation base, and environment and natural resource management provided with inadequate resources;

- Weak governance structures and lack of government/donor interest in supporting integrated approaches across sectors, which are more difficult to achieve; and
 - Insufficient political and public awareness of the role water, land, and biological diversity play in economic development, public health and environmental protection
66. The GEF IWRM Pacific IWRM Project made rapid, significant and demonstrable progress at both a national and regional levels in overcoming these barriers. The national water and sanitation policy and IWRM planning reforms achieved as a result of that project has resulted in the formal national adoption of almost 90 percent of the policies, legal reforms and implementation plans for IWRM. These reforms were highlighted by the terminal evaluation of this IWRM project as *an enormous achievement in a policy arena that can sometimes take decades to see progress*. The report of this evaluation also noted that these achievements of the IWRM project had been more than matched by the *remendous gains made at the local and regional levels, both in terms of the technologies and practices that have been developed and the local ownership and guidance given to nurturing, demonstrating, advocating and in many cases replicating these technologies and practices*. It was highlighted further that the focus of the GEF Pacific IWRM project in addressing the above listed barriers via an emphasis on strengthened cross-sectoral coordination and community participation in project planning and execution was critical in achieving the level of reform and uptake of best practice technologies and measures in the participating countries.
67. National and Local Governance that is based on *Ridge to Reef* (R2R) principles will require developing an understanding from community to cabinet of the social, economic and public health importance of managing on this scale. The inter sectoral coordination established through GEF PACIFIC IWRM within PICs need to be expanded and strengthened to enable integrated planning and the implementation between departments, ministries and agencies across sectors when it comes to water resources allocation, usage, pollution prevention, monitoring and management (such as public health, fisheries, tourism, the environment, power generation and commercial enterprises). Engaging leaders throughout the community to cabinet continuum in this process is essential to breaking down the barrier of sector silos.
68. PICs have consistently identified a lack of expertise and baseline knowledge relating basins to coastal areas as being a fundamental barrier to any informed decision-making on water, land and coastal resources management and protection. The GEF Pacific IWRM Project resulted in a demonstrable development of national expertise at operational, management and strategic levels. Indeed that project's independent terminal evaluation rated achievements in capacity building and sustainability as highly satisfactory, and *a hallmark success of the project*. Furthermore, the report of that evaluation highlighted that the project was highly successful in delivering on outputs of upgrading community, national and regional skills, having in place active twinning programmes, and knowledge management networking and information sharing, and in doing so *has set the countries and region up for sustaining results*. That report further highlights that *the Pacific region now has a group of competent project managers who can plan projects, prepare logframes, manage delivery of services, monitor and report on progress and results, represent financial reports, and tell compelling stories about IWRM successes*. Accordingly, there is a strong region-wide need to retain and nurture this national-level capacity.

1.4 BASELINE ANALYSIS

69. Most PICs are increasingly dealing with threats to water, land and inshore coastal areas from population growth, increased urbanization and development exacerbated by the regions high climatic variability and predicted climate change impacts. PICs have limited resources to address these issues through a reduction of these stressors on the environment. At the National Level PICs agencies of Agriculture, Forestry, Fisheries, Environment and Water are primarily focused on developing and sustaining their burgeoning populations. PICs are heavily reliant on regional organizations such as SPC/SOPAC and NGOs for specific programmes addressing stressors in each of these sectors. Many PICs are struggling to effectively programme the significant climate change associated programme funding. Six PICs have developed National Adaptation Programmes of Action (NAPA) which provide prioritization for immediate actions and the proposed project will link where possible to the coastal and water associated projects. A

summary of national-level activities to address these threats and root causes is provided in Annex 4 of the Pacific R2R Program Framework Document.

70. SPC programmes are funded through a mix of annual core funding sourced from donors such as Australia, New Zealand and European Union (EC) and project funding from a wide variety of donors. SPC integrates and coordinates its efforts at a national level through agreed Joint Country Strategy Programmes (JCSP) periodically developed, revised and agreed with PICs. The JCSPs establish the relationship between the various SPC programmes and the responsible agencies within the PICs. The Disaster Reduction Programme provides PICs with technical and policy support to strengthen disaster risk management (DRM) practices in collaboration with a range of regional and international development partners and donors. The Ocean and Islands Programme (OIP) works across a broad range of marine, coastal and island resource use, vulnerability and climate change adaptation issues. It provides a range of specialist technical capacities, skills and tools in support of PICs. Importantly OIP's technical role involves the collection and analysis of baseline data such as bathymetric products, maritime boundary data, oceanographic and geophysical data, topographic data, geological and geomorphologic assessments, environmental baseline data and mapping.
71. The Coastal Fisheries Programme (CFP) supports PICs in the management and sustainable development of coastal fisheries, near-shore fisheries and aquaculture and in the development of socially achievable coastal fisheries management policies. It provides technical support to PICs governments, private enterprises and stakeholders in the development of sustainable near-shore fisheries to provide food security, livelihoods, economic growth and climate change adaptation. The Land Resources Division (LRD) seeks to improve the food and nutritional security of Pacific Island communities through development and sustainable management of land, agriculture and forestry resources. Specifically its Integrated and Sustainable Resource Management and Development programme assists SPC Member countries in integrated and sustainable agricultural and forestry resource management and development, and Food and Nutritional Security programme seeks to improve food and nutritional security in PICs. The Water and Sanitation Programme (WSP) provides support to PICs through capacity building, awareness and advocacy related to the management of water resources and the provision of water supply and sanitation services. This project will enable the harnessing and coordination of these considerable existing inputs within the R2R approach.
72. There are several associated regional and national projects that support closely related initiatives. The SPC/GIZ Coping with Climate Change in the Pacific Island Region (CCCPIR) Programme is strengthening the capacities of Pacific member countries and regional organizations to cope with the impacts of climate change with a focus on land (and coast) based natural resources such as agriculture, forestry and land use, fisheries, tourism, energy and education. Whilst the EDF 10 Pacific Natural Disaster Facility is strengthening institutional arrangements for disaster risk management to achieve integration of DRM and Climate Change Adaptation (CCA) arrangements into central and key line ministries in PICs. The programme has both national and regional components and works in 14 PICs. The Annual Pacific Disaster Platform and Regional Climate and Water Consultations provides an ideal vehicle for high level integration of strategies and National level cooperation.
73. Other notable and related NGO programmes include IUCN's Mangrove Ecosystems for Climate Change Adaptation and Livelihoods (MESCAL) project which is addressing the key challenges of mangrove management in attempts to increase the resilience of Pacific Island people to climate change and improve livelihoods. Similarly IUCN's Mangrove Rehabilitation for Sustainably-Managed Healthy Forests (MARSH) is intended to support the PNG Government in achieving fostering community ownership of mangrove rehabilitation project sites, implement capacity-enhancement activities at the national and subnational levels, and support scientific and policy research by local higher education institutions.
74. ADB is providing technical assistance from 2011 to 2014 to PNG, Solomon Islands, Vanuatu and Fiji through the project "Strengthening Coastal and Marine Resources Management in the Coral Triangle of the Pacific (Phase II)" with the aim of improving the resilience of their coastal and marine ecosystems and climate change. Local lessons learned and materials will be useful to outreach to the PICs.

75. UNDP will provide the equivalent of \$250,000 in Water Resources Management courses, training materials, and databases available via the UNDP Cap-Net program that can support project implementation including capacity building, strategic planning processes, legislative reform and mainstreaming of climate and gender into IWRM. Available relevant training materials include: Groundwater in IWRM; IWRM as a Tool for Adaptation to Climate Change; Conflict Resolution and Negotiation Skills for IWRM; Integrated Water Resources Management Plans; Why Gender Matters; Streams of Law; a training manual and facilitators' guide on water legislation and legal reform for integrated water resources management; and Economics in Sustainable Water Management.
76. The project will also build on a UNDP regional project ~~Pacific Risk Resilience Programme~~ which focuses on strengthening governance mechanisms for DRM and CCA at the sub-national and local levels in Vanuatu and Solomon Islands (together with Fiji and Tonga). The goal of the program is to strengthen the resilience of the Pacific Island communities to disaster and climate change related risks. The program centers on two components that will be implemented under on coordinated and integrated program: 1) risk governance; supporting mainstreaming of DRM and CCA into development planning and budgeting at all levels of government; and 2) community-level risk management; strengthening community resilience through targeted and inclusive community-based DRM and CCA (supported through a community small grants scheme) and integration of risk management into local governance mechanisms. The program will run for an initial period of four years (up to 2016) with an overall budget of \$8 million. In addition, in-kind resources of \$50,000 will be provided by UNDP Fiji.
77. Importantly, the multi-focal area, multi-trust fund and multi-agency nature of the Pacific R2R program provides an opportunity for testing cross focal area synergies, leveraging relevant existing and emerging agency programs, and interagency cooperation in vulnerable coastal areas for widespread application elsewhere. The program demonstrates a cost effective strategy in terms of reducing transactions costs of the linked projects compared to agencies conducting separate, individual national projects. Cost savings and increased effectiveness will accrue from joint meetings, regional supervision, integrated approaches as opposed to separate focal area projects, and sharing of experiences among countries that have previously demonstrated the ability to work together.

1.5 THE PROPOSED ALTERNATIVE SCENARIO

78. Despite these individual projects, there is little coordination or complementarity among them. Additionally, there is normally little interaction among individual GEF projects in different focal areas as different ministries have their donor and GEF funded activities, including the more recent Pacific Alliance for Sustainability projects. Opportunities are lost when each project is executed individually and sustainability can only be reached when they work collaboratively and in similar areas with local officials on these small islands. There is just little capacity for counterparts to provide support for multiple efforts from multiple donors. This regional project will support the national projects with coordination and opportunities for collaborative approaches, experience sharing, and learning. Additionally, it will introduce ICM into the existing network of IWRM demonstrations in each PIC to test the willingness and feasibility of R2R approaches that seamlessly link IWRM with ICM.
79. Importantly, the multi-focal area, multi-trust fund and multi-agency nature of the Pacific R2R program provides an opportunity for testing cross focal area synergies, leveraging relevant existing and emerging agency programs, and interagency cooperation in vulnerable coastal areas for widespread application elsewhere. The program demonstrates a cost effective strategy in terms of reducing transactions costs of the linked projects compared to agencies conducting separate, individual national projects. Cost savings and increased effectiveness will accrue from joint meetings, regional supervision, integrated approaches as opposed to separate focal area projects, and sharing of experiences among countries that have previously demonstrated the ability to work together.
80. A programmatic approach that is multi-focal, multi-trust fund and multi-agency involving 14 geographically-dispersed SIDS, although with limited precedence in the GEF, is clearly the most appropriate approach in the case of the PICs. The need to conserve and protect the natural resources on which the livelihoods and even the lives of people in the PICs depends spans a wide range if not all of the focal areas within the GEF . from biodiversity, land degradation,

climate change mitigation, sustainable forest management and international waters. In addition, and perhaps most critical among SIDS, is building resilience to the impacts of climate change which may be best achieved through an integrated approach that is possible only through a multi-focal area, multi-trust fund program and projects.

81. Despite some investments in climate change adaptation, disaster risk management, biodiversity conservation and freshwater and sanitation, there exists limited national and regional level coordination of project and programme planning and implementation across these sectors in PICs. Similarly, while large volumes of data on land, water and coastal systems exist, this remains unconsolidated. Given the high level of interconnectedness of these systems in small islands, effective coordinated planning of investments is constrained by limited information and knowledge sharing needed to identify compromises of, and threats to, land and aquatic uses, associated hazards to human health, and traditional and customary uses of the biodiversity and aquatic environments. Efforts to build capacity of local institutions to integrate land, water and coastal management are further constrained by the lack of incentives required to build and retain island-based project management expertise. Accordingly, while most national government officials and resource managers recognize the need for more integrated approaches to fashioning sustainable futures for island communities, barriers to integration are often viewed as insurmountable in light of economic development pressures, crises in public health associated with non-communicable diseases, and constraints in improving public education in the PICs. The strength of this project is that it really is looking at a physical basis for integration providing a logical continuum of activities from R2R which can be integrated with the other sector activities. A fundamental difference with previous projects is that this project will conduct original assessments rather than just assembling a synthesis of existing information.
82. The GEF Pacific IWRM project has made significant contributions to overcoming these barriers in the water and sanitation sector and these approaches will be extended to ICM. Specifically, the GEF Pacific IWRM project has supported improvements in natural resource and environmental management, reflecting country priorities to address water and land development issues in the International Waters focal area in relation to PICS, while also delivering significant global environmental benefits. The 13 National IWRM Demonstration projects have been a driver for water governance reform with all participating PICs having established and operating Inter-ministerial Water Committees and most having developed national water policy which have either been endorsed by Government or are in the process of being endorsed. Likewise national diagnostic reports for Water, Sanitation and Climate have been completed or are underway in the participating PICs. A summary of PICs water governance status is presented below (Table 7).
83. The GEF supported GEF Pacific IWRM project has been a valuable entry point for strengthening integrated approaches to natural resource management in PICs. Existing national coordination mechanisms involving operation of inter-linked national APEX bodies for IWRM and local coordinating committees for IWRM demonstration projects have been effective in guiding stress reduction in the water and sanitation sector and driving reform of national IWRM policy and planning. GEF Pacific IWRM has also been a valuable entry point for capacity development, helping to foster application of inter-disciplinary skills and local knowledge and integrating this into monitoring and evaluation to ensure that causes of environmental stresses and the results of interventions are understood by stakeholders. A need exists, however, to scale up the GEF Pacific IWRM approach to strengthen integration of land, water and coastal management to better accommodate issues associated with biodiversity conservation, to build on synergies between investments in IWRM and sustainable forestry practices, and to strengthen the conservation of coastal ~~blue forests~~ from the perspectives of hazard risk reduction, ICM application, and livelihoods. The sector approach currently in use represents the baseline while the GEF increment would reflect the commitment of PICs to integrate across those sectors nationally, and focus in introducing approaches for ICM to policy development and national budget planning.

Table 7 PICs IWRM Planning Status

IWRM Planning Elements in Place					
	IWRM Demo Project	Diagnostic Reviews	Strategic Policy statement	Implementation Plans	Coordination
Niue	Protection of Alofi town groundwater supply and nearshore reef fishery	Diagnostic Report National Outlook	National IWRM Policy Water Act 2012	IWRM Costed Action Plan Regulations Drafted	National Water Committee
Tuvalu	Integrated Sustainable Wastewater Management for Tuvalu	Diagnostic Report National Outlook	National WatSan Policy Water Act 2013	Tuvalu's Climate Change Adaptation Framework includes water	National Water Coordinating Committee
Cook Is	Integrated Freshwater and Coastal Management on Rarotonga	Diagnostic Report National Outlook	National IWRM Policy	National WatSan Strategy	National Water Committee
Samoa	Integrated Freshwater and Coastal Management of Apia Catchment	Diagnostic Report	Water Resources Policy Water Services Policy	Plan & Framework for Action, WS Investment plan	Water Sector Steering Committee (& working groups)
Tonga	Sustainable management of Vava'u's Groundwater Resource	Diagnostic Report National Outlook	Water Act Water Policy	Implementation Plan for Water Act	National Water Coordinating Committee
RMI	Integrated Water management Plan for Laura lens in Majuro	Diagnostic Report National Outlook	National Water Policy Framework	IWRM Investment Plan	National Water Coordinating Committee
FSM	Protecting Water Quality in Pohnpei and Chuuk State	Diagnostic Report National Outlook	Draft National Water Policy Framework	Draft IWRM Investment Plan in progress	National Water Coordinating Committee
Palau	Ngerikil watershed restoration for the improvement of water quality	Diagnostic Report National Outlook	National Water Policy	IWRM Investment Plan	National Water Coordinating Committee
Kiribati	Not a participant in GEF IWRM Demo Project	Diagnostic Report	National Water Resources & Sanitation Policies	WR & San Implementation Plan (uncosted)	National Watsan Coordinating Committee
Nauru	Better water management & reduced contamination of groundwater	Diagnostic Report National Outlook	National Water, Sanitation & Hygiene Policy	Watsan Implementation Plan	Water Technical Committee
Sol Is	Managing Honiara's water supply and reducing pollution	Diagnostic Report National Outlook	National IWRM Plan	IWRM Implementation Plan	National Intersectoral Water Coordinating Committee
Vanuatu	Sustainable management of Sarakata Watershed	Diagnostic Report National Outlook	National Water Strategy	NWS Implementation strategy NZAID Funded	National Water Resources Advisory Committee
Fiji	Integrated Flood Risk Management in the Nadi River Basin	Diagnostic Report	Draft National Watsan Policy, Rural Watsan Policy	Fiji has a strong Nadi Watershed coord framework	National Water committee (established, low activity)*

IWRM	Watershed Management
Demo	Water Resource Assessment & Protection
Project	Wastewater management & Sanitation
Theme	Water Use Efficiency & Water Safety

84. The current baseline scenario for the region is not only due to poor working practices, but is also a result of the fragility, size, vulnerability and limited human and financial resources available to PICs. PICs suffer from: (i) deterioration in freshwater resources; (ii) reduction in coastal and watershed ecosystem functions; (iii) increased land based source pollution; (iv) deterioration of human health; and (v) deterioration in economic stability. PICs have already identified the priority needs for the region as part of the 1997 GEF-supported Strategic Action Programme and the Pacific Regional Action Plan (RAP). Through participation in the GEF Pacific IWRM project, PICs have identified priority IWRM investment needs which are being incorporated into national IWRM Plans with supporting National Water and Sanitation policies. It has been recognized, however, that there is a need for IWRM plan implementation to occur within a broader integrated framework that includes the coast, reflecting climate variability and hazards management, coastal blue forests and livelihoods, and sustainable land management.

85. Without any incremental intervention and assistance, the baseline as described above will hinder the progression to more integrated management approaches in PICs and lead to continued natural resource degradation. The GEF increment will introduce this integrated approach to natural resources management which would otherwise continue with limited cross-sector coordination and communication within sectors. The project will build on nascent process and will aim to address thematic areas of concern that are critical to fostering island sustainability and resilience through: reforms in policy, institutions, and coordination; building capacity of local institutions to integrate land, water and coastal management; establishing evidence-based approaches to ICM planning; improved consolidation of information and data required to inform cross-sector R2R planning approaches. It is envisaged that this project will also focus much greater attention on harnessing support of traditional community leadership and governance structures to improve the relevance of investment in ICM from community to cabinetq
86. Linkages with the GEF SCCF, biodiversity and land degradation focal areas in the national STAR projects will facilitate dialogue and action planning through Inter-Ministry Committees on responses to emerging land and climate issues. Similarly it will facilitate coordinated exchanges of experience and results of the GEF portfolio of investments in a broader regional R2R programme for PICs. Linkages with co-financed activities on water resource and wastewater management, coastal systems and climate adaptation and disaster risk management will ensure more targeted capital investment in coastal infrastructure within an ICM framework. This project will assist in routine capture of information and reporting on incremental gains in physical, natural, and social capital in response to assessed climate and land threats. Best practices in capital investment for strengthening land and coastal resilience to climate variability and change will be shared regionally and globally among Caribbean and Indian Ocean PICS. Similarly this project will foster solidarity among the PICs, particularly with respect to the political will required to support more integrated approaches to R2R in natural resource management.
87. Globally there exists an urgent requirement to develop more coordinated and integrated approaches to the sustainable development of PICS consistent with many global political declarations. Global environmental benefits will accrue through this project via both the on-the-ground results and progress accelerated through the exchange of lessons learned and best practices in the development of integrated approaches to land, water and coastal management. By definition in the GEF IW Strategy, implementation of integrated measures on IWRM and ICM would provide global benefits in the IW focal area while the associated improvement in conservation of blue forests+coastal habitat will provide global benefits for the fisheries that use the waters and wetlands as nursery areas as well as trapping carbon. Significantly, this project will test the ability of PICs to mainstream ICM and IWRM approaches in national and local development planning, as part of national budget cycles, and as part of regional action plan development. Such approaches are necessary to ensure appropriate synergies among the work of various sector agencies, between national governments and communities, and the investments of development partners and donors in order to implement stress reduction measures at a scale required to build island sustainability and resilience. By building on the focus on integrated coastal area management in Agenda 21, WSSD, and Rio+20, this project provides a first opportunity for the Pacific region to test innovative and integrated water-related solutions involving both ICM and IWRM to sustain livelihoods, reduce climate related risks, secure access to water and sanitation, and safeguard ecosystem function.
88. Significantly, the project will build on commitments made during the 2005 Paris Declaration on Aid Effectiveness, the 2008 Accra Agenda for Action, recent Pacific Leaders meetings to accelerate progress on aid effectiveness by better demonstrating the results of development efforts and openly accounting for them. In recent years, the Pacific's multilateral and bilateral development partners and donors, including inter alia the Global Environment Facility, the European Commission, and the aid agencies of Australia, New Zealand, and the United States of America, have each developed their own policies with respect to the development of results-oriented programmes and projects. The unique challenges PICs governments face in meeting the myriad of reporting expectations to donors and the International Conventions to which they are party, creates a need for a simplified and harmonized results framework with indicator sets that can be reported annually by national inter-ministry committees and shared with PICs leaders.
89. This project will also reflect the results-based approach introduced by the GEF Pacific IWRM project to develop a regional framework of process, stress reduction and

environmental/socioeconomic indicators to monitor effectiveness of integrated land, water and coastal management in PICs. National sets of indicators will also be developed to monitor and evaluate results of GEF investments across its biodiversity, land degradation, climate change adaptation, sustainable forest management and international waters focal areas in island-based R2R. This approach would be a first for GEF of new, consolidated reporting across focal areas and should have globally significant benefits in guiding strengthened multi-focal area approaches in the Caribbean and Indian Ocean PICs. This R2R monitoring and evaluation initiative will enable the capture and global sharing of best practices in capital investment, including biophysical and financial performance assessments, for strengthened resilience to climate variability and change.

2 STRATEGY

2.1 PROJECT RATIONALE AND POLICY CONFORMITY

2.1.1 Strategic Action Programme for Pacific Island Countries

90. The Heads of States of 13⁴ Pacific PICs developed and in 1997 endorsed the GEF Strategic Action Programme for International Waters of Pacific Islands. This document clearly identified priority areas for action in the international waters focal area as improved management of ocean and coastal fisheries, integrated watershed and coastal management, and water supply protection. On the basis of the Pacific SAP, the GEF International Waters focal area has subsequently invested in a series of regional initiatives. The first was the UNDP implemented project entitled *Implementation of the Strategic Action Program for the International Waters of the Pacific Small Island Developing States*⁵ initiated in 2000. This project was comprised of two linked, yet independently operated, components: integrated coastal and watershed management (ICWM) which was executed by the Secretariat of the Pacific Regional Environment Programme (SPREP) over almost 7 years to 2006; and oceanic fisheries management (OFM) executed by the Pacific Islands Forum Fisheries Agency in partnership with the Secretariat of the Pacific Community from 2000-2004. The latter component brought considerable incremental support to the development of the *Convention on the Conservation and Management of Highly Migratory Fish Stocks of the Western and Pacific Ocean* which entered into force in 2004 and which also established the Commission in 2005. On the basis of this strengthened legal and political environment for the sustainable use of the Pacific's globally significant tuna resource, the GEF further supported a UNDP OFM implementation project which operated from 2005-2011⁶. The GEF Chief Executive Officer endorsed a further 4-year UNDP/FAO project on July 1, 2014 to support Pacific PICs in meeting their obligations to implement and effectively enforce global and sub-regional arrangements for the conservation and management of transboundary oceanic fisheries⁷.

2.1.2 Implementing Integrated Coastal and Watershed Management

91. In contrast, arrangements for GEF supported efforts in implementing the integrated coastal and watershed management aspects of the Pacific SAP have in part been influenced by emerging regional policy developments and the comparative expertise of the Pacific regional organisations. In light of the critical water resource and sanitation issues facing Pacific PICs, the period 2001-2005 saw the development of related regional policies and action plans under the Pacific Plan⁸. These included the: 2001 Wastewater Policy and Wastewater Framework for Action; the 2002 Pacific Regional Action Plan on Sustainable Water Management; and the 2005 Pacific Framework for Action on Drinking Water and Health⁹. Accordingly, GEF support in the years

⁴ With the exception of Palau among 14 PICs covered by the R2R program.

⁵ Hereafter referred to as the International Waters Programme or IWP. Details for the IWP project can be accessed online at <http://www.thegef.org/gef/project_detail?projID=530>

⁶ See <http://www.thegef.org/gef/project_detail?projID=2131>

⁷ See <http://www.thegef.org/gef/project_detail?projID=4746>

⁸ The Pacific Plan is the master strategy for regional integration and coordination in the Pacific.

⁹ In 2010, The SOPAC Governing Council call for revision of the regional strategy and action plan to address urgent issues pertaining to the sustainable management of water resources and delivery of water and sanitation services in Pacific PICs.

following the conclusion of the IWP project has been targeted at improved coordination and planning of water resource and wastewater management to balance overuse and conflicting uses of scarce freshwater resources through the GEF Pacific IWRM Project. The GEF Pacific IWRM Project was financed by the GEF, implemented by UNDP and the United Nations Environment Programme (UNEP), and executed regionally by the Applied Geoscience and Technology Division (SOPAC) of the Secretariat of the Pacific Community (SPC)¹⁰ in partnership with 14 Pacific Island Countries¹¹. The inception workshop for the GEF Pacific IWRM Project was convened in September 2009, all national level activities of the project concluded on 31 December 2013, and the project was officially closed on 30 September 2014.

2.1.3 A Stepwise Catalytic Approach

92. The abovementioned progression from the initial preparation of the Pacific SAP, then the IWP project, to the Pacific IWRM project has involved the staged refinement of the focus of the initiatives. The SAP development acted as a foundational activity to stimulate multi-country cooperation on the identification of common water and coastal management issues, and supported the Pacific PICS through the process of identifying priorities for intervention to address key concerns. The IWP project focused on development of foundational capacity and enabling environments to support Pacific PICS in developing integrated approaches to water and coastal management. An emphasis of that initiative included the introduction of social and diagnostic tools to help participating countries and communities better understand the root causes of environmental degradation, and their social and economic consequences. This contributed significantly to enhanced public understanding of environmental issues which supported regional efforts to strengthen community participation in the co-management of coastal resources and the environment.
93. Despite an almost 3-year hiatus between the two projects, the GEF Pacific IWRM Project built on achievements of the IWP project via a focus on national IWRM demonstration projects aimed at providing an opportunity for participating countries to implement, and experiment with, new management models and methods. The national demonstration projects built local experience and capacity in project implementation, cross-sectoral coordination, and the implementation of water resource and socio-economic assessments and studies, which highlighted the need to contribute to more sustainable management of water resources. From this, the knowledge, experiences and best practices generated through project execution were captured, shared, and used to guide the development of national water and sanitation policies and IWRM plans. The practical on-the-ground solutions to water and sanitation issues demonstrated by the national IWRM projects acted to stimulate support at both community and national government levels for policy reform and the mainstreaming of an IWRM approach as part of national development planning.
94. This project entitled *Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management to Preserve Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods in Pacific Island Countries* will build on the abovementioned stepwise approach to catalyzing transformational change. It will also support participating countries in the replication and scaling up of IWRM approaches within a broader *Ridge to Reef* and *Community to Cabinet* framework designed to guide the integration of water, land, forest and coastal management required to fashion sustainable futures for island communities. The project also aims to address the recent high-level recognition and calls for results-based approaches to the management of development assistance programmes and projects, and will provide support in areas of coordination, capacity building, technical assistance, and monitoring and evaluation for the operation of the UNDP/UNEP/FAO program entitled *Pacific Islands Ridge-to-Reef National Priorities . Integrated Water, Land, Forest and Coastal Management to Preserve Biodiversity, Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods*.

This process is ongoing with planned completion to align with revision of the Pacific Plan and the International PICS conference in 2014.

¹⁰ Prior to 2011, SOPAC was known as the Pacific Islands Applied Geoscience Commission (SOPAC). SOPAC the -Commission merged with the Secretariat of the Pacific Community (SPC) on January 1, 2011 and currently operates as the Applied Geoscience and Technology Division of SPC.

¹¹ Cook Islands, Federated States of Micronesia, Fiji Islands, Kiribati, Nauru, Niue, Palau, Papua New Guinea, Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu

95. Accordingly, the project is consistent with the GEF-5 International Waters (IW) strategy which is focused on catalyzing the scaling up of collective action for freshwater basins, aquifers, and marine systems (including PICS) in support of multiple MDGs as well as protecting the capacity of blue forests to sequester carbon. Specifically the project is aligned with GEF 5 IW Objective 1: Catalyze multi-state cooperation to balance conflicting water uses in transboundary surface and groundwater basins (including PICS) while considering climatic variability and change; and IW Objective 3: Support foundational capacity building and portfolio learning for joint, ecosystem-based management of trans-boundary water systems. Of specific relevance is Outcome 1.3: Innovative solutions implemented for reduced pollution, improved water use efficiency, sustainable fisheries with rights-based management, IWRM, water supply protection in PICS, and aquifer and catchment protection.

2.2 COUNTRY OWNERSHIP: COUNTRY ELIGIBILITY AND COUNTRY DRIVENESS

96. All participating countries are eligible for GEF funding as a result of being Parties to at least one, if not all, of the following five GEF supported Conventions and their related Protocols: UN CBD; UN FCCC; UN POPs; UN CCD; Montreal Protocol. Additionally, the PICs are eligible for GEF support under the GEF Instrument and the GEF5 IW strategy, and with over 6,000 islands and islets, a population of more than nine million and exclusive economic zones of over 5,000,000 km², the PICs clearly have priority eligibility under GEF IW.
97. At the World Summit on Sustainable Development (WSSD) held in Johannesburg in 2002, the international community took an important step towards more sustainable patterns of water management by including, in the WSSD Plan of Implementation (Johannesburg Plan of Implementation), a call for all countries to "develop integrated water resource management and water efficiency plans by 2005, with support to developing countries". Meeting more recently in Rio de Janeiro, Brazil at the Rio+20 United Nations Conference on Sustainable Development, Heads of States and Governments reaffirmed their commitment to fully implement the Johannesburg Plan of Implementation and committed to inter alia significantly improve the implementation of integrated water resource management at all levels as appropriate.
98. Giving weight to the commitments made during the Rio+20 meeting is the 28th July 2010 United Nations General Assembly resolution declaring the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights and which called on States and international organizations to provide financial resources, capacity-building and technology transfer, through international assistance and cooperation, in particular to developing countries, in order to scale up efforts to provide safe, clean, accessible and affordable drinking water and sanitation for all. In September that year, the United Nations Human Rights Council further affirmed by a consensus resolution that water and sanitation are human rights. The HRC called upon States to develop appropriate tools and mechanisms, which may encompass legislation, comprehensive plans and strategies for the sector, including financial ones, to achieve progressively the full realization of human rights obligations related to access to safe drinking water and sanitation. The PICs have recently made significant progress in addressing challenge via the development and formal adoption of national water and sanitation policies and IWRM plans (see Table 7).
99. This project specifically seeks to coordinate nationally-based multi-focal area investments whilst also preparing PICs for linking and scaling up IWRM to ICM. GEF has recognized that there is a need for reform and capacity building focusing on a more cross-cutting approach to water, land and coastal resource management that captures the complementarities among GEF focal areas. Such approaches are necessary to ensure appropriate synergies among the work of the various sector agencies, between governments and communities, and the investments of development partners and donors in order to implement stress reduction measures at the scale required to build island sustainability and resilience.
100. By building on the focus on integrated coastal area management in Agenda 21, WSSD, and Rio+20, this project provides a first opportunity for Pacific Island countries to test innovative and integrated water-related solutions involving both ICM and IWRM to sustain livelihoods, reduce climate related risks, secure access to water and sanitation, and safeguard ecosystem function. As the project builds on the outcomes of the GEF Pacific IWRM project, significantly high levels

of country awareness, ownership and drivenness of project goals and objectives were generated during conceptualization and preparation of this project.

2.3 DESIGN PRINCIPLES AND STRATEGIC CONSIDERATIONS

101. This project builds on the abovementioned achievements of GEF Pacific IWRM project in the areas of national and regional coordination, information and data management, engagement of stakeholders and communities in national policy and planning, capacity building, results monitoring, and national and regional IWRM policy reform. Key project components include: national demonstrations to support and inform integrated land, water and coastal planning and the scaling-up of IWRM for island resilience and sustainability; island-based investments in human capital and knowledge consolidation to prepare local institutions for ICM; improved integrated governance for local pilot institutions and national policy development for scaling-up IWRM to integrate land, water and coastal management in an ICM framework; establishment of regional and national R2R indicators, monitoring and evaluation frameworks, and knowledge management to support national inter-ministry communities and results tracking; and strengthened national and regional coordination of investment in R2R ICM. The guiding principles for the application of the Ridge to Reef approach in Pacific PICS outlined below were identified and agreed via regional and national consultative processes during the project's conceptualization and preparation phases.

Guiding Principles of the Ridge to Reef Approach in Pacific PICS

102. **(i) Acknowledging Inter-Connections of Land, Water and Coastal Systems:** Effective water resource and wastewater management remains a key element of efforts to fashion sustainable futures for Pacific PICS. Generally, limited surface and groundwater resources and a reliance on rain fed agriculture results in island livelihoods and economies being highly dependent on rainfall. There are, however, vast differences in the water issues faced across the region, ranging from the devastating floods impacting on the Pacific's tourism hub of Nadi Town in Fiji, to the lengthy droughts driven by the El Niño/La Niña Southern Oscillation patterns which regularly result in atoll island countries such as Tuvalu facing extreme water shortages and related human health consequences. In addition to the reliance of Pacific PICs on the effective use and management of rain water, coastal and marine habitats¹² and resources are also critically important to island communities. Coastal lagoons and island blue forests support coastal fisheries production, are economically important tourism attractions, provide protection against storms and tsunami waves, and are often of national and global significance from the perspective of biodiversity conservation. Pacific PICS, however, face considerable challenges in guiding the sustainable use of these resources due to the close linkages between and among land, water and coastal systems on small islands. The reclamation of mangroves for resort or urban development, for example, often not only has consequences in terms of reduced coastal fisheries production, but also often reduces the resilience of island communities to the effects of disasters such as floods and tsunami waves.

103. **(ii) Promotion of Ridge to Reef and Community to Cabinet Approaches:** Given the close inter-connections between land, water and coastal systems in PICS, the integration of freshwater watershed management with coastal area management is considered essential to foster effective cross-sectoral coordination in the planning and management of land, water and coastal uses¹³. In Pacific PICS, such integrated approaches to freshwater and coastal area management have been termed ridge to reef to emphasise the inter-connections between the natural and social systems from the mountain edges of volcanic islands, through coastal watersheds and habitats, and across coastal lagoons to the fringing reef environments associated with most Pacific PICS. Inherent in the approach is the philosophy of cross-sectoral coordination in the planning and management of freshwater use, sanitation, wastewater treatment and pollution control, sustainable land use and forestry practices, balancing coastal livelihoods and biodiversity

¹² Coastal coral reefs, seagrass and mangrove forests are hereafter referred to collectively as blue forests

¹³ GEF, 1997. Operational Programs, page 9-6 para 9.19.

conservation, hazard risk reduction, and climate variability and change¹⁴. Similarly, the abovementioned need for the integration of communities, stakeholders, and national governments within such a cross-sectoral planning framework is described by Pacific PICS as a 'community to cabinet'¹⁵ approach. The emphasis of which has been on the effective engagement and participation of stakeholders in the planning, implementation, and monitoring and evaluation of initiatives aimed at fostering integrated approaches to natural resource and environmental management in Pacific PICS.

104. **(iii) Catalysing Community Action via Locally Driven Solutions:** Each of the abovementioned policies contains explicit recognition of the need for partnerships, alignment of donor support with national priorities, and country ownership in the development of results-oriented programmes and projects. The Pacific Islands Forum Secretariat recently emphasised these needs noting the well-known challenges Pacific Island communities face in fashioning sustainable futures (PIFS, 2012). These include geographical isolation, high levels of dependence on natural resources for nutritional security and livelihoods, and a highly variable environment characterised by numerous coastal hazards (Duda, 2005; SOPAC, 2009). The above combined with considerable variation in island geomorphology, socio-economics and politics make locally-driven solutions to key issues influencing island sustainability and resilience a necessity. Of particular note are the complex land and marine tenure systems and institutional relationships between national and community-based governance structures. While the Pacific Small Island Developing States (PICS) have largely adopted western-style constitutions and legal systems, such community-based governance and leadership arrangements remain highly influential at all levels. Accordingly, the participation of civil society organisations and community leaders in development planning is essential to increase the local relevance of management actions and their results in PICS.
105. **(iv) Doing is Seeing the Need:** The GEF Pacific IWRM project acted as a valuable entry point for strengthening integrated approaches to natural resource management in Pacific PICS. Existing national coordination mechanisms involving operation of inter-linked national APEX bodies for IWRM and local coordinating committees for IWRM demonstration projects have been effective in guiding stress reduction in the water and sanitation sector and driving reform of national IWRM policy and planning. That project also acted as a valuable entry point for capacity development, helping to foster application of inter-disciplinary skills and local knowledge and integrating this into monitoring and evaluation to ensure that causes of environmental stresses and the results of interventions are understood by stakeholders. A need exists, however, to scale up the GEF Pacific IWRM approach to strengthen the integration of land, water and coastal management to better accommodate issues associated with biodiversity conservation, to build on synergies between investments in IWRM and sustainable forestry practices, and to strengthen the sustainable management of coastal blue forests from the perspectives of hazard risk reduction, ICM application, and livelihoods. The Pacific Ridge to Reef programme embraces the 'doing is seeing the need' philosophy adopted by the IWRM project via the promotion of pilot activities aimed at generating local and national support for integrated Ridge to Reef and Community to Cabinet approaches and to establish linkages, synergies and mechanisms for learning exchange, particularly between and among community leaders and project stakeholders. Pilot activities will also develop local experience in linking IWRM to coastal area management and will stimulate cross-sectoral participation in the planning of coordinated investments in land, forest, water and coastal management in the participating countries. The related and linked national STAR projects will deliver the targets of the overall programme relating to strategic objectives of the GEF biodiversity, climate change mitigation and adaptation, land degradation, and sustainable forestry management focal areas.
106. **(v) Investing in Island-based Human Capital:** Support for country capacity development is an integral part of the GEF, with a focus on strengthening the capacities of countries to manage their priority environmental issues and contribute to global environmental benefits. It has also been identified by Pacific leaders as a priority concern and was reflected in the 1997 Strategic Action

¹⁴ Such a philosophy is equivalent to the 'horizontal integration' of separate economic sectors and associated units of government used in the coastal area management literature (e.g. Permetta and Elder, 1993; Sorenson, 1997). Such 'Ridge to Reef' approaches are also used by small atoll nations to promote the links between land uses, groundwater hydrogeology, and the quality of coastal lagoons and blue forests (e.g. the Republic of the Marshall Islands (RMIEPA, 2011).

¹⁵ The term 'Cabinet' is used here to mean a group of national government Ministers responsible for deciding a government's policy and strategic direction.

Programme. Over recent years the GEF has provided nine of the Ridge to Reef participating countries with support to conduct a National Capacity Self-Assessment (NCSA) of national capacity needs and to develop capacity action plans. These assessments and plans identified the need for capacity development to: improve the harmonization sectoral legislation and governance frameworks to support integrated management approaches; make timely and cost effective use of financial resources available to the environment and natural resource sectors; enhance research and monitoring capabilities, including strengthened national data and information systems; strengthen human resource capabilities and retain skilled practitioners; improve institutional coordination; and to enhance awareness of priority threats to national significantly coastal areas, particularly from the perspective of island vulnerabilities associated with disasters and climate extremes. The Ridge to Reef approach in Pacific PICS will address these needs via a regionally coordinated programme of island-based investments in human capital.

107. **(vi) Gender Mainstreaming in R2R:** Assessing the different implications for women, men and vulnerable social groups of planned policy and project objectives and action is central to mainstreaming gender. Valuing the diversity among these groups involves the process of integrating their different needs into any development planning and decision-making processes. It is an attempt to take gender equality and social inclusion issues into the mainstream of the project objectives and activities. The integration of Water, Land, Coast and Fisheries management impacting as it does on livelihoods, food and water security must ensure that the measures taken, ideas and decision-making reached are arrived at through the participation of men and women, and to the equitable distribution of improved infrastructures and management structures.
108. Increasing gender and diversity mainstreaming means increasing attention to gender perspectives and the goal of gender equality and strives to enhance the inclusion of women at all levels. In this regard lessons learned from the GEF Pacific IWRM project will ensure best practice in gender mainstreaming:
 - Advance gender equality and social inclusion (gender awareness)
 - Balance women and men's participation in decision making
 - Respect the different roles and responsibilities of men and women and the different values they may hold
 - Strive for inclusiveness and cooperation/partnerships
 - Document how gender and diversity concerns were made central
 - Provide for appropriate implementing of arrangements at all levels (planning, management, monitoring and evaluation)
109. **(vii) Supporting National and Regional Planning:** A small number of regional strategies agreed to under the Pacific Plan; the Wastewater Policy and Wastewater Framework for Action, The Pacific Regional Action Plan on Sustainable Water Management; the Pacific Framework for Action on Drinking Water and Health; the Pacific Disaster Risk Reduction and Disaster Management Framework for Action and the Pacific Islands Framework for Action on Climate Change. With increasing focus on the need for integration all these strategies are under review. This revision is ongoing and timely coinciding with other significant changes in regional strategies. The recent decision by Pacific Forum Leaders to graduate the Pacific Plan to a Framework for Pacific Regionalism with the primary objective of sustainable development that combines economic, social, and cultural development in ways that improve livelihoods and well-being and the use of the environment sustainably will drive sectoral integration strategies. The regional agreement to integrate Disaster Risk Management and Climate Change Adaptation and Mitigation into a Strategy for Disaster and Climate Resilient Development in the Pacific exemplifies this. The integration water, land and coastal management through the proposed Ridge to Reef framework at National and regional levels is therefore in alignment with emerging National and Regional Integration Strategies.
110. **(viii) Application of Marine Spatial Planning in Ridge to Reef Planning and Management:** In the outcome document of Rio+20, entitled "The Future We Want", world leaders reaffirmed the importance of area-based conservation measures, including marine protected areas, as a tool for the conservation of biological diversity and the sustainable use of its components. They noted

Aichi Biodiversity Target 11, which states that by 2020, 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are to be conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures. It has been identified that much of the success in this effort from a biodiversity perspective will depend on the degree to which these protected areas are situated within a broader, multi-sectoral planning context. The GEF Council has identified that marine spatial planning represents an important step in improving collaboration amongst multiple users of the marine environment as a means to conserve marine and coastal biodiversity while at the same time addressing human needs, including livelihood considerations across coasts around estuaries and coral reefs, in near shore lagoon environments and blue forests, and on open oceans. In addressing such issues in PICs, the Ridge to Reef approach will apply a marine spatial planning approach for reconciling sectoral interests while balancing biodiversity considerations. Specifically the approach will draw on recommendations and guidance on marine spatial planning promoted by the Secretariat of the Convention on Biological Diversity and the GEF's Scientific and Technical Advisory Panel.

111. **(ix) Integrating Climate Variability and Change¹⁶ Considerations in National Planning:** For thousands of years, Pacific Island communities have been living in and adapting to dynamic and often difficult climatic environments. Island environments are inherently vulnerable to the extremes of climate variability, and this vulnerability compelled Pacific Island communities over time to build a level of resilience to extreme weather events. However today, population growth and social changes have created a situation where many communities are far less prepared for the floods, extended droughts and storms that remain an ongoing feature of the region. In this regard, the uncertainty and extremes of climate variability compound and exacerbate the social and economic challenges faced by Pacific Island communities. Three large-scale features have a particular influence on the climate variability of Pacific Islands Countries: the South Pacific Convergence Zone, the Inter-tropical Convergence Zone and the West Pacific Monsoon. These features are caused by winds converging over warm water, and drive the seasonal variations in rainfall experienced by Pacific Island Countries, including wet and dry seasons. Together, they influence rainfall, winds, tropical cyclones, ocean currents and other aspects of the weather and climate. While these features drive the wet and dry seasons experienced annually in most Pacific Island Countries, the single greatest factor affecting climate variability from year to year is the El Niño/La Niña Southern Oscillation, or ENSO. This cycle of warming and cooling of sea surface temperatures has a profound effect on the hydrological cycle of Pacific Island Countries, driving periods of drought and elevated rainfall across the Pacific region. The effects of the ENSO cycle are not restricted to drought. It is also a driver of periods of elevated rainfall and rainfall intensity, and plays a role in both suppressing and stimulating the propagation and severity of tropical cyclones, all of which have significant impacts on the people and economies of the Pacific. However, while our understanding of ENSO and its impact on Pacific Island Countries has improved considerably over the past years, this improvement has not translated into a corresponding increase in community resilience. Recognising this, the Ridge to Reef approach in Pacific Island Countries has identified the need to essential need to embed consideration of climate variability and change issues in efforts to integrate land, water, forest and coastal management.
112. **(x) Supporting Results Oriented Planning and Action:** The need for results-based approaches to the management of development assistance programmes and projects has received recent high-level recognition. In adopting the Paris Declaration on Aid Effectiveness in 2005, national government Ministers responsible for development from both developed and developing countries joined with Heads of multilateral and bilateral development institutions in committing to *work together in a participatory approach to strengthen country capacities and demand for results-based management*¹⁷. This commitment was reaffirmed in the 2008 Accra Agenda for Action which called for accelerated progress on aid effectiveness by better demonstrating the results of development efforts and openly accounting for them¹⁸. The Pacific

¹⁶ In recognition of the urgent need to address climate change adaptation into this regional project, a separate submission to SCCF is currently being formulated. If approved the SCCF activities will be blended with the activities in this R2R regional project.

¹⁷ OCED, 2005. Paris Declaration on Aid Effectiveness, page 8, para 46

¹⁸ OCED, 2008. Accra Agenda for Action, page 16, para 10

Islands region and its development partners have responded accordingly. For example, in 2012 the Pacific Leaders considered a review of the effectiveness of development efforts in the Pacific (see PIFS, 2012) and called for strengthened emphasis on results in planning and financing development¹⁹. Similarly, the Pacific's multilateral and bilateral development partners and donors, including *inter alia* the Global Environment Facility (GEF, 2007), the European Commission (EuropeAID, 2012), and the development aid agencies of Australia (AusAID, 2012), New Zealand (NZAID, 2012) and the United States of America (USAID, 2012) are guided by their own results-based management policies.

113. **(xi) Effectively Communicating the Benefits of Integration and Lessons Learned:** Global experience in integrated natural resource and environmental management has shown that efforts to integrate water, land and coastal management are initially vulnerable fledglings when introduced at national and sub-national units of government, and as such, at the mercy of the bureaucratic pecking order. In order for efforts to survive and grow, national-level leaders of such processes need to be able to effectively communicate the benefits of such integrated approaches across a broad range of government agencies and local institutions in order to convince government and community leaders that it is in their self-interest to voluntarily coordinate across areas such as: (1) policy and development planning; (2) investment in efforts to reduce stress on natural resources and improve environmental state; and (3) strengthening community engagement in management. Effective communications and use of the media were identified by the terminal evaluation of the GEF Pacific IWRM project as having been critical in the success of that project, specifically through awareness raising, stimulating support for necessary policy and legal reforms, and for global outreach with donors and sister initiatives in the Caribbean and the Indian and Atlantic Ocean PICS. It was also essential in ensuring that best practices generated through national IWRM demonstration and pilot projects and national policy development process are captured, shared and effectively communicated to guide the longer-term sustainability and scaling-up of investments.
114. **(xii) Guiding Coordinated Investment in the Sustainable Development of Island Communities:** The practical application of Ridge to Reef principles not only presents PICs with a unique opportunity to test, refine, replicate and upscale an emerging and highly appropriate environmental and economic sustainability paradigm, but also, through longer term mainstreaming of ICM/IWRM/SLM/SFM concepts, practices and policies, move towards a level of sustainability that could prove to be a model for up-scaling at the level of large continental river basins and linked coastal and marine areas. The Ridge to Reef approach provides a unique opportunity to build capacity of local professionals (including new graduates and through continuing education), new stakeholder groups, and community leaders (mayors/chiefs) to build sufficient human capital on the islands for leading adoption of these integrated and participatory mechanisms to complement traditional measures and taboos. At regional and global levels, the Ridge to Reef approach provides opportunity for: (a) the Pacific Island Countries to operationalize a regional model for multi-country cooperation in addressing shared or common environmental problems towards biodiversity conservation, sustainable integrated management of land, forest, water and coastal resources and climate resilience to protect livelihoods; (b) demonstrating island-based approaches that are most appropriate to local settings and community needs; (c) influencing and leveraging scarce national resources and donor support which are normally sector in approach towards integrated approaches for natural resource and environmental management; and (d) facilitating the harvest and dissemination of best practices among the PICs and in other SIDS globally.
115. **(xiii) Promoting Public-Private Partnerships:** Policy makers of the Pacific Island Countries increasingly recognize the importance of the private sector in the sustainable development of island communities, particularly the growing need for commercially viable activities that simultaneously deliver local and global development and environmental benefits. While it is acknowledged that the priorities of the public and private sectors are often quite different, the Ridge to Reef approach promotes the development of public-private partnerships aimed at leveraging their respective interests for innovation and impact. This is considered central to the financial sustainability of the programmatic approach of this initiative, particularly from the perspective of coordinated investment in national IWRM Plan implementation and Strategic Action Frameworks for integrated land, water, and coastal management to be developed through

¹⁹ PIFS, 2012b. Forum Communiqué, page 2, para 10

this initiative. A consultative approach to identifying opportunities for private sector investment will be adopted, including national and regional investment forums to secure to facilitate cooperation with the private sector and donors on investment in R2R implementation. Additionally a network of pilot activities focused on strengthened private sector involvement in marine spatial planning, eco-tourism, protected area management, and sanitation and lagoon health will be established and results documented.

2.4 PROJECT OBJECTIVE, OUTCOMES AND OUTPUTS/ACTIVITIES

116. **OBJECTIVE:** To test the mainstreaming of ridge-to-reef (R2R), climate resilient approaches to integrated land, water, forest and coastal management in the PICs through strategic planning, capacity building and piloted local actions to sustain livelihoods and preserve ecosystem services.
117. Following the stepwise approach to catalyzing transformational change for the sustainable development of PICs described in sub-section 2.1.3, and the design principles and strategic considerations outlined in section 2.3 above, the project is comprised of five components. The first of which involves national demonstrations to support R2R ICM/IWRM approaches for island resilience and sustainability. The second and third components involve island-based investments in human capital and knowledge, as well as the mainstreaming of R2R ICM/IWRM approaches into national development planning. The fourth component involves development of regional and national Ridge to Reef indicators for reporting, monitoring, and adaptive management and knowledge management. The fifth component involves overarching coordination of the ridge to reef programme at both regional and national levels.
118. The Project is squarely aimed at building an enabling environment at National level for linking IWRM with ICM into a new integrated R2R approach. Indeed the basis of the GEF Programmatic Approach is to gain synergies across GEF Focal Areas and Implementing Agencies. In an area as diverse and vast as the PICs coordination and integration are key success factors. Leveraging National STAR project outcomes, building multi institutional coordination across multifocal areas and adoption of national ICM frameworks needs the resources of the proposed project. During the PPG consultations it became evident that whilst there was strong support for the role of the proposed project that the Programme Coordination at both national and regional level would require significant resources. GEF Council recognized these in endorsing the Programmatic Approach and made additional funds available for coordination costs. Unfortunately these are no longer available and the Project has sought a modest increase in its funding, in line with GEF allowances, to adequately resource this need. At a national level \$250,000 has been added to Component 1 budget and at the regional level \$176,582 has been added to Component 5 budget project management cost have also been increased to the allowable 5% of project budget an increase of \$64,725 resulting a total budget increase of \$491,307. The major outcomes, outputs and activities described below are based on outcomes of regional and national level consultative processes.

COMPONENT 1. NATIONAL DEMONSTRATIONS TO SUPPORT R2R ICM/IWRM APPROACHES FOR ISLAND RESILIENCE AND SUSTAINABILITY

119. This component will implement 14 national pilot projects to catalyze local community action, provide best practice examples, and build institutional linkages for integrated land, water, forest and coastal management. Planning methodologies for the selection of priority sites for the scaling-up integrated land, water and coastal management within Pacific PICS will also be developed and demonstrated as a national planning tool. It will also contribute to strengthened institutional relationships between national and community governance structures, and community leaders and local government officials will be networked via operation of a community-leader forum. Component outcomes and associated outputs and activities are detailed below.

OUTCOME 1.1 SUCCESSFUL PILOT PROJECTS TESTING INNOVATIVE SOLUTIONS INVOLVING LINKING ICM, IWRM AND CLIMATE CHANGE ADAPTATION [LINKED TO NATIONAL STAR PROJECTS VIA LARGER PACIFIC R2R NETWORK]

120. The regional network of national IWRM demonstration projects established and operated as part of the GEF Pacific IWRM Project from 2010-2013: strengthened local and national coordination for IWRM in the water and sanitation sector; enabled the achievement of significant environmental and water resource stress reduction benefits, particularly in vulnerable atoll environments; enhanced catchment management practices for strengthened island resilience to climate variability and disasters; and was effective in engaging and securing participation of local and national stakeholders in the planning, implementation, and monitoring and evaluation of on-the-ground demonstration activities via the application a Community to Cabinet approach to project coordination and management. The latter generated the support required within the strong community/traditional governance structures of Pacific Island communities to ensure buy-in from landowners and to effectively influence middle-level management and policy and planning decisions at the level of national government.
121. Combined, the abovementioned outcomes provided the impetus for national reform to mainstream IWRM approaches, resulting in transformational change of national-level enabling environments for water resource and wastewater management via the broad-scale adoption of national water and sanitation policies and IWRM Plans based on the best practices generated through demonstration activities. The operation of the national IWRM demonstration projects also resulted in the development of considerable local experience in the management of GEF projects, which has played a catalytic role in the establishment of a cadre of island-based project managers skilled in areas including *inter alia*: financial management; project planning, monitoring and reporting; results-based project management and reporting; identifying lessons learned and communicating best practices; the planning of replication and scaling-up strategies; and communications, including effective use of the media.
122. The experience and local capacity generated as a result of the GEF Pacific IWRM demonstration projects is recognized both nationally and regionally as an appropriate entry point for the testing of innovative approaches and measures to integrate land, forest, water and coastal management, including climate change adaptation (CCA) via the establishment and operation of national pilot projects at priority locations in the 14 countries. In addition to the role of the pilot projects in generating local and national support for integrated R2R approaches, they will also be used to establish linkages, synergies and mechanisms for learning exchange, particularly between and among community leaders and project stakeholders of the national GEF System for Transparent Allocation of Resources (STAR) projects planned under the broader Ridge to Reef programme. It is also aimed that the pilot activities will develop local experience in linking IWRM to coastal area management and will stimulate cross-sectoral participation in the planning of coordinated investments in land, forest, water and coastal management in the participating countries.
123. Accordingly, the following three design principles were applied in conceptualizing the national pilot activities: (1) establish and strengthen linkages between IWRM and national STAR projects under the R2R framework; (2) incentivize and foster cross-sectoral and community participation in broader national strategic action planning and institutional strengthening activities planned under project component 3; and (3) demonstrate best practice measures and approaches to guide the planning of replication and scaling-up. Details for the national pilot projects are included as Annex 2 of this project document. Planned pilot activities planned and the anticipated water resource and environmental stress reduction benefits of these pilots are summarized in Tables 8 and 9 below.

Table 8 Summary of key R2R pilot activities by country

Country/Lead Agency	Key R2R IW Pilot Activities
Cook Islands Ministry of Environment Services and Ministry of Infrastructure and Planning	<ul style="list-style-type: none"> Local capacity building for sustainable human and animal waste management to enable best practice in integrated land, coastal lagoon, and public health protection Establishing public-private partnerships for tourism sector investment in Integrated Coastal Management at Muri Lagoon Increasing the uptake of effective environmental stress reduction measures and integrated coastal management in the Muri area
Federated States of Micronesia Office of Environment and Emergency Management	<ul style="list-style-type: none"> Demonstration of innovative approaches to Integrated Ridge to Reef Catchment Management on Kosrae Island Development and implementation of a Kosrae State Freshwater Resources Management Plan

Country/Lead Agency	Key R2R IW Pilot Activities
and Kosrae Island Resource Management Authority	<ul style="list-style-type: none"> Capacity building for officials of Kosrae State government and community members for Integrated Ridge to Reef Catchment Management
Fiji Islands Land and Water Resource Management Division of the Ministry of Agriculture and the Nadi Basin Catchment Committee	<ul style="list-style-type: none"> Sustaining local coordination mechanisms (NBCC) and management measures and broadening their scope to support an R2R approach in the Nadi Basin Strengthening the recognition of blue forests as a hazard risk reduction asset in the Nadi coastal zone Supporting implementation of the Integrated Flood Management Plan for the Nadi Basin via strategic partnerships and awareness raising
Kiribati Environment and Conservation Division, Ministry of Environment, Lands and Agricultural Development	<ul style="list-style-type: none"> Local capacity for sustainable on-site sanitation management stimulated through effective community engagement and training Demonstration of innovative approaches to integrated sanitation and lagoon resource management on South Tarawa, Kiribati Information management and community awareness building in support of national policy and planning initiatives for Integrated Coastal Management
Nauru Ministry of Commerce, Industries and Resources	<ul style="list-style-type: none"> Scaling-up successful waste management approaches demonstrated through the IWRM project to safeguard groundwater and lagoon water quality Identification of critical coastal fisheries habitats to enhance the integration of livelihoods considerations in coastal area planning on Nauru Incorporating ICM strategies into national coastal infrastructure planning and regulations
Niue Department of Environment	<ul style="list-style-type: none"> Building island resilience via community-based actions to strengthen village leader engagement in water resource and environmental management on Niue Coastal and groundwater protection enhanced via targeted reductions of land-based contaminants Information management and community awareness building in support of national policy and planning initiatives for Integrated Coastal Management
Palau Office of Environmental Response and Coordination	<ul style="list-style-type: none"> Strengthening national and local coordination for the implementation and national replication of the Ngerikil Watershed Management Plan Capacity building for participatory monitoring and evaluation of Ngerikil Watershed Management Plan implementation Establishing public-private partnerships for tourism sector investment in the application of Integrated Coastal Management and Marine Spatial Planning principles in the identification and management of coastal and marine protected areas on Babeldoab
Papua New Guinea Department of Environment and Conservation	<ul style="list-style-type: none"> Improving community access to and understanding of technical information on climate and hazard vulnerability Enhancing participative community assessment of climate and hazard vulnerability & adaptation capacity Strengthening community livelihoods and resilience through sustainable R2R coastal area us in the Morobe Province
Republic of the Marshall Islands Environmental Protection Authority	<ul style="list-style-type: none"> Scaling-up community adoption of appropriate on-site waste management systems to improve environmental and public health at Laura Village Strengthening the knowledge base for evidence-based ICM planning for integrated land, water, and lagoon resource/fisheries management at Laura Integrated Coastal Management planning, including the application of Marine Spatial Planning principles, for the promotion of sustainable livelihoods in the Laura area
Samoa Ministry of Natural Resources and Environment	<ul style="list-style-type: none"> Application of Integrated Coastal Management approaches in scaling-up catchment management in the Apia watershed for strengthened coastal hazards management Increasing capacity for effective environmental stress reduction practices and sustainable watershed management in Apia Development of a monitoring and evaluation system to track the effectiveness of National Environment Sector Plan implementation
Solomon Islands Ministry of Environment, Conservation and Meteorology and Ministry of Mines, Energy, and Rural Electrification	<ul style="list-style-type: none"> Establishment of a programme to monitor pollution and nutrient loads entering Honiara's coastal waters Identification of contaminant sources and conduct of consultative process to identify priorities for land-based pollution management within an ICM framework in Honiara Institutional and civil society action for land-based pollution management catalyzed through awareness and capacity building

Country/Lead Agency	Key R2R IW Pilot Activities
Tonga Ministry of Lands, Survey, Natural Resources and Environment	<ul style="list-style-type: none"> Monitoring the effectiveness of stress reduction measures and management models instituted by the IWRM/IWCM initiative at Vava'u to inform scaling up and donor investment in ICM approaches Scaling-up and replication of sustainable wastewater management technologies to safeguard Vava'u's groundwater resources Application of best practices in marine spatial planning to develop integrated land, water and coastal management plans at 3 priority locations in Vava'u, Ha'apai and Tongatapu
Tuvalu Department of Environment - Ministry of Natural Resources, Energy and Environment	<ul style="list-style-type: none"> Demonstration of innovative approaches to pig waste management on Funafuti Atoll, Tuvalu Development and operation of a targeted science programme to: improve the operation of on-site waste management systems; and, to identify causal links between land-based contaminants and the degradation of lagoon health National and community capacity building and awareness activities in support of the enhance uptake of sustainable human and pig waste management systems on Funafuti and outer atolls and islets
Vanuatu Department of Environment, Ministry for Climate Change Adaptation, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management	<ul style="list-style-type: none"> Strengthening national and local coordination in support of the development and implementation of the Tagabe Catchment R2R Management Plan Strengthening the capacity for participatory monitoring and evaluation of the Tagabe Catchment R2R Management Plan Establishing partnerships for sustainable coastal area development via the application of Integrated Coastal Management and Marine Spatial Planning approaches

NB: Pilot locations highlighted in bold. Detailed results frameworks for further elaboration during the project inception phase are included in **Annex 2**.

124. Key water resource and environmental stress reduction benefits anticipated as a result of the implementation of the identified pilot activities include: municipal waste pollution reduction of 5,775 kg N/yr (6 sites); aquifer pollution reduced by 23 kg N/ha/yr (2 sites); 6,838 ha of restored habitat (4 sites); 290 ha of conserved/protected wetland (2 sites); 25,860 ha of catchment under improved management (7 sites); 30 charcoal producers (40 % of total at site) engaged in alternative charcoal production activities. Additionally, mechanisms to monitor the environmental and socioeconomic status of coastal areas will be established at 9 pilot activity locations. Table 9 summarizes planned stress reduction activities and benefits by country.

Table 9 Key water resource and environmental stress reduction benefits anticipated from R2R IW pilot activities

Municipal Waste Pollution Reduction
<ul style="list-style-type: none"> 749kg/yr (34%) reduction of TN through constructed wetland system serving 15 houses in demonstration area in Nauru 1623 kg/yr (20%) TN reduction through 200 households septic system upgrades and construction of 15 sand filter on-site wastewater treatment systems in the demonstration area in Niue 229 kg/yr (5.4%) TN reduction through construction of 8 eco-sanitation toilets in demonstration area in Kiribati 2,255kg/yr (10%) TN reduction through 40 household on-site wastewater treatment system upgrades and construction of 40 eco-sanitation toilets in the demonstration area in Tonga 919 kg/yr TN and 503 kg/yr P reduction through conversion of 50 wash-down pigpens to dry-litter systems in Tuvalu
Pollution Reduction to Aquifer
<ul style="list-style-type: none"> 7.6 kg/ha/yr TN pollution reduction to groundwater system from conversion of 50 piggeries to dry-litter system in Tuvalu 0.32 kg/ha/yr pollution reduction to groundwater system from on-site sanitation treatment system upgrades in demonstration area in Niue
Restored Habitat
<ul style="list-style-type: none"> 10 ha of coastal area re-vegetated with salt and drought tolerant species at 10 critical sites in Nauru 1,200 ha of protected area re-vegetated in Samoa's Apia watershed (above 600m) 30 ha established and planted with rare endemic species in Vanuatu 5,598 ha of buffer area re-vegetated at Port villa demonstration site in Vanuatu
Conserved/Protected Wetland

<ul style="list-style-type: none"> • 200 ha of fish refugia and wetland habitat protected through Integrated Coastal Management Plan for Honiara in the Solomon Islands • 90 ha of conserved/protected fish refugia habitat in the development of coastal and fisheries management plans in Tonga
Catchment Protection Measures
<ul style="list-style-type: none"> • 8,018 ha under improved catchment management in Muri Lagoon area of Rarotonga, Cook Islands • 1,905 ha under improved catchment management in Tofol, Kosrae, Federated States of Micronesia • 4,608 ha under improved catchment management in Alofi North and Alofi South, Niue • 7,151 ha of conserved/protected coastal area at Bibi in Madang Province, Papua New Guinea • 544 ha under improved catchment management in the Laura Village, Majuro Atoll, Marshall Islands • 606 ha under Mangrove management plan in Momi Bay, Fiji Islands • 3,027 ha proposed for improved management under Sustainable Land Use Strategy in Kovi/Kongulai catchment
Alternative Livelihoods Introduced
<ul style="list-style-type: none"> • 30 charcoal producers (40 percent at site) engaged in alternative (non-mangrove) charcoal production activities

125. Supporting activities will foster cooperation and knowledge sharing among PICS on ICM, IWRM and CCA via sub-regional fora and application of online technologies. Specific outputs and activities associated with the achievement of **Outcome 1.1** are detailed below.

Outputs	Activities
Output 1.1.1 - 14 national pilot project area diagnostics based on R2R approach including: baseline environmental state and social data incorporating CC vulnerabilities; and local governance of water, land, forests and coasts reviewed	1.1.1.1 Identify the physical, biological and social variables for use in characterizing 14 pilot project areas from the perspective of integrated land, water, forest and coastal management
	1.1.1.2 Compile nationally and regionally comparable information and data for the 14 pilot project areas
	1.1.1.3 Conduct, on the basis of 1.2.1.1, site surveys to ground-truth compiled information and data and conduct rapid assessments of identified coastal areas
	1.1.1.4 Prepare final site characterizations and diagnostic reports for pilot project areas of 14 PICS for compilation into national and regional data sets
Output 1.1.2 - 14 national pilot projects test methods for catalyzing local community action, utilizing and providing best practice examples, and building institutional linkages for integrated land, forest, water and coastal management	1.1.2.1 Conduct stakeholder and gender analyses and develop and implement stakeholder engagement plans at 14 pilot project sites
	1.1.2.2 Review governance arrangements at the 14 pilot project sites to identify required Terms of Reference and membership of community-based pilot project coordinating committees, including links to other local and national planning bodies
	1.1.2.3 Establish and convene quarterly meetings of community-based pilot project coordinating committees at 14 sites for the planning, monitoring and evaluation of pilot project activities. Collect sex-disaggregated data of meetings.
	1.1.2.4 Procure technical and managerial services to ensure the timely and efficient delivery of pilot activities at 14 sites

OUTCOME 1.2 NATIONAL DIAGNOSTIC ANALYSES FOR ICM CONDUCTED FOR PRIORITIZING AND SCALING-UP KEY ICM/IWRM REFORMS AND INVESTMENTS

126. Past practice in environment and natural resource programmes in the Pacific has generally been based on equity considerations such that the available resources to programmes and projects for the operation of demonstration and pilot activities tend to be divided equally, or nearly equally, between all participating countries. Similarly, decisions relating to the planning of specific site-related activities in the framework of the GEF's Resource Allocation Framework and System for the Transparent Allocation of Resources (STAR) and other development assistance mechanisms have typically been based on meetings where national priorities are loosely defined with each party participating on they will get something or a share of the pie. Accordingly, the selection of locations for project activities is frequently based upon widespread perceptions of what are good sites, and rarely does it represent the range of biological, environmental and socio-economic conditions at the national level, nor does it reflect island vulnerabilities from the perspectives of disaster risk and climate variability and weather extremes.

127. The design phase of the GEF Pacific IWRM Project introduced a more objective approach which focused on the analysis of water and sanitation management issues, including threats, root causes and barriers analysis in the PICs. Each of the 14 Pacific Island Countries, with the support of SOPAC, produced a national IWRM diagnostic report. These reports assessed the status of water resources and environment in each country. The barriers to implementing an IWRM approach were identified, as were needs in areas of institutional policy and legislation, financing, and human capacity to implement IWRM. Each country also conducted a Hotspot Analysis (HSA). Guidance was provided on the HSA process following the standard Global International Water Assessment (GIWA), and the selection of hot spots and sensitive areas was conducted in consultation with national stakeholders. These hot spot analyses identified the key technical and geographical areas for the national IWRM demonstration projects, and also provided a starting point for the selection of priority sites for replication and scaling-up of best practices.
128. The process of identifying priority locations for integrated land, water, forest and coastal management in the Pacific PICS, and reaching cross-sectoral and community stakeholder agreement on the selection of sites and priority R2R reforms and investments, has the potential to be divisive and acrimonious. This is due to the wide range of sectoral and political interests which will be needed to be reconciled through broader national coordination and planning activities to be conducted under Component 3 of the project. Recognising this problem, this component will build on the objective approach to site selection initiated by the GEF Pacific IWRM Project by constructing an objective and scientifically sound procedure for the identification of priority R2R sites within the 14 participating countries that will: be fully transparent and comprehensible to all parties, both technical and political; be based as far as possible on objective quantifiable criteria and indicators; and that will reflect the importance of the sites from the perspectives of the range of biological, environmental and socio-economic conditions at the national level, and from the perspective of vulnerabilities associated with disaster risk, climate variability, and extremes in weather. The procedure will recognize the different roles, knowledge and priorities of women and men and through gender analysis set the baseline for gender-responsive management.
129. In addition to the process of developing regional agreement on the methods and procedures for characterizing and prioritizing island coastal areas for R2R investment, Component 1 will also develop a diagnostic approach to guide the identification of required R2R reforms and actions at the priority sites. The developed diagnostic approach will be applied at priority locations to produce diagnostic reports for approval by national Inter-Ministry Committees in 14 PICS. Key elements of the diagnostic process will include: development of procedures for identification of environmental issues/problems; the conduct of social and economic evaluations of the environmental issues and problems (e.g., economic costs of environmental impacts, gender analysis of the issues and impacts, social costs of the issues such as adverse effects on human health and welfare); an initial prioritization of the problems, hazards and limitations to legitimate uses and activities; identification and characterization of immediate, secondary, and higher level causes up to the penultimate causes of identified issues/problems (causal chain analyses); identification and characterization of ultimate (root) causes of issues/problems; identification and characterization of options for reform and action; determination of comparative net benefit of options for reform and action; and the identification of priority options for intervention. Information and data generated via the characterization of coastal areas and the conduct of diagnostic analyses will be compiled and managed in 1 regional and 14 national GIS and meta-databases of coastal area information for longer-term R2R planning. Specific outputs and activities associated with the achievement of **Outcome 1.2** are detailed below.

Outputs	Activities
Output 1.2.1 - Priority areas for replication in each of 14 participating PICs characterized in diagnostics for ICM/IWRM reforms, investments and CC adaptation in 14 PICs	1.2.1.1 Identify essential elements of a diagnostic approach to the identification of required R2R reforms and interventions at priority locations for 14 PICs
	1.2.1.2 Conduct analyses for the identified priority locations in 14 PICs
	1.2.1.3 Prepare diagnostic reports for priority coastal areas and facilitate approval by national Inter-Ministry Committees in 14 PICs
Output 1.2.2 - Methodology and	1.2.2.1 Compile nationally and regionally comparable information and data for coastal areas of 14 PICs in agreed format, including sex-disaggregated data for

procedures for characterizing island coastal areas for ICM investment developed	socio-cultural characterizations
	1.2.2.2 Prepare final site characterizations for identified coastal areas of 14 PICS for compilation into national and regional data sets
	1.2.2.3 Using agreed procedures, conduct analyses of available information and data to identify priority locations , including implications for coastal and marine spatial planning. for R2R investment in 14 PICS

OUTCOME 1.3 MULTI-STAKEHOLDER LEADER ROUNDTABLE NETWORKS ESTABLISHED FOR STRENGTHENED ‘COMMUNITY TO CABINET’ ICM/IWRM

130. The GEF Pacific IWRM Project worked to engage and facilitate active participation of community stakeholders in the planning, implementation, and monitoring and evaluation of on-the-ground demonstration activities. This was largely facilitated through representation of community leaders in local coordinating committees of these projects and their participation in national APEX water bodies and task forces. Land, water, forest and coastal governance and management are highly complex issues due to the specific socio-political and cultural structures relating to traditional community, tribal and inter-island practices, rights and interests. These are all interwoven with past colonial and 'modern' practices and instruments. Thus, efforts to test broader Ridge to Reef and Community Cabinet approaches requires long-term commitment from all stakeholders and high levels of community participation through iterative planning and management processes. Experience of the GEF Pacific IWRM Project, and more broadly development programmes in the Pacific generally, shows that involving local people in actions that are designed, implemented, and owned by them, and with benefits that directly accrue to them, is critical for successful management. Initiatives can build on local ecological and cultural knowledge and practice, facilitating innovation and introduction of new techniques as appropriate, and embrace community leadership in solving problems.
131. The importance of effective community leader engagement in efforts to strengthen the integration of management and the coordination of efforts across sectors is elevated by the complex land and marine tenure systems and institutional relationships between national and community-based governance structures. While the Pacific PICS have largely adopted western-style constitutions and legal systems, such community-based governance and leadership arrangements remain highly influential at all levels. Accordingly, the participation of civil society organisations and community and women leaders in development planning is essential to increase the local relevance of management actions and their results. From the perspective of the beneficiary communities themselves, this has the potential to increase participation and understanding of the project and the establishment of realistic views and expectations of anticipated project outcomes. Additional benefits include the localization of technical solutions, the planning of actions that align with local needs and traditions including the often differing needs and priorities of women and men, and increased local pride and networking. From the perspective of the project itself, with an increased sense of ownership there is a greater likelihood of the project being sustainable over the long term and for stakeholders to be willing to commit time to planning, implementing project activities, and participate in monitoring and evaluation. Additionally, local implementation barriers can be more easily understood and addressed, and planning can build on a rich community knowledgebase.
132. Component 1 of this project is designed to ensure that complex land and marine tenure and local governance systems are adequately reflected in the management of PIC coastal systems. Specifically, this will be facilitated via the networking of community leaders and local government officials from R2R pilot activities and STAR projects sites via annual national round-table meetings. Additionally, best practice community level inputs to R2R ICM will be identified, showcased, and shared nationally, regionally and globally among PICS, and with related GEF IW:LEARN initiatives. The sharing of best practices is primarily aimed at ensuring that the effectiveness of influential community-based governance arrangements are adequately acknowledged and reflected in national policy and planning.
133. To assist in remedying the existing low level mobilization of the private sector in environmental investment and planning in PICs, component 1 activities will facilitate 14 national private-sector and donor partnership forums for investment planning in priority community-based ICM/IWRM actions. This will include the conduct of a regional review of, and report on, past and ongoing

public-private partnerships for environmental and natural resource management in PICs to enable the identification of opportunities for private sector investment for implementation of national IWRM plans and national Strategic Action Frameworks for R2R ICM. Additionally, 2 regional partnership forums to facilitate cooperation with the private sector and donors on investment in R2R implementation will be convened. Specific outputs and activities associated with the achievement of **Outcome 1.3** are detailed below.

Outputs	Activities
<p>Output 1.3.1 - Institutional relationships between national and community-based governance structures strengthened and formalized through national Ridge to Reef+ Inter-Ministry Committees in 14 Pacific SIDS</p>	<p>1.3.1.1 Document land and marine tenure and local governance systems at pilot activity and STAR project sites, including identification of implications (and related recommendations) for integrated land, water, forest and coastal management in 14 PICs</p> <p>1.3.1.2 Benchmark, track, and report on community leader engagement and participation in environment and natural resource management at pilot activity and STAR project sites in 14 PICs. Collect and report sex-disaggregated data</p> <p>1.3.1.3 Establish national networks of community leaders and local government officials in 14 PICs. Collect and report sex-disaggregated data</p> <p>1.3.1.4 Program of sub-regional meetings (Micronesia, Polynesia, Melanesia) of R2R project managers and community leaders to foster cooperation and knowledge sharing among PICS on ICM, IWRM and CCA</p>
<p>Output 1.3.2 - 14 national private-sector and donor partnership forums for investment planning in priority community-based ICM/IWRM actions</p>	<p>1.3.2.1 Conduct a review of, and report on, past and ongoing public-private partnerships for environmental and natural resource management in PICs</p> <p>1.3.2.2 Identify and document opportunities for private sector investment at the community level for implementation of national IWRM plans and national Strategic Action Frameworks for R2R ICM</p> <p>1.3.2.3 Convene 2 regional partnership forums to facilitate cooperation with the private sector and donors on investment in R2R implementation</p>

COMPONENT 2. ISLAND-BASED INVESTMENTS IN HUMAN CAPITAL AND KNOWLEDGE TO STRENGTHEN NATIONAL AND LOCAL CAPACITIES FOR RIDGE TO REEF ICM/IWRM APPROACHES, INCORPORATING CLIMATE CHANGE ADAPTATION

134. This component will build national and local capacity for ICM and IWRM implementation to enable best practice in integrated land, water, forest and coastal management, which incorporates climate change adaptation considerations. It will also consolidate and share PIC knowledge on issues including, inter alia, climate variability and extreme weather events, coastal area planning in disaster risk management, and integrating blue forest and livelihood considerations to support evidence-based coastal and marine spatial planning. Additionally, incentive structures for retention of local Ridge to Reef expertise will be identified, and supporting inter-governmental dialogue on human resource needs for ICM/IWRM will be initiated. Component outcomes and associated outputs and activities are detailed below.

OUTCOME 2.1 NATIONAL AND LOCAL CAPACITY FOR ICM AND IWRM IMPLEMENTATION BUILT TO ENABLE BEST PRACTICE IN INTEGRATED LAND, WATER, FOREST AND COASTAL MANAGEMENT AND CLIMATE CHANGE ADAPTATION

135. The achievement of best practices in integrated management in PICs relies on adequate availability of local capacity for ICM and IWRM implementation. This is constrained by the scarcity and limited sharing of specialist expertise and technical resources for integrated environment and natural resource management in the Pacific Island region. As noted above, the GEF Pacific IWRM Project resulted in the development of considerable local experience in the

management of GEF projects, which has played a catalytic role in the establishment of a cadre of island-based project managers and technicians experienced in integrated approaches to water resource management. Component 2 will build on this via the development and delivery of an innovative post-graduate training program in Integrated Water and Coastal Management for project managers of the pilot activities and national STAR projects through a partnership of internationally recognized educational institutes.

136. The design of this postgraduate training programme enables eligible project managers and R2R stakeholders to progress towards a Master's degree qualification. The programme will feature articulated entry and exit points, and training course assessment tasks aligned with the delivery of outputs from national projects. The latter is designed not only to increase the relevance of the training programme to local needs, but to draw on the academic expertise of the involved educational institutes as a quality assurance mechanism to assist in ensuring that the outputs of national activities are technically and scientifically sound. This will be complemented with a community-based certification programme in R2R planning and CC adaptation for stakeholders at project sites, which will be led and coordinated nationally by participants of the regional training programme. The design of the community-based certification program will include a Rapid Social Assessment of each project site to ensure maximum participation of women and men.
137. A technical support and mentoring program will be established to facilitate placements of young professionals within pilot and STAR project management units and offices of national planning and finance ministries. Women and men often have differing expectations and needs in professional development, requiring differing approaches to mentoring and support. To ensure a high level of women placements, a regional gender-responsive analysis will be conducted to identify appropriate programs to support effective professional development. This will be further strengthened through regional coordination with programmes such as Australian Volunteers for International Development, the New Zealand Aid programme's Volunteer Service Abroad, the VSO programme, the United Nations Volunteer Program and the United States Agency for International Development's Volunteers for Prosperity program to align volunteer placements with work of the R2R programme at the national level. Specific outputs and activities associated with the achievement of **Outcome 2.1** are detailed below.

Outputs	Activities
<p>Output 2.1.1 - Innovative post-graduate training program in ICM/IWRM and related CC adaptation delivered for project managers and participating stakeholders through partnership of internationally recognized educational institutes and technical support and mentoring program with results documented</p>	<p>2.1.1.1 Engage consortium of internationally recognized educational institutes to deliver a cost-effective post-graduate training course which is both accredited and regionally appropriate</p>
	<p>2.1.1.2 Develop an agreed curricula and regionally appropriate training materials and strategies, including alignment with focus of national projects</p>
	<p>2.1.1.3 Benchmark and track project management, coordination, technical and scientific capacity of training programme participants. Collect and report sex-disaggregated data</p>
<p>Output 2.1.2 - Capacity for civil society and community organization participation in ICM/IWRM and CC adaptation strengthened through direct involvement in implementation of demo activities with results documented</p>	<p>2.1.2.1 Produce locally appropriate public awareness and outreach materials to promote local social, economic and environmental benefits of the R2R approach</p>
	<p>2.1.2.2 In connection with output 2.1.1, conduct gender analysis and implement targeted capacity building programmes at priority communities in the 14 PICs</p>
	<p>2.1.2.3 Benchmark and annually track community stakeholder understanding of R2R guiding principles and capacity to participate in integrated management. Collect and report sex-disaggregated data</p>

OUTCOME 2.2 INCENTIVE STRUCTURES FOR RETENTION OF LOCAL ‘RIDGE TO REEF’ EXPERTISE AND INTER-GOVERNMENTAL DIALOGUE ON HUMAN RESOURCE NEEDS FOR ICM/IWRM INITIATED

138. Retention of skilled and experienced practitioners in environment and natural resource management in PICs is low. This is particularly the case in project-based investments whereby project management units are typically staffed by often young and enthusiast graduates whom rapidly develop competencies and experience in engaging with community stakeholders, national and local government agencies, and regional development partners, as well as the financial management and reporting requirements of donors. As a result of capacity developed through involvement in project delivery, young environment and natural resource professionals often find themselves rapidly promoted to senior managerial roles, transferred across Ministries, or securing lucrative scholarships to study overseas in Masters and PhD degree programmes. Accordingly, project-based employment is broadly seen as a stepping stone from returning back on island upon completion of under-graduate studies, which are typically undertaken in Fiji, Australia, New Zealand and Hawaii, to a permanent senior role in government or a return overseas for further scholarship-supported education or employment. The latter is often associated with permanent migration.
139. This outcome of Component 2 provides a supporting function to the R2R programme and future investments in environment and natural resource management in PICs. Specifically, it will; identify the required functional competencies of national and local personnel for environment and natural resource management, particularly as they relate to ICM/IWRM; assess Public Service Commission employment conditions; identify and recommend through gender analysis the differing needs and priorities of women and men and in particular identify what are the obstacles and opportunities to retaining women in technical and managerial roles; and identify and recommend incentive structures for staff retention for ICM/IWRM initiatives. The latter will include recommendations on: (a) competency-based career progression to ensure recognition and retention; and (b) ongoing recruitment and human capacity retention needs for ICM/IWRM. Additionally it will benchmark and track competencies of national and local government units for ICM/IWRM implementation to assist in the identification of ongoing capacity development needs and to enable reporting on results capacity building initiatives associated with Outcome 2.1. It will also initiate inter-governmental dialogue on human capacity needs for cross-sectoral coordination of PIC sustainable development in national/sub-regional/regional inter-governmental fora, and produce inter-governmentally agreed guidelines on competency-based career progression, incentive structures, and retention of R2R and climate change adaptation practitioners. Specific outputs and activities associated with the achievement of **Outcome 2.3** are detailed below.

Outputs	Activities
Output 2.2.1 - National human capacity needs for ICM/IWRM implementation identified and competencies of national and local government units for ICM/IWRM implementation benchmarked, tracked, and capacity building support secured with results documented	2.2.1.1 Formulate and publish regional guidelines for benchmarking and tracking functional competencies of R2R personnel
	2.2.1.2 Conduct and report on an assessment, including gender assessment, of national and local government competencies and capacity development needs for IWRM/ICM, including the development of supporting communications tools for use in various national, sub-regional and regional dialogues on capacity retention and needs
	2.2.1.3 Track competencies of national and local government units for ICM/IWRM implementation and report on results of capacity building and knowledge sharing initiatives. Collect and report sex-disaggregated data
Output 2.2.2 - Existing Public Service Commission salary scales and required functional competencies of key ICM/IWRM personnel	2.2.2.1 Compile information and report on Public Service Commission employment conditions in 14 PICs, including existing incentive structures for staff retention and advancement, and sex-disaggregated data
	2.2.2.2 Identify and report on the required functional competencies of national and local personnel for environment and natural resource management, particularly as they relate to ICM/IWRM, in 14 PICs

analyzed; appropriate guidelines and incentive structures explored to encourage retention skilled and experienced staff	2.2.2.3 Formulate recommendations on competency-based career progression to ensure recognition and retention, and recruitment and human capacity retention needs for ICM/IWRM
---	--

COMPONENT 3. MAINSTREAMING OF RIDGE TO REEF ICM/IWRM APPROACHES INTO NATIONAL DEVELOPMENT PLANNING

140. This component will build on the national coordination and policy and planning achievements of the GEF Pacific IWRM Project via the development and endorsement of national and regional strategic action frameworks for ICM/IWRM. These strategic action frameworks aim to meet the regional need for the mainstreaming of R2R approaches in national development planning. It will also support strengthened national coordination for R2R integrated land, water, forest and coastal management, including climate change adaptation, in the participating countries. Physical, natural, human and social capital will also be built via activities of the component to strengthen island resilience to current and emerging anthropogenic threats and climate extremes. Component outcomes and associated outputs and activities are detailed below.

OUTCOME 3.1 NATIONAL AND REGIONAL STRATEGIC ACTION FRAMEWORKS FOR ICM/IWRM ENDORSED NATIONALLY AND REGIONALLY

141. The effectiveness of sectoral planning and investment is constrained as a result of inadequate consideration of the close inter-connections of natural and social systems in PICs. Accordingly, the extent of harmonization of sectoral governance frameworks achieved through national development planning process is typically low. Additionally, there is limited application of evidence-based approaches in national development planning of the participating countries, particularly in the areas of: balancing coastal livelihoods and biodiversity conservation; hazard risk reduction; and planning for climate variability and change. While the capabilities of sectors responsible for the management of freshwater use and sanitation, wastewater treatment and pollution control, land use and forestry practices, and coastal fisheries for science-based planning have advanced considerably over the past decade, there remains a need for improvement.

142. Accordingly, this component of the project will support the participating countries in the identification of nationally relevant coastal policy, legal and budgetary reforms for R2R integrated approaches in the 14 countries. This will include the formulation of recommendations for the harmonization of governance systems, i.e., (a) across sectors engaged in land, water, forest and coastal management, including climate change adaptation, and (b) between national government and local governance frameworks. This will involve review and analysis of existing relevant policies, laws, Executive Orders, Presidential Decrees, and departmental strategic plans, and local/municipal by-laws and regulations in 14 PICs including analysis of objectives for their attention to gender considerations. This will be supported via a parallel activity to strengthen evidence-based planning via the development of national State of the Coasts (SoC) reports, which build on the National Water, Sanitation and Climate Outlook reports generated through the Pacific IWRM initiative. The State of the Coast reporting will draw on information and data consolidated through the characterization and diagnostic analyses of priority coastal areas undertaken as part of project Outcome 1.2, and that generated as a result of R2R pilot activities and STAR projects.

The abovementioned parallel activities relating to the harmonization of governance frameworks and the strengthening of evidence-based planning will be used to inform the development of national inter-ministerially agreed Strategic Action Frameworks for ICM. These frameworks will complement the SoC reports, and will include the following key elements: statements of vision, goals, guiding principles, and priority areas of action for ICM; costed ~5 year action plan for ICM implementation, including actions to strengthen enabling environments, institutional frameworks, and management instruments; descriptions of the features and membership of national coordination mechanisms for ICM; and will be approved at the inter-ministerial level. The SoC and Strategic Action Frameworks will be developed through national consultations with attention to gender mainstreaming and launched during National Coastal Summits in Year 3 of the project. The national frameworks will be reflected in

a regional Strategic Action Plan for ICM investment in the Pacific PICS which will be developed in parallel to national activities. Specific outputs and activities associated with the achievement of **Outcome 3.1** are detailed below.

Outputs	Activities
Output 3.1.1 - National recommendations for 14 PICs for coastal policy, legal and budgetary reforms for ICM/IWRM for integration of land, water, forest, coastal management and CC adaptation compiled and documented with options for harmonization of governance frameworks	3.1.1.1 Compile, and develop national online catalogues of, existing policies, laws, Executive Orders, Presidential Decrees, and departmental strategic plans and other legal instruments relating to land, water, forests and coastal management for 14 PICs
	3.1.1.2 Document national budgetary planning processes to inform initiatives to mainstream R2R ICM into national development planning and government service delivery in the 14 PICs
	3.1.1.3 Formulate national recommendations for coastal policy, legal and institutional reforms for ICM, including options for harmonization of (a) sectoral policies and legislation and (b) national and local level governance frameworks, in 14 PICs
	3.1.1.4 Regionally appropriate knowledge tools developed to support evidence-based coastal and marine spatial planning in PICs
Output 3.1.2 - Inter-ministerial agreements and strategic action frameworks for 14 PICs on integration of land, water, forest and coastal management and capacity building in development of national ICM/IWRM reforms and investment plans endorsed by leaders	3.1.3.1 Develop and operate a program of national leader and stakeholder consultations on efforts to harmonize governance frameworks and strengthen evidence-based planning to initiate dialogue on Strategic Action Framework development in 14 PICs Collect and report sex-disaggregated data
	3.1.3.2 Draft key elements of Strategic Action Frameworks, including quarterly review by national Inter-Ministry Committees, and launch approved versions during National Coastal Summit [Yr 3] in 14 PICs
	3.1.3.3 Draft regional Strategic Action Plan for ICM [in parallel to activity 3.1.3.2] for leader endorsement
Output 3.1.3 - National State of the Coasts reports for 14 PICs completed and launched to Pacific Leaders during National Coastal Summits (Yr 3) in coordination with national R2R projects and demonstrated as national development planning tool, including guidelines for diagnostic analyses of coastal areas	3.1.2.1 Establish linkages between State of the Coast reporting and efforts to identify and evaluate environmental issues and problems, and options for reform and intervention, for priority national coastal areas of 14 PICs
	3.1.2.2 Develop an agreed structure and content for national State of the Coast reports, and draft reports with step-wise review by national Inter-Ministry Committees
	3.1.2.3 Incorporate information and data consolidated through the characterization and diagnostic analyses of priority coastal areas and as a result of R2R pilot activities and STAR projects in draft State of the Coast reports for 14 PICs
	3.1.2.4 Publish final State of the Coast Reports for 14 PICs

OUTCOME 3.2 COORDINATED APPROACHES FOR R2R INTEGRATED LAND, WATER, FOREST AND COASTAL MANAGEMENT AND CLIMATE CHANGE ADAPTATION ACHIEVED IN 14 PICS

143. Efforts to integrate land, water, forest, and coastal management, including climate change adaptation, will in large rely on the effectiveness of the coordination mechanisms established to facilitate cross-sectoral engagement and inter-linkages between national governments, provincial/local governments and communities. Given the demands on time of many middle to senior-level managers in the government agencies of the PICs, both from the perspective of undertaking administrative and technical work and that required for regional and International travel for inter-governmental meetings convened by Convention secretariats and those of other development partners and donors, effective national coordination across sectors is often challenged by issues relating to continuity of participation of representatives of agencies. Similarly, the burgeoning number of donor imposed committees established to meet good

governance requirements of sectoral projects, creates significant demand on time on civil servants in all PICs. The time spent in various committee meetings has resulted in a meeting malaise among many officials in the environment and natural resource sectors of PICs.

144. While several countries, for example Palau and Tonga, have attempted to streamline the approach to coordination of various national development initiatives and projects via the establishment of national environmental planning and coordination committees or sustainable development councils, these initiatives have typically been at the mercy of political processes, awakening with one administration or government, and lacking support from the next. Several other countries, including the Marshall Islands and Fiji for example have loosely established coastal management committees, but meet largely on an *ad hoc* basis, are comprised of like-minded individuals rather than adequate cross-sectoral representation, have no clear mandate, and are rarely engaged in decision making on matters relating to harmonization of policy and legal frameworks, cross-sectoral planning, or the identification of priorities for investment. None include mechanisms for effective engagement of local governments and community leaders in coordination and planning.
145. The GEF Pacific IWRM Project was successful in establishing national cross-sectoral coordination bodies for the water and sanitation in the PICs, many endorsed at the level of Cabinet or President, tasked with specific activities of developing National Water, Sanitation and Climate Outlooks, developing and facilitating the formal adoption of National Water and Sanitation Policies, and development of National IWRM Plans. The urgency of water and sanitation issues in all PICs provided a high profile entry point to the initiation of efforts to develop integrated management approaches, which was effective in engaging sectors such as public works and infrastructure, environment, meteorology, and health. Component 3 of this project will build on these existing mechanisms by supporting the expansion of existing national APEX bodies for IWRM to Inter-Ministry Committees (IMCs) comprised of representatives of agencies responsible for land, water, forests and coastal management.
146. The IMCs will oversee, *inter alia*, national level coordination of the Ridge to Reef programme, the planning of national pilot activities planned under Component 1 and the associated national STAR projects, the coordination of inputs to the preparation of State of the Coasts reports and associated national Strategic Action Frameworks, and monitoring and evaluation of R2R programme results at the national level. Secretariat support will be provided by national lead agencies to facilitate quarterly meetings of these groups. The role and effectiveness of IMCs as central national bodies for the planning and coordination of environmental and natural resource management will be tested via IMCs being tasked with the national-level planning of the use of GEF STAR funding available to the Pacific PICs through the GEF sixth replenishment.
147. The GEF Pacific IWRM Project was also successful in establishing community-based coordinating committees for each of its national IWRM demonstration projects. These community-based committees were effective in engaging community stakeholders and local leaders, and this model will be replicated for the local coordination of pilot activities and STAR projects as part of the R2R programme to establish a network of community-based committees for ICM/IWRM. Secretariat support will similarly be provided by the national lead agencies to facilitate quarterly meetings of these bodies. The Community to Cabinet approach will be strengthened via community leader participation in meetings of the national IMC. This component also has a supporting learning activity to determine the effectiveness of national and local coordination and integration fostered through project activities. Specific outputs and activities associated with the achievement of **Outcome 3.2** are detailed below.

Outputs	Activities
Output 3.2.1 - 14 national networks of national ICM/IWRM pilot project inter-ministry committees formed by building on existing IWRM committees and contributing to a common results framework at the project and program levels	3.2.1.1 In connection with activities of component 2, formalize sub-regional networks of local committees for pilot projects and STAR projects. Collect and report sex-disaggregated data
	3.2.1.2 Support community leader and local committee representative participation in IMC meetings in 14 PICs, including creation of reporting feedback loops between national and local governments. Collect and report sex-disaggregated data
	3.2.1.3 Develop and conduct training for local committees on results-

	oriented project planning, execution and reporting. Collect and report sex-disaggregated data
Output 3.2.2 - Periodic inter-ministry committee meetings in 14 PICS conducted and results documented, participation data assembled and reported to national decision-makers and regional forums	3.2.2.1 Review governance arrangements in 14 PICs to identify required Terms of Reference and membership of national Inter-Ministry Committees, including links to other local and national planning bodies
	3.2.2.2 Develop Terms of Reference and determine membership for national Inter-Ministry Committees in 14 PICs
	3.2.2.3 Develop work plan and timetable of activities for Inter-Ministry Committees in 14 PICs
	3.2.2.4 Convene quarterly meetings of Inter-Ministry Committees in 14 PICs. Collect and report sex-disaggregated data
Output 3.2.3 - Community leaders and local government from pilot projects networked via periodic national and regional round-table meetings complemented by community tech exchange visits	3.2.3.1 Identify and document past best practice community-level inputs to environmental and natural resource management in 14 PICs
	3.2.3.2 Develop and implement system for identification and annual reporting, including sex-disaggregated data, on best practice community-level inputs to execution of pilot activities and national STAR projects in 14 PICs
Output 3.2.4 - Participatory techniques used to gauge learning and change in perception among inter-ministry committee members in 4 pilot PICs (sub-regional, mix of high island, atoll settings)	3.2.4.1 Information and data on the level of joint planning and uptake of management decisions for IMCs in 4 PICs assembled, analyzed and reported
	3.2.4.2 Continuity of participation of members of national IMCs in 4 PICs tracked, including sex-disaggregated data, and reported on
	3.2.4.3 Participatory most significant change techniques used to gauge learning and change in perception among IMC members in 4 PICs (sub-regional, mix of high island, atoll settings). Builds on Pacific IWRM structured video interview approach.

COMPONENT 4. REGIONAL AND NATIONAL ‘RIDGE TO REEF’ INDICATORS FOR REPORTING, MONITORING, ADAPTIVE MANAGEMENT AND KNOWLEDGE MANAGEMENT

148. This component will build on the results-based approach to project planning and management applied and showcased through the GEF Pacific IWRM Project via the national and regional formulation and adoption of integrated and simplified results frameworks for the GEF multi-focal area Ridge to Reef programme. This represents the first time such a harmonized reporting approach will be developed for a GEF programme aligned with strategic objectives across multiple focal areas, including biodiversity, climate change mitigation, climate change adaptation, International waters, land degradation, and sustainable forestry management. The component will also establish national and regional platforms for managing information and sharing of best practices and lessons learned in integrated land, water, forest and coastal management, including climate change adaptation. Component outcomes and associated outputs and activities are detailed below.

OUTCOME 4.1 NATIONAL AND REGIONAL FORMULATION AND ADOPTION OF INTEGRATED AND SIMPLIFIED RESULTS FRAMEWORKS FOR INTEGRATED MULTI-FOCAL PROJECTS

149. The GEF multi-focal Ridge to Reef programme is designed to result in the achievement of a large and diverse range of outcomes and outputs relating to GEF strategic objectives for biodiversity, climate change mitigation, climate change adaptation, International waters, land degradation, and sustainable forestry management. The tracking of the results of this programme across 14 participating countries represents a significant challenge to the GEF, the three agencies involved,

namely UNDP, UNDP and FAO, and the countries themselves. This is made more complex by the increasingly large myriad of national level reporting requirements for natural resource and environment agencies which constrains the timely and accurate reporting of results of development assistance in PICs.

150. The GEF Pacific IWRM project tested a results tracking and reporting approach, which included the training of a cadre of national water and sanitation sector staff in results-based management of GEF supported initiatives, and which was showcased by the GEF Secretariat as a best practice in regional and national project management. This component will build on these achievements by developing a harmonized multi-focal area results framework and analytical tool for use in tracking the progress and results of individual projects and the overarching Ridge to Reef programme. This will involve the development of sets of process, stress reduction and environmental/social indicators with related reporting templates, for quarterly and annual monitoring and evaluation. Sex-disaggregated data will be collected throughout various activities of the project for inclusion in monitoring and evaluation allowing gender considerations to be reflected in reporting. National planning exercises will also be conducted in selected PICs to explore the alignment of national indicator sets with convention reporting and to investigate the inclusion of gender-responsive indicators.
151. Additionally, an online resultsportal will be developed for Results-Based Management training, the online submission of routine reports, and the routine sharing of Ridge to Reef programme results, including the geospatial presentation of results linked to related initiatives of the GEF International Waters Learning Exchange and Resource Network (IW:LEARN) project. Specific outputs and activities associated with the achievement of **Outcome 4.1** are detailed below.

Outputs	Activities
Output 4.1.1 - National and regional reporting templates developed based on national indicator sets and regional framework to facilitate annual results reporting and monitoring from 14 PICs	4.1.1.1 Develop a harmonized regional framework of process, stress reduction and environment/social state indicators to monitor effectiveness of integrated land, water, forest and coastal management, including climate change adaptation, in PICs
	4.1.1.2 Develop harmonized national sets of process, stress reduction and environmental/social state indicators to monitor results Ridge to Reef programme investments in 14 PICs, including endorsement by IMCs
	4.1.1.3 Develop harmonized regional and national results reporting templates based on respective indicator sets to facilitate annual reporting by 14 PICs and at the regional level
Output 4.1.2 - Unified/harmonized multi-focal area results tracking approach and analytical tool developed and proposed to the GEF, its agencies and participating countries	4.1.2.1 Develop multi-focal area results tracking framework and associated programme indicator sets
	4.1.2.2 Develop a web-based analytical tool for the assembly and analysis of information and data on project and programme status, including capability for generation of harmonized regional and national results reports
	4.1.2.3 Demonstrate application of the framework and analytical tool for mainstreaming at the national level
Output 4.1.3 - National planning exercises in 14 Pac SIDS conducted with relevant ministries on embedding R2R results frameworks into national systems for reporting, monitoring and budgeting	4.1.3.1 Organise and conduct national planning exercises with Ministries responsible for planning and finance on embedding indicator sets in national accounts for four selected PICs. Collect and report sex-disaggregated data
	4.1.3.2 Document outcomes of national planning exercises (4.1.3.1) and presented to national leaders and sessions of sub-regional and regional inter-governmental fora

OUTCOME 4.2 NATIONAL AND REGIONAL PLATFORMS FOR MANAGING INFORMATION AND SHARING OF BEST PRACTICES AND LESSONS LEARNED IN R2R ESTABLISHED

152. Global experience in integrated natural resource and environmental management has shown that efforts to integrate water, land and coastal management are initially vulnerable fledglings when introduced at national and sub-national units of government, and as such, at the mercy of the bureaucratic pecking order. In order for efforts to survive and grow, national-level leaders of such processes need to be able to effectively communicate the benefits of such integrated approaches across a broad range of government agencies and local institutions in order to convince government and community leaders that it is in their self-interest to voluntarily coordinate across areas such as: policy and development planning; investment in efforts to reduce stress on natural resources and improve environmental state; and in strengthening community engagement in management.
153. Communications and the effective use of the media was identified by the terminal evaluation of the GEF Pacific IWRM Project as a critical element of efforts to raise awareness, to stimulate support for necessary policy and legal reforms, and for global outreach with donors and sister initiatives in the Caribbean and the Indian and Atlantic Ocean PICS. That review also identified the communications and media initiatives of the Pacific IWRM initiative as being essential in ensuring that best practices generated through national IWRM demonstration projects and national policy development processes were captured, shared and effectively communicated to guide the longer-term sustainability and scaling-up of investments. This component builds on these achievements through development of national and regional platforms for managing information and sharing best practices and lessons learned from efforts of this project to test the integration of water, land, forest and coastal management.
154. Specifically, a regional Ridge to Reef communications strategy will be developed and implemented via the public-private partnership established through the GEF Pacific IWRM Project for strengthening the role of communications and the media in integrating water and coastal management in Pacific Island Countries. This agreement includes an emphasis on capacity development for natural resource managers and media professionals and sets out activities to be executed through the partnership to include *inter alia*:
- Training of young media professionals in integrated water and coastal management
 - Mentoring of natural resource managers on communications and media issues
 - Targeted television broadcasting of water resource and coastal management media products
 - Preparation of short film, documentary and other awareness materials for outreach purposes
 - Design of awareness materials (translated into local language) and use of web-based technologies for communications
 - Liaison with national and regional media outlets for broad syndication of media products
 - Development of multi-media products in support of regional and national coordination initiatives
 - Capture and regional sharing of national experiences in project execution
 - Planning of communications strategies in support of region-wide scaling-up of integrated approaches
155. The abovementioned partnership will act as a hub for a network of PIC based media outlets which will be established under this component for the national and regional level syndication Ridge to Reef programme news and media products. This will be complemented via the establishment and operation of web-based Pacific R2R Network to strengthen cross-sectoral and multi-lateral communication and knowledge management. Significantly, this component will result in the publication of a special issue of a peer reviewed international journal on best practices and lessons learned in PIC sustainable development, based on the outcomes and achievements of the GEF Pacific IWRM Project, the Ridge to Reef Programme, and other GEF supported initiatives in the Pacific region, including the Oceanic Fisheries Management project. This component will also support stakeholder participation in IW:LEARN activities, including participation in regular International conferences and sub-regional workshops, preparation of at least 10 experience notes, and the establishment of inter-linked websites.
156. Coastal and marine spatial planning in PICs, including climate change adaptation, is currently constrained as a result of inadequate engagement of sectoral experience in: water security and wastewater management; coastal blue forests and livelihoods; coastal hazards management; and disaster risk reduction. Supporting activities will facilitate the consolidation and sharing of

sectoral knowledge and expertise for the development of regionally appropriate knowledge tools to support evidence-based coastal and marine spatial planning in PICS. Key knowledge tools will address inter alia: (i) climate variability in coastal systems; (ii) hazards and coastal area planning; (iii) blue forests and livelihoods; (iv) spatial planning in coastal fisheries; (v) water security and wastewater management; and (vi) land and marine tenure and use designation, including implications for coastal and marine spatial planning. Specific outputs and activities associated with the achievement of **Outcome 4.2** are detailed below.

Outputs	Activities
Output 4.2.1 - Regional ridge to reef communications strategy developed and implemented and assistance provided to national R2R project including partnerships with national and regional media and educational organizations	4.2.1.1 Formalise public-private partnership with regional media outlet for strengthening the role of communications and the media in integrating land, water, forest and coastal management in PICS
	4.2.1.2 Prepare and secure IMC and Programme Steering Committee meeting endorsement of a regional communications strategy for the Ridge to Reef programme
	4.2.1.3 Develop and implement annual costed communication plans in support off Ridge to Reef programme delivery
Output 4.2.2 - Participation in IW:LEARN activities: conferences; preparation of at least 10 experience notes and inter-linked websites with combined allocation of 1% of GEF grant	4.2.2.1 Participate in biennial International Water Conferences
	4.2.2.2 Prepare and publish 10 International Waters Experience Notes
	4.2.2.3 Ensure web-site (Output 4.2.3) is linked to www.iwlearn.net
Output 4.2.3 - Established Pacific R2R Network, online regional and national portals containing among others, databases, rosters of national and regional experts and practitioners on R2R, register of national and regional projects, repository for best practice R2R technologies, lessons learned etc.	4.2.3.1 Establish and maintain an overarching website for the Ridge to Reef programme, including the various web-portals and broadcast of project information
	4.2.4.2 Plan and operate and annual web-based competition to facilitate broad national and regional level awareness and support of the Ridge to Reef programme
	4.2.4.3 Utilize social media, particularly Facebook, to support syndication of programme news and information
	4.2.4.4 Engage with Google Earth and other online initiatives for global outreach

COMPONENT 5. RIDGE-TO-REEF REGIONAL AND NATIONAL COORDINATION

157. Component 5 is designed to facilitate effective overall coordination of the Ridge to Reef programme at both national and regional levels. Accordingly, the anticipated outcome of the component is as follows:

OUTCOME 5.1 EFFECTIVE PROGRAM COORDINATION OF NATIONAL AND REGIONAL R2R PROJECTS

158. Despite the successes of the GEF Pacific IWRM Project in guiding the timely and cost-effective execution and management of national level activities of that project, there exists limited national level experience and capacity in delivery of large integrated natural resource and environment projects and programme, such as the Ridge to Reef initiative. Similarly, there exists low-level familiarity with GEF and Implementing Agency minimum standards for results-based management, monitoring and evaluation, and financial and progress reporting requirements. In this connection, this component will establish and operate an overarching Ridge to Reef program coordination unit tasked with facilitating the timely delivery of Ridge to Reef program targets and outcomes via the provision of technical, operational, reporting and monitoring support as requested by participating PICS. The programme coordinating unit will, *inter alia*, also organise

and facilitate a program of periodic planning and coordination workshops for national R2R project teams, act as the Secretariat to the Program Steering Committee and the Regional Scientific and Technical Committee, lead regional scientific and technical activities of this project, and be responsible for meeting regional reporting requirements of UNDP, UNEP, and FAO. Full Terms of Reference and composition of the Program Coordination Unit is provided in Annex # of this document.

159. Specifically, activities of Component 5 will leverage the benefits of the integrated, multi-sectorial planning and coordination of the multiple national investments of the Ridge to Reef program. Achievement of such benefits are currently constrained as a result of inadequate engagement of sectoral experience in: water security and wastewater management; coastal blue forests and livelihoods; coastal hazards management; and disaster risk reduction. This project will address this barrier via the provision of technical, operational, reporting and monitoring support, as requested by participating PICs, and as required to facilitate timely delivery of overall program goals.
160. Importantly, the regional Program Coordination Unit will facilitate the consolidation and sharing of sectoral knowledge and expertise by ensuring that scientific and technical aspects of the R2R program meet International standards. Specifically it will review the substantive activity of project component 1 to develop a regionally appropriate method and procedure for the characterization and prioritization of PIC coastal areas for R2R investment and the conduct of diagnostic analysis to identify needs for key reforms and investments in priority areas. It will also provide inputs to the design of curricula and training materials for the regional post-graduate training program to be operated as part of this component 2, and will provide regional guidance to the national State of Coasts reporting and harmonized results reporting to be undertaken as part of components 3 and 4, respectively. Additionally, the regional Project Coordination Unit will lead the development of regionally appropriate knowledge tools to support evidence-based coastal and marine spatial planning in PICS.
161. Key knowledge tools to be produced include synthesis reports on: (i) climate variability in coastal systems; (ii) hazards and coastal area planning; (iii) blue forests and livelihoods; (iv) spatial planning in coastal fisheries; (v) water security and wastewater management; and (vi) land and marine tenure and use designation, including implications for coastal and marine spatial planning. These will be disseminated online and supporting multi-media products will be developed and syndicated regionally to stimulate national and regional level uptake and use in policy-making and planning. To further support the uptake of regionally accumulated scientific knowledge in policy-making and planning, the project will facilitate exchanges between government and the scientific community via meetings of the Regional Steering Committee and national Inter-Ministry Committees. Linkages will also be established with the community leaders and local government round-table meetings to support broad dissemination of regionally consolidated knowledge and science at the community level.
162. The Program Coordination Unit will also develop locally appropriate learning materials and strategies to facilitate effective knowledge exchange on ICM, IWRM and CCA. Specifically, best practice technologies and measures tested in pilot demos and STAR projects reviewed, codified and disseminated as a PIC wide capacity building tool. This will involve: the development of a system for the identification and reporting on best practices generated by, and lessons learned from, the pilot activities and national STAR projects in the 14 participating countries; monitoring and reporting on the effectiveness of innovative solutions tested at the 14 pilot sites; development and maintenance of a regional online catalogue of best practice management approaches for integrated land, forest, water and coastal management; and production of communications products on best practices generated in the 14 countries for syndication online and via national and regional media outlets.
163. This regional coordination of technical support will be further extended, where possible, to align the posting of development workers in support of program activities at both national and regional levels to provide technical inputs to initiatives including the development of national and regional strategic action frameworks for ICM. Supporting activities include: the development of a register of national and regional water, land and coastal management practitioners to facilitate intra-country and multi-lateral sharing of skills and expertise; and the development of an online database of past and present projects relating to land, water, forests, coasts and climate change adaptation to assist in information sharing on available specialist expertise and technical resources and to serve as a repository for lessons learned.

164. As an additional supporting mechanism, capacity for civil society and community organization participation in the implementation of national IWRM plans and in R2R ICM planning will be strengthened via exploring an operational partnership with GEF SGP. The latter was initiated by the GEF Pacific IWRM Project and SGP in 2012. Additionally, relationships between local governments, communities, and the private sector will be strengthened via private-sector and donor partnership forums. Supporting activities for the latter include: the conduct of a review of past and ongoing public-private partnerships for environmental and natural resource management in PICs; identification and documentation of opportunities for private sector investment at the community level for implementation of national IWRM plans and national Strategic Action Frameworks for R2R ICM; and the convening of a regional partnership forum to facilitate cooperation with the private sector and donors on investment in R2R implementation.

165. At the national-level, the project will build on existing coordination mechanisms by supporting the expansion of existing national APEX bodies for IWRM to Inter-Ministry Committees (IMCs) comprised of representatives of agencies responsible for land, water, forests and coastal management. The IMCs will oversee, inter alia, national level coordination of the Ridge to Reef programme, the planning of national pilot activities and the associated national STAR projects, the coordination of inputs to the preparation of national Strategic Action Frameworks, and monitoring and evaluation of R2R programme results at the national level. Secretariat support will be provided by national lead agencies to facilitate quarterly meetings of these groups. To ensure adequate coordination between and among GEF supported national investments, each national STAR project has been resourced with GEF International Waters funding (US\$150,000 per participating country). These resources will enable: representatives of national STAR projects to participate in IMC and regional meetings; effective national and regional level coordination of the communication of STAR project results and examples of best practices; STAR project stakeholder participation in program capacity building exercises; as well as supporting good program governance, including knowledge management and sharing. These unique features of the Pacific R2R program are planned to ensure cohesion, complementarity and efficiency of GEF investments at the national level, while simultaneously supporting effective intra-regional exchange and advocacy. Specific outputs and activities associated with the achievement of **Outcome 5.1** are detailed below.

Outputs	Activities
Output 5.1.1 - Functioning overall R2R program coordination unit with alignment of development worker positions contributing to coordinated effort among national R2R projects (Year 1)	5.1.1.1 Draft Terms of Reference for Program Coordinating Unit members, advertise positions, and recruit staff
	5.1.1.2 Develop annual work plans and performance development system documentation for Program Coordinating Unit members
	5.1.1.3 Undertake annual project management training and retreat for Program Coordinating Unit
Output 5.1.2 - Technical, operational, reporting and monitoring support provided to national R2R projects, as may be requested by PICs, to facilitate timely delivery of overall program goals	5.1.2.1 In consultation with national project managers, prepare and monitor annual and quarterly national project work plans and budgets
	5.1.2.2 In consultation with IMCs and the Program Steering Committee, determine annual delivery and expenditure targets
	5.1.2.3 In consultation with the IMCs, develop and implement annual technical support programmes for 14 PICs
Output 5.1.3 - Assistance provided to participating countries in the Pacific R2R network, harmonized reporting and monitoring and other regional and national and capacity building modules, among others	5.1.3.1 Building on activities of Outcome 4.1, provide targeted support to 14 PICs for STAR project planning, monitoring and evaluation, results reporting and gender mainstreaming
	5.1.3.2 Building on activities of Outcome 4.1, provide targeted support to 14 PICs for STAR project engagement in national and regional knowledge exchange and learning activities

Output 5.1.4 - Periodic planning and coordination workshops conducted for national project teams in the Pacific R2R network	5.1.4.1 Organise and convene annual Programme Steering Committee meetings
	5.1.4.2 Organise and convene bi-annual Regional Scientific and Technical Committee meetings one of which coincides with the annual RSC Meeting
	5.1.4.3 Organise national and subregional planning workshops in support of outcomes of Components 1-4

2.5 KEY INDICATORS, RISKS AND ASSUMPTIONS

166. The key performance indicators for assessing the achievement of the project objective and outcomes are listed in the table below. These indicators, along with their baseline values, targets and means of verification, and those of the output level are described in the Project Strategic Framework in Section III of this Project Document.

Project Indicators and End-of-Project Targets

Indicator	End-of-Project Target
At Objective Level	
IW-1 Catalyze multi-state cooperation to balance conflicting water uses in transboundary surface/groundwater basins while considering climatic variability and change	1.1: Successful pilot projects testing innovative solutions involving linking ICM and IWRM and CC adaptation 1.2: National diagnostic analyses for ICM conducted for prioritizing and scaling-up key ICM/IWRM 1.3: Multi-stakeholder leader roundtable networks established for strengthened community to cabinet ICM/IWRM 3.1: National and regional strategic action framework for ICM/IWRM endorsed national and regionally 3.2: Coordinated approaches for R2R integrated land, water, forest and coastal management and for CC adaptation achieved in 14 PICs
IW-3 Support foundational capacity building, portfolio learning, and targeted research needs for ecosystem-based, joint management of transboundary water systems	2.1: National and local capacity for ICM and IWRM implementation built to enable best practice in integrated land, water, forest and coastal management and CC adaptation 2.2: Incentive structures for retention of local Ridge to Reef expertise and inter-governmental dialogue on human resource needs for ICM/IWRM initiated
At Outcome Level	
1.1 Number and quality of baseline environmental state and socio-cultural information incorporated in project area diagnostics	14 national pilot project area diagnostics based on R2R approach including: baseline environmental state and social data incorporating CC vulnerabilities; and local governance of water, land, forests and coasts reviewed
1.1.2 Stress reduction and water, environmental and socioeconomic status indicators <ul style="list-style-type: none"> • Municipal waste pollution reduction (N kg/yr) • Pollution reduction to aquifers (kg/ha/yr) • Area of restored habitat (ha) • Area of conserved/protected wetland • Area of catchment under improved management (ha) • Number of people engaged in alternative livelihoods • Status of mechanisms for PM&E 	14 national pilot projects test methods for catalyzing local community action, utilizing and providing best practice examples, and building institutional linkages for integrated land, forest, water and coastal management, and resulting in: <ul style="list-style-type: none"> • Municipal waste pollution reduction of 5,775 kg N/yr (6 sites) • Pollution reduction to aquifer of 23 kg N/ha/yr (2 sites) • 6,838 ha of restored habitat (4 sites) • 290 ha of conserved/protected wetland (2 sites) • 25,860 ha of catchment under improved management (7 sites) • 30 charcoal producers (40 % of total) engaged in alternative charcoal production activities • Participatory monitoring and evaluation of environmental and socioeconomic status of coastal areas (9 sites)

Number and quality of demonstration projects that have incorporated gender analysis as part of the community engagement plans	<ul style="list-style-type: none"> 14 national pilot projects demonstrate gender responsive implementation and results Direct national pilot project beneficiaries equitably shared
1.2.1 By end of the project, number of diagnostic analyses conducted for priority coastal areas	14 diagnostic analysis for ICM/IWRM and CCA investments conducted to inform priority areas for scaling-up in each of 14 participating PICs
1.2.2 Number and quality of ICM-IWRM investments incorporating baseline environmental state and socio-cultural information for the prioritization of investment sites	Up to 14 ICM-IWRM investments utilizing methodology and procedures for characterizing island coastal areas for ICM investment developed by the project
1.3.1 Number of local leaders and local governments engagement/ participating in multi-stakeholder leader roundtable networks	Institutional relationships between national and community-based governance structures strengthened and formalized through national Ridge to Reef+Inter-Ministry Committees in 14 Pacific SIDS
1.3.2 Number of forums held to discuss opportunities for agreements on private sector and donor participation in PIC sustainable development	Up to 14 new national private-sector and donor partnership forums for investment planning in priority community-based ICM/IWRM actions
2.1.1 Number of PIC-based personnel with post-graduate training in R2R management. *Data will be gender disaggregated	At least 10 people with post-graduate training in R2R management. *At least 5 people will be women
2.1.2 Number of community stakeholders (i.e. catchment management committees, CSOs, etc) engaged in R2R planning and CC adaptation activities	At least 14 community stakeholder groups (ie. Catchment management committees, CSOs, etc) engaged in R2R planning and CC adaptation activities.
2.2.1 Number of R2R personnel for which functional competencies are benchmarked, tracked and analyzed	Up to 14 R2R personnel identified, with functional competencies are benchmarked, tracked and analysed.
2.2.2 Number of recommendations on practitioner retention internalized at national and local government levels	At least 1 regional report with recommendations for R2R practitioner retention at national and local government levels completed. The report will analyse existing Public Service Commission salary scales and required functional competencies of key R2R (ICM/IWRM) personnel; appropriate guidelines and incentive structures for retention of local R2R expertise proposed.
3.1.1 Number of sectoral governance framework harmonised and strengthened through national and regional development frameworks	National recommendations for 14 PICs for coastal policy, legal and budgetary reforms for ICM/IWRM for integration of land, water, forest, coastal management and CC adaptation compiled and documented with options for harmonization of governance frameworks
3.1.2 Inter-ministerial agreements and strategic action framework for 14 PICs developed and submitted for endorsement on integration of land, water, forest and coastal management and capacity building in development of national ICM/IWRM reforms and investment plans	Agreements and strategic action frameworks for the 14 PICs endorsed by leaders
3.1.3 Number of demonstrable use of national State of the Coasts or State of the Islands reports in national and regional action planning for R2R investment	National State of the Coasts or State of the Islands reports for 14 PICs completed and launched to Pacific Leaders during National Coastal Summits (Yr 3) in coordination with national R2R projects and demonstrated as national development planning tool, including guidelines for diagnostic analyses of coastal areas
3.2.1 Number of networks of national R2R pilot project inter-ministerial committees formed and linked to existing national IWRM committees	Up to 14 national networks of R2R (ICM/IWRM) national pilot project inter-ministry committees formed by building on existing IWRM committees and contributing to a common results framework at the project and program levels
3.2.2 Number of people participating in inter-ministry committee (IMC) meetings conducted including scope and uptake of joint management and planning decisions	The number and variety of stakeholders participating in periodic IMC meetings in 14 PICS are doubled, with meeting results documented, participation data assembled and reported to national decision-makers and regional forums
3.2.3 Number of networks established between community leaders and local government from pilot projects	Community leaders and local government create at least 14 networks via national and regional round-table meetings complemented by community tech exchange visits

3.2.4 Number of inter-ministry committee members meeting within the 4 pilot PICs that is engaged in learning and change in perception through participatory techniques	At least 20 ICM members total from the 4 pilot PICs (sub-regional, mix of high island, atoll settings) gauge in learning, leading to change in perception through participatory techniques
4.1.1 Number and quality of national and regional indicator sets with the proposed targets and outcomes of the R2R program	1 simple and integrated national and regional reporting templates developed based on national indicator sets and regional framework to facilitate annual results reporting and monitoring from 14 PICs
4.1.2 Level of acceptance of the harmonized results tracking approach by the GEF, its agencies and participating countries	Unified/harmonized multi-focal area results tracking approach and analytical tool developed, endorsed, and proposed to the GEF, its agencies and participating countries
4.1.3 Number of National planning exercises in 14 Pac SIDS conducted with participants from relevant ministries with a mandate to embedding R2R results frameworks into national systems for reporting, monitoring and budgeting	Up to 14 national planning exercises in 14 PICs conducted with participants from relevant ministries with a mandate to embed R2R results frameworks into national systems for reporting, monitoring and budgeting
4.2.1 Regional communications strategy developed and number of partnership with media and educational organizations	Regional ridge to reef communications strategy developed and implemented and assistance provided to national R2R project including at least 10 partnerships with national and regional media and educational organizations
4.2.2 Number of IW:LEARN experience notes published	Participation in IW:LEARN activities: conferences; preparation of at least 10 experience notes and inter-linked websites
4.2.3 Number of users, volume of content accessed, and online visibility of the Pacific R2R Network	Pacific R2R Network established with at least 100 users registered, online regional and national portals containing among others, databases, rosters of national and regional experts and practitioners on R2R, register of national and regional projects, repository for best practice R2R technologies, lessons learned etc.
5.1.1 Program coordination unit recruited and staff retained	Functioning overall R2R program coordination unit with alignment of development worker positions contributing to coordinated effort among national R2R projects
5.1.2 Number of requests for regional-level support to national project delivery and management met by program coordination unit	5.1.2 Technical, operational, reporting and monitoring Unit is operational to provide support to national R2R projects, as may be requested by PICs, to facilitate timely delivery of overall program goals. At least 14 requests per year are met effectively.
5.1.3 Number of R2R staff trained resulting in effective results reporting and online information sharing	At least 14 R2R staff are trained (in harmonized reporting and monitoring and other regional and national and capacity building modules, among others) resulting in effective results reporting and online information sharing.
5.1.4 Volume and quality of information and data contributed by program stakeholders to online repositories	At least 4 quality information and/or data contributed/ updated per year (total of at least 16 throughout the project) to the online repository, as a result of support provided to PICs for the development and operation of the Pacific R2R Network and regional with national R2R web pages as a repository of information, documentation and for sharing best practices
5.1.5 Number of planning and coordination workshops conducted for national projects teams to ensure timeliness and cost-effectiveness of IW pilot project and STAR project coordination, delivery and reporting	At least 4 (1 per year) planning and coordination workshops conducted for national project teams in the Pacific R2R network

167. Risks that could affect the success of the project's objectives are outlined in the table below with their rating and the project's responses. The project's achievements will depend on a number of factors, but paramount will be the availability, development and retention of capacity. This is recognized in the design and project funding and the experience gained in the successful delivery of the IWRM project is proof of concept. Likewise government and community stakeholder participation in decision-making processes and ongoing application is a condition of sustainability and the project has adopted the successful 'community to Cabinet' approach

developed within the previous GEF Pacific IWRM Project. Whilst the Ridge to Reef approach and its requirement for integration is relatively new Pacific island communities were traditionally integrating resource utilization with a whole of island approach. The project will seek to build on this to help ensure governments mainstream integration through ICM. Many Pacific communities deal with climatic and anthropogenic impacts on water and food security and therefore communities are receptive to improving the sustainability of community use of water, land and coastal resources in order to improve their resilience and the pilots will therefore be maintained at a community level. The PICs are attuned to the impacts of climate change even though the extent and rate of change is still uncertain. PICs have set in place at executive government level monitoring and advocacy mechanisms to manage as best they can the environmental and socioeconomic impacts of climate change and these mechanisms will provide support for the project's objective of improving the management on a R2R basis to enable adaptive strategies that increase resilience to climate change.

Risk	Rating Impact/ Probability (1)	Response
Capacity Limits of PICs institutional and human resources	I=3 P=5	Capacity determines implementation scope and pace. Project design recognizes this and there are several innovative approaches proposed to promote rapid learning whilst doing. This approach was successfully demonstrated in the PacIWRM project and the current proposal progresses the approach still further. A significant lesson learnt in the PacIWRM was the value of a technically strong and supportive regional PCU that is able to assist and mentor national counterparts this lesson has been recognized in the design of the complement of staff in the PCU.
Continued political will and capacity of the PICs at different levels to remain committed / involved in the further integration of water, land and coastal management.	I=3 P=2	The engagement of the regional and sub-regional organizations reduces the risk of a failure to engage at a national level. The PacIWRM has successfully established functional inter-ministerial committees, which can readily be expanded to include a higher level of representation from institutions responsible for Land and Coastal management. In many instances these agencies are already represented but their status needs to be increased. The Project design emphasizes leadership development and awareness to drive high-level support.
R2R is accepted at a National Level as a legitimate coordination framework for a multi focal area approach to demonstrate integrated water, land and coastal management	I=3 P=2	The R2R concept is not entirely new in many of the countries where PacIWRM has watershed based demonstration projects. But R2R is in general not well understood and the project design addresses this through investing significantly in public education and awareness approaches to rapidly develop a fundamental knowledge of the concept and to garner widespread support. This approach has proved successful in the PacIWRM project.
Successful adaptation demonstration not sustained or scaled up due to a lack of financial resources	I=3 P=2	There are many opportunities presented by climate change financing mechanisms to develop sustainable financing arrangements for PICs, In addition appropriately valued coastal environmental service supporting food security, tourism and blue carbon have the potential to yield sustainable financing opportunities
ICM is recognized as being multi-sector and involve the whole of community	I=2 P=2	A community to cabinet and back approach will be fostered at all levels of project development and implementation so as to ensure multi-sector and full community participation. This combined with timely and targeted media awareness campaigns will minimize the risk of sector silos developing.
Communities and wider stakeholders are willing to participate in Policy development and Demonstration projects;	I=2 P=1	The lesson learnt from PacIWRM is that early engagement with community in diagnostic analysis assists in building local level ownership that is readily maintained into project design and implementation provided effective and genuine collaboration is developed. This project design establishes the same proven approach and therefore the risk is viewed as low.

<p>Civil society is concerned about water, land and coastal management;</p>	<p>I=2 P=1</p>	<p>Civil Society attitudes are important drivers of leadership response. The project design has adopted a push pull approach to achieving change. By targeting leadership at National and Community levels plus the delivery of well-resourced public education and awareness campaigns sufficient energy should be created to ensure acceptance of the need to effectively manage water, land and coasts.</p>
<p>Effects of Climate Change on water, land and coast and the effectiveness of measures</p>	<p>I=2 P=5</p>	<p>Climate change could substantially affect vulnerable water, land and coasts. The project has as a specific focus improving the management on a R2R basis to enable adaptive strategies that increase resilience to climate change. Attention is being given to promoting ecosystem services for resilience. Climate change will only demonstrate the need for appropriate adaptive responses that strengthen R2R resilience.</p>

2.5 STAKEHOLDERS AND COORDINATION ARRANGEMENTS

168. This project will link directly into the very strong stakeholder relationships built by the PacIWRMs Community to Cabinet and back approach. Functional participation by community and its leaders at local project level and National Policy level has been established and are operational. These will be used to develop the national project documents and pilot projects. The focus on extending the diagnostic analysis to the coast and its characterization relies implicitly on local stakeholder knowledge.
169. The primary stakeholders for the project are the 14 governments of the PICs (particularly institutions dealing with water, land and coastal management, environment, Disaster Risk Management and Climate Change) and communities within the R2R pilot demonstration projects. The lessons learnt will however eventually benefit all SIDS globally. There will also be global benefits as the project will seek through innovative approaches to coordinate multifocal area approaches within a R2R framework and to use demonstrated local benefits to progress national level policy reform and action. As an integrated project private and public sectors will also participate and benefit and this will include tourism, agriculture, fisheries, health, environmental and other locally selected industries. The private sector partnerships will be developed at local level demonstration projects to initiate a high level of involvement and collaboration with the private sector at the earliest stages of project development and implementation, based on supporting countries to identify where private sector engagement and support can occur.
170. The NGO community will have a significant stakeholder role in promoting awareness of water, land and coastal management and use issues and concerns, especially in demonstration project areas and in presenting the linkages both to social development and to sustainable, ecosystem-based management. NGOs have already been actively involved in partnering with National GEF Pacific IWRM demonstrations providing additional resources to local communities and facilitating the development of community leadership. IUCN is a partner of the GEF Pacific IWRM project in several demonstration projects and will play a still larger role in the proposed project. The NGO and CBOs will participate in the development of local demonstration projects and in the governance of these at both local and national levels. At the local/demonstration site level, the Project will focus on community involvement for watershed and coastal resource management, including ICM, and will also look at the capacity building requirements at this level. The communities and livelihoods will benefit from improvements in resource management and the sustainable maintenance of water quality, both with regard to their living environment as well as their health and welfare. Capturing traditional knowledge and practices will be important as an entry vehicle to addressing land ownership and rights to water, land and inshore marine resources.
171. This proposed regional project is intended to be the program support project for the Ridge-to-Reef program Pacific Islands Ridge to Reef National Priorities - Integrated Water, Land, Forest and Coastal Management to Preserve Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods. The project is expected to coordinate the implementation of the national R2R projects in terms of capacity building, knowledge management and harmonization of technical methodologies in integrated management of forest, land and water management. National level inter-ministerial committees will be the major vehicles for

coordination at a National level and also funnel nationally acquired knowledge through to sub-regional and regional meetings. They will have an important role in monitoring UNEP's Regional project to promote forestry and protected area management in Fiji, Niue, Vanuatu and Samoa under GEF's Pacific Alliance for Sustainability programme which will be still under implementation at the same time with this proposed project. Coordinating these along with the UNDP, UNEP and FAO National GEF System for Transparent Allocation of Resources (STAR) Pacific Projects will be a vital to the success of R2R as mentioned in the preceding paragraph.

172. The recently closed GEF/UNDP/UNEP GEF Pacific IWRM project has established close linkages with the GEF/UNDP/UNEP Implementing Integrated Water Resource and Wastewater Management in Atlantic and Indian Ocean PICS and the recently completed GEF/UNDP/UNEP Integrating Watershed and Coastal Area Management (IWCAM) in the Small Island Development States (PICS) of the Caribbean to reflect more than 30 PICS globally. This project will maintain and grow these linkages including via the successor GEF/UNEP/UNDP project to IWCAM, IW-ECO. Coordination will occur during implementation with other related UNDP/GEF projects including Pacific Adaptation to Climate Change (PACC), Implementation of the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) and Mainstreaming of Sustainable Land Management (SLM) for Least Developed Countries (LDCs) and Small Island Developing States (PICS) will done through UNDP's Asia and Pacific Regional Office.

173. The ADB/GEF Strengthening Coastal and Marine Resources Management in the Coral Triangle of the Pacific (Phase II) provides significant opportunities in piloting the integration of coastal and inshore management within the R2R approach and capturing those benefits will be important in the CTI Participating PICs. The Melanesian Spearhead Group's Annual Environment/Climate Change Ministers and Senior Officials Meeting enables high level coordination and integration of these. The project will be implemented in close coordination with other regional projects that are also being executed by SOPAC/SPC, upon which this project builds on. Execution of the regional project through the SOPAC Division of SPC ensures the closest possible coordination of project and co-financed activities with other regional SPC work programmes, in Disaster Risk Management, Oceans and Islands, Water and Sanitation, Sustainable Land Use, Coastal Fisheries, Climate change and Education. The integration and coordination of these at a national level is through an agreed Joint Country Strategy Programme which is a periodically developed and agreed as integrated strategic action plans between each Member PIC and SPC. The annual Committee of Representatives of Governments and Administrations (CRGA) meeting provides regional coordination and review. This process includes close coordination of project activities with the activities of other donor funded projects.

174. Major Stakeholder Mapping

Stakeholder	Project Implementation Roles
<p>A. National Government Agencies</p> <ul style="list-style-type: none"> • Cook Islands: Ministry of Infrastructure and Planning • FS Micronesia: Kosrae Island Resource Management Authority • Fiji: Land and Water Resource Management Division of the Ministry of Primary Industry • Kiribati: Ministry of Public Works and Utilities • Marshall Islands: The Republic of the Marshall Islands Environmental Protection Authority (RMIEPA) • Nauru: Ministry of Commerce, Industries and Resources (CIR) • Niue: Department of Environment • Palau: Office of Environmental Response and Coordination (OERC) • Papua New Guinea: Department of Environment and Conservation • Samoa: Ministry of Natural Resources and Environment • Solomon Islands: Ministry of Environment, 	<p>National Implementing Partners of National Activities and Pilot Projects</p>

<p>Conservation and Meteorology</p> <ul style="list-style-type: none"> • Tonga: Ministry of Lands, Survey, Natural Resources and Environment • Tuvalu: Department of Environment - Ministry of Natural Resources, Energy and Environment • Vanuatu: Ministry for Climate Change Adaptation, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management 	
<p>B. NGOs</p> <p>International Union for Conservation of Nature (IUCN)</p> <p>Pacific Islands News Association</p> <p>Live and Learn</p> <p>Pacific Water & Wastes Association (PWA)</p> <p>Pacific Islands Association of Non-Governmental Organisations (PIANGO).</p> <p>Pan Pacific and Southeast Asia Women's Association (PPSEAWA)</p> <p>Pacific Foundation for the Advancement of Women (PACFAW)</p> <p>Pacific Youth Council</p>	<p>National level programme partner and member of the Regional Science and Technology Committee</p> <p>Regional organisation representing the interests of media professionals in the Pacific region. It links radio, television, newspapers, magazines, online services, national associations and journalism schools in 23 Pacific Island will assist Project in coordination of R2R messaging at national level</p> <p>National Level Environmental Education and Awareness</p> <p>The membership comprises Pacific Island water and wastewater utilities as well as international water authorities, private sector equipment and services supply companies, contractors and consultants assisting the project in coordinating National NGO participation in Pilot R2R Projects</p> <p>Regional network of National NGO focal points based in 22 Pacific Island countries and territories assisting the project in coordinating National NGO participation in Pilot R2R Projects</p> <p>Will assist the project to promote cooperation among the women of the pacific region.</p> <p>Regional organisation that will assist the project in advocacy and coordination of activities for the advancement of women in the Pacific.</p> <p>Regional non-governmental youth organisation that will assist the project in advocacy and coordination of National Youth Councils across the Pacific region</p>
<p>C. Private Sector</p> <p>Pacific Islands Private Sector Organisation (PIPSO)</p>	<p>The premier private sector representative body in the Pacific Islands region organisation that will assist the project in advocacy and coordination its members which is comprised of the national private sector organisations of the 14 Forum Pacific Island Countries</p> <p>Note: More specific listing of private sector stakeholders by country is in Annex 6.</p>
<p>D. Academic organizations:</p> <p>University of the South Pacific (USP) University of Papua New Guinea (UPNG) University of Guam University of Hawaii International Water Center (IWC)</p>	<p>Partners in projects capacity building component and resource for scientific and technical support.</p>
<p>E. GEF Agencies in the R2R Program:</p> <p>United Nations Development Programme (UNDP)</p>	<p>Project Implementing Agency and IA for National STAR R2R Projects for FSM, Tuvalu, Samoa, Tonga, Niue, Cook</p>

Food and Agriculture Organisation (FAO)	Islands, Vanuatu, Nauru, PNG, Fiji. IA for National STAR R2R Projects for Solomon Islands, Kiribati and Tonga
United Nations Environment Programme (UNEP)	IA for National STAR R2R Projects for Palau and Marshall Islands
United Nations Educational, Scientific and Cultural Organization (UNESCO)	Groundwater associated activities at a National Level
United Nations Children's Fund (UNICEF)	National level partner in WASH associated Activities
F. Multilateral organizations Asian Development Bank	IA for the Coral Triangle and National Level Infrastructure developments invited participant at Annual RSC
World Bank	IA for several regional Disaster Risk Management and Building Climate Change Resilience will continue cooperative partnership established in the IWRM Project
European Union (EU)	Development partner for National Level Infrastructure developments invited participant at Annual RSC.
G. Pacific Regional Organisations Secretariat of the Pacific Regional Environment Programme (SPREP)	Cooperative partner in the joint Disaster Risk Management and the Pacific Climate Change strategy. Invited participant at Annual RSC

2.6 FINANCIAL MODALITY

175. This is a GEF grant co-financed project for which UNDP is the Implementing Agency and SPC's Applied Geoscience and Technology Division (SOPAC) as the regional Executing Agency (UNDP Implementing Partner). Financial management of the GEF grant is the responsibility of UNDP. It will manage the funds in accordance with UNDP financial rules and regulations, monitor expenditures and maintain fiscal oversight of all expenditures.

2.7 COST-EFFECTIVENESS

176. The Ridge to Reef multi-focal, multi-Trust Fund, multi-Agency Program encompasses an integrated cross sectoral environmental management approach that is ideally suited to the unique scale and climatic challenges of the PICs but also provides the most cost-effective delivery mechanism in a capacity challenged region. Through a cohesive programmatic approach, synergies with existing and emerging projects at regional, subregional, national and local levels can be achieved and a more cost-effective and expansive engagement with stakeholders assured. This management approach will also reduce duplication and overlap thereby increasing project value. The project will be able to coordinate delivery, reporting and lessons learned to more cost-effectively transfer knowledge inter and intra nationally improving project outcomes and reducing environmental stress.

177. As the recently completed GEF Pacific IWRM Project was able to establish functional national Inter-ministerial committees, local demonstration project steering committees and project management units this project can build on these already established governance and management structures to be more cost-effective in its implementation through a more rapid project start and delivery. Another successful strategy of the GEF Pacific IWRM Project was the efficient use of the Annual Regional Steering Committee Meetings as noted in the that project's terminal evaluation. RSC meetings placed great emphasis on turning ProDoc ambitions into regional and country strategies and plans, including country demonstration logframes, and country and regional M&E, communication and engagement strategies. Subsequent RSC meetings were used to not only report on progress, but to enact responses to issues of timeliness where these arose. In many cases the RSC meetings were used to expedite the development of

strategies and activities under closer PCU and regional peer scrutiny and assistance.+ The proposed project will adopt these cost-effective and efficient strategies.

178. The unique counterpart support provided through the project will be cost effective due to economies of scale as the SPC based project provides technical services to 14 dispersed PICs and an effective extension and support of a Pacific Ridge to Reef Network. This will provide the foundation for a cost-effective simplified shared system of reporting.
179. The regional education programme will be cost-effective as the contact requirements will be met on the fringes of the regional and subregional meetings ensuring that participation becomes a marginal cost. At the national and local level, vocational training programme cost-effectiveness will be achieved through the sharing of the programmes across 14 PICs.

2.8 REPLICATION, SCALING-UP AND MAINSTREAMING

2.8.1 Replication

180. The definitions of *replicate*+ contained in the Cambridge and Oxford dictionaries are *to make or do something again in exactly the same way*+ and *to copy something exactly*+, respectively. Interpretation of these definitions in the context of activities of the Ridge to Reef programme, may include for example the application of a copy of a successful watershed management model, approach, strategy, technology, or communications tool within a particular watershed or at another location. Accordingly, replication is defined in the context of activities of the Ridge to Reef programme as *the activity of copying the specific features of a management approach or measure that made it successful in one setting and re-applying these as part of the process of establishing and operating integrated Ridge to Reef management in the same or another setting*+. Examples may include, inter alia, using the structure and ToR for a community-based management committee at one site and applying it to another, or using a fishing practice or gear type that was successful in reducing the capture of juvenile fish in areas of sensitive blue-forest ecosystems and applying it at another site.

2.8.2 Scaling-up

181. Scaling-up: Regarding scaling-up, definitions of *scale*+ contained in the Cambridge and Oxford dictionaries are *the size or level of something*+ and *the size or extent of something, especially when compared with something else*+, respectively. Interpretation of these definitions in the context of activities of the Ridge to Reef programme, may include for example increasing the institutional scale of management by applying an activity involving a small subset of community at the whole community level, or increasing the geographical scale of activities by applying a best practice in integrated management generated at one priority site to the whole of province or region level. Accordingly, scaling-up is defined for the purpose of the Ridge to Reef programme as *the activity of increasing the impacts of successful approaches to integrated Ridge to Reef management via their application at broader geographic and institutional scales as part of the process of integrating land, water, forest and coastal management in PICs*+

2.8.3 Developing a National Replication and Scaling-up Plan for IW R2R

182. The above definitions of replication and scaling-up lend themselves to ease of application to the integration of land, water, forest and coastal management in PICs. The high levels of dependence of coastal areas for livelihoods and the inherent risks associated with island vulnerabilities, creates a high need for the generation of best practices that can be replicated and scaled-up. Communicated effectively, success stories can create a demand driven approach whereby communities actively seek opportunities to apply proven technologies and management models in their communities. The high profile of land, water, and coastal issues in island communities, coupled with the limited policy and legal frameworks for the integration of management, creates significant opportunities for the successful uptake of best practices and lessons learned.
183. Specific areas of learning and best practices identified for replication and scaling-up as part of Ridge to Reef planning in PICs include: stakeholder engagement; cross-sectoral coordination; evidence-based planning; application of management models and strategies; use of locally

appropriate environment and water resource stress reduction technologies and measures; communications and awareness; and political commitment. Lessons learned and best practices in these areas will be tracked on annual basis and used to prepare a replication and scaling-up plan.

2.8.4 Mainstreaming

184. The definitions of *mainstream* contained in the Cambridge and Oxford dictionaries are *considered normal, and having or using ideas, beliefs, etc which are accepted by most people* and *the ideas and opinions that are thought to be normal because they are shared by most people; the people whose ideas and opinions are most accepted*, respectively. Interpretation of these definitions in the context of activities of the Ridge to Reef programme, may include for example the Ridge to Reef guiding principles outlined at sub-section 2.3 becoming *normal* or *mainstream* in how individuals, agencies, and organisations responsible for the planning and financing of land, water, forest and coastal management, including climate change adaptation. Accordingly, mainstreaming is defined in the context of activities of the Ridge to Reef programme as *A service function of the process of integrating land, water, forest and coastal management which involves making the Ridge to Reef guiding principles central to the work of governments and communities in efforts to build island resilience and sustainability*. National level mainstreaming efforts will in large be supported via targeted communications, awareness raising, and networking via the operation of national and local level coordinating bodies for Ridge to Reef. The extent of national level mainstreaming generated will be benchmarked and tracked according to (1) the extent of harmonisation of sectorial policies and legislation; and (2) the streamlining of government agency expenditure on land, water, forest and coastal management at priority sites. This information will be used to guide the longer-term replication and scaling-up of the Ridge to Reef approach in PICs

2.9 PUBLIC AWARENESS AND COMMUNICATIONS

185. Specific public awareness and communications activities will be guided by the regional communications strategy to be developed as part of **Outcome 4.2** which involves, inter alia, strengthening the role of communications and the media in integrating water and coastal management in Pacific Island Countries through the Public-Private partnership between Oceania Television and the GEF Project Coordinating Unit of the Secretariat of the Pacific Community. The effectiveness of this partnership will be strengthened via the creation of a network of PIC based media outlets for the national and regional level syndication Ridge to Reef programme news and media products. This will be complemented via the establishment and operation of web-based *Pacific R2R Network* to strengthen cross-sectoral and multi-lateral communication and knowledge management.

2.10 SUSTAINABILITY

186. This project builds on experiences of GEF's past and present portfolio of international waters projects in the Asia-Pacific to develop island style approaches to integrated R2R management. The proposed pilot projects will build on achievements and lessons learned from the GEF Pacific IWRM projects to expand the focus of national IWRM demonstration projects from freshwater and sanitation issues to broader land and coastal issues associated with climate and hazards management, coastal *blue forests* and livelihoods. Successes of national IWRM approaches will be replicated in selected outer island communities, particularly atoll environments where water security and good governance of scarce groundwater resources are critically important. The active linkage of these pilot projects with national STAR projects within a R2R framework aims to facilitate inter-sector cooperation on: building and retaining capacity; coastal policy reform; and coordination of results monitoring and knowledge management. The networking of R2R project managers and community leaders associated with pilot and STAR projects will support inter-country and multi-lateral sharing of best practice in ICM and IWRM in PICs.
187. The establishment and operation of community leaders' roundtable network will assist to strengthen and formalize relationships between national and community governance structures. Similarly, the network will provide a platform for engagement with donors and the private sector on planning investment in priority community-based ICM actions, and will provide an avenue for strengthened cooperation with the GEF Small Grants Programme on civil society and community organization. Best practice community level inputs to ICM will be identified, documented, and

shared regionally and globally among PICS and GEF IW:LEARN. Innovative planning methodologies and procedures will be developed to characterize and prioritize island coastal areas for ICM investment and demonstrated as national development planning tools. Information and data outputs will be used to build on the National Water, Sanitation and Climate Outlook reports developed by GEF Pacific IWRM to utilize as a capacity building and transparency tool the diagnostic analysis of coasts which will be reflected in national State of the Coasts reports.

188. The innovative approaches to island-based investments in human capital developed by GEF Pacific IWRM will be built upon by targeted knowledge consolidation and support activities aimed at further preparing local institutions of ICM. An expanded post-graduate training programme in Integrated Water and Coastal Management will be complemented by a technical support and mentoring program aimed at facilitating post-graduate research student and volunteer placements within national R2R units. An innovative initiative aimed at meeting ICM capacity retention needs will also be initiated. Supporting regional networks of national land, water and coastal experts will be established to support the development of knowledge tools to support evidence based planning ICM planning and IWRM implementation. These knowledge tools will be applied to conduct evidence-based ICM planning exercises with national planning and finance ministries, the findings of which will be documented and presented to national leaders and regional fora.
189. Innovative financing mechanisms and tools will be incorporated at National levels to build financial sustainability of demonstrated adaptations and livelihoods. These include new and emerging climate change mechanisms, and how these could be used to enhance synergistic implementation of the Rio Conventions and increase the capacity of participating countries to identify and mobilize potential financial resources through climate change financing mechanisms. Tools to value coastal ecosystem conservation through blue carbon initiatives and to ensure long-term sustainability of coastal areas and green economic development whilst effectively mitigating climate change. Extending the GEF Pacific IWRM payment for ecosystem services approach to coastal and marine habitats is importance for food security and tourism in PICS.
190. Regarding the sustainability of activities and components beyond the life of the project, it should be noted that a number of the proposed activities during the first three years of the project are aimed at testing the ability of PICS to develop ICM approaches and link these to existing IWRM. The need for such actions reflects the inadequacy of the present institutional, human capacity, scientific and technical, and policy settings to realize integrated approaches to land, water and coastal management. It also reflects recognition of the need for implementation of the IWRM Plans developed through the GEF Pacific IWRM to take place within a broader framework of R2R ICM. Each of the proposed actions has been developed with the view to their larger scaling-up as part of ICM and IWRM implementation post project. Consequently, several components will close within 36-40 months to allow proper evaluation and to provide incentives for those PICS that make excellent progress to fully scale up R2R within multiple focal areas with a larger GEF IW contribution in GEF 6. The full regional project will last 60 months in order to allow the coordination component with national STAR projects and the indicators work to link until closing.

3 PROJECT RESULTS FRAMEWORK

<p>Project Title: Testing the Integration of Water, Land, Forest and Coastal Management to Preserve Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods in Pacific Island Countries</p>
<p>UNDP Strategic Plan Environment and Sustainable Development Primary Outcome: Outcome 2; Output 2.5 . Legal and regulatory frameworks, policies and institutions enabled to ensure the conservation, sustainable use and access and benefit sharing of natural resources, biodiversity and ecosystems in line with international conventions and national legislation; Output 2.5.2</p>
<p>UNDP Strategic Plan Secondary Outcome: Outcome 1: Output 1.4 . Scaled up action on climate change adaptation and mitigation across sectors which is funded and implemented: Ouput 1.4.2.</p>
<p>Applicable GEF Strategic Objective and Program: International Waters Strategic Objective 1; and Strategic Objective 3</p>
<p>Project Objective: To test the mainstreaming of ridge-to-reef(R2R), climate resilient approaches to integrated land, water, forest and coastal management in the PICs through strategic planning, capacity building and piloted local actions to sustain livelihoods and preserve ecosystem services</p>
<p>Objective Indicator: Extent of harmonization of sectoral governance frameworks for integrated ridge to reef approaches achieved through national sustainable development planning</p>
<p>Applicable GEF Expected Outcomes:</p> <p>Component 1. National Demonstrations to Support R2R ICM/IWRM Approaches for Island Resilience and Sustainability <i>Outcomes:</i></p> <ul style="list-style-type: none"> 1.1 Successful pilot projects testing innovative solutions involving linking ICM, IWRM and climate change adaptation [linked to national STAR projects via larger Pacific R2R network] 1.2 National diagnostic analyses for ICM conducted for prioritizing and scaling-up key ICM/IWRM reforms and investments 1.3 Community leader roundtable networks established for strengthened community to cabinet ICM/IWRM <p>Component 2. Island-based Investments in Human Capital and Knowledge to Strengthen National and Local Capacities for Ridge to Reef ICM/IWRM approaches, incorporating CC adaptation <i>Outcomes:</i></p> <ul style="list-style-type: none"> 2.1 National and local capacity for ICM and IWRM implementation built to enable best practice in integrated land, water, forest and coastal management and CC adaptation 2.2 PIC knowledge on climate variability, coastal area planning in DRM, integrating blue forest and coastal livelihoods consolidated and shared to support evidence-based coastal and marine spatial planning 2.3 Incentive structures for retention of local Ridge to Reef expertise and inter-governmental dialogue on human resource needs for ICM/IWRM initiated <p>Component 3. Mainstreaming of Ridge to Reef ICM/IWRM Approaches into National Development Planning <i>Outcomes:</i></p> <ul style="list-style-type: none"> 3.1 National and regional strategic action frameworks for ICM/IWRM endorsed nationally and regionally 3.2 Coordinated approaches for R2R integrated land, water, forest and coastal management and CC adaptation achieved in 14 PICs 3.3 Physical, natural, human and social capital built to strengthen island resilience to current and emerging anthropogenic threats and climate extremes <p>Component 4. Regional and National 'Ridge to Reef' Indicators for Reporting, Monitoring, Adaptive Management and Knowledge Management <i>Outcomes:</i></p> <ul style="list-style-type: none"> 4.1 National and regional formulation and adoption of integrated and simplified results frameworks for integrated multi-focal projects 4.2 National and regional platforms for managing information and sharing of best practices and lessons learned in R2R established

Component 5. Ridge-to-Reef Regional and National Coordination
Outcomes:
 5.1 Effective program coordination of national and regional R2R projects

*Gender specific indicators.

Component 1 National Demonstrations to Support R2R ICM/IWRM Approaches for Island Resilience and Sustainability
Outcome 1.1 Successful pilot projects testing innovative solutions involving linking ICM, IWRM and climate change adaptation [linked to national STAR projects via larger Pacific R2R network]

Components	Outcomes	Indicator(s)	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
1. National Demonstrations to Support R2R ICM/IWRM Approaches for Island Resilience and Sustainability	1.1 Successful pilot projects testing innovative solutions involving linking ICM, IWRM and climate change adaptation [linked to national STAR projects via larger Pacific R2R network]	1.1.1 Number and quality of baseline environmental state and socio-cultural information incorporated in project area diagnostics	1.1.1 Baseline environmental and social data is unconsolidated	1.1.1 14 national pilot project area diagnostics based on R2R approach including: baseline environmental state and social data incorporating CC vulnerabilities; and local governance of water, land, forests and coasts reviewed	1.1.1 Pilot area diagnostic reports published online	1.1.1 Data and information required to conduct diagnostic analyses may not be shared by local government agencies
		1.1.2 Stress reduction and water, environmental and socioeconomic status indicators <ul style="list-style-type: none"> • Municipal waste pollution reduction (N kg/yr) • Pollution reduction to aquifers (kg/ha/yr) • Area of restored habitat (ha) • Area of conserved/protected wetland • Area of catchment under improved management (ha) 	1.1.2 Limited community and cross-sectoral participation in the planning of coordinated investments and stress reduction efforts in land, forest, water and coastal management in PICs. <i>(Baseline for water, environmental and social economic status indicators for municipal waste pollution, pollution to aquifers, areas of restored habitat, area of</i>	1.1.2 14 national pilot projects test methods for catalyzing local community action, utilizing and providing best practice examples, and building institutional linkages for integrated land, forest, water and coastal management, and resulting in: <ul style="list-style-type: none"> • Municipal waste pollution reduction of 5,775 kg N/yr (6 sites) • Pollution reduction to aquifer of 23 kg N/ha/yr (2 sites) 	1.1.2 Reports of community and sectoral participation in the planning, execution, and monitoring and evaluation of pilot activities, including annual reports on effectiveness of stress reduction measures Project Implementation Reports, Mid-term and Terminal Evaluation Reports	1.1.2(a) Development pressures may result in adoption or revision of land-use policies by national or local governments which are incompatible with activities at pilot sites 1.1.2 (b) Challenges and costs associated with demonstrating environmental stress reduction benefits of technologies and management measures may

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

Components	Outcomes	Indicator(s)	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
		<ul style="list-style-type: none"> Number of people engaged in alternative livelihoods Status of mechanisms for PM&E Number and quality of demonstration projects that have incorporated gender analysis as part of the community engagement plans 	conserved/protected wetland, area of catchment under improved management, and number of people engaged in alternative livelihoods, will be obtained at project start.)	<ul style="list-style-type: none"> 6,838 ha of restored habitat (4 sites) 290 ha of conserved/protected wetland (2 sites) 25,860 ha of catchment under improved management (7 sites) 30 charcoal producers (40 % of total) engaged in alternative charcoal production activities Participatory monitoring and evaluation of environmental and socioeconomic status of coastal areas (9 sites) 14 national pilot projects demonstrate gender responsive implementation and results Direct national pilot project beneficiaries equitably shared 		<p>constrain replication and upscaling</p> <p>1.1.2 (c) Sufficient commitment from Pacific leaders to address gender issues and promote mainstreaming.</p>

Outcome 1.2 National diagnostic analyses for ICM conducted for prioritizing and scaling-up key ICM/IWRM reforms and investments

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
1. National Demonstrations to Support R2R ICM/IWRM Approaches for Island Resilience and Sustainability (<i>cont.</i>)	1.2 National diagnostic analyses for ICM conducted for prioritizing and scaling-up key ICM/IWRM reforms and investments	1.2.1 By end of the project, number of diagnostic analyses conducted for priority coastal areas	1.2.1 Choice of sites for GEF and other donor investment in natural resource and environmental management does not adequately represent the range of biological, environmental and	1.2.1 14 diagnostic analysis for ICM/IWRM and CCA investments conducted to inform priority areas for scaling-up in each of 14 participating PICs	1.2.1 Diagnostic reports for priority coastal areas published	1.2.1 Data and information required to conduct site characterizations of coastal areas may not be shared by relevant sectoral agencies or other institutions

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
			socio-economic conditions in PICs			
		1.2.2 Number and quality of ICM-IWRM investments incorporating baseline environmental state and socio-cultural information for the prioritization of investment sites	1.2.2 Lack of a scientifically sound and objective procedure for the selection of locations for investment in integrated natural resource and environmental management in PICs	1.2.2 Up to 14 ICM-IWRM investments utilizing methodology and procedures for characterizing island coastal areas for ICM investment developed by the project	1.2.2 Regional guidelines for characterizing and prioritizing coastal areas for ICM investment prepared	1.2.2 Engaging appropriate expertise to facilitate consensus on the selection of physical, biological and social variables to be used in characterization of PIC coastal areas

Outcome 1.3 Multi-stakeholder leader roundtable networks established for strengthened community to cabinetqICM/IWRM

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
1. National Demonstrations to Support R2R ICM/IWRM Approaches for Island Resilience and Sustainability (<i>cont.</i>)	1.3 Multi-stakeholder leader roundtable networks established for strengthened community to cabinetq ICM/IWRM	1.3.1 Number of local leaders and local governments engagement/ participating in multi-stakeholder leader roundtable networks	1.3.1 Limited engagement of community-based governance mechanisms in national policy and planning	1.3.1 Institutional relationships between national and community-based governance structures strengthened and formalized through national Ridge to Reef+Inter-Ministry Committees in 14 Pacific SIDS	1.3.1 Reports of multi-stakeholder leader network activities	1.3.1 Existing tensions between land-owners and government agencies may limit community leader participation
		1.3.2 Number of forums held to discuss opportunities for private sector and donor participation in PIC sustainable development	1.3.2 Low level mobilization of the private sector in environmental investment and planning in PICs	1.3.2 Up to 14 new national private-sector and donor partnership forums for investment planning in priority community-based ICM/IWRM actions	1.3.2 Reports of private sector and donor partnership forums	1.3.2 Limited private sector presence, or alignment of donor investment strategies with proposed actions, at priority R2R locations

Component 2 Island-based Investments in Human Capital and Knowledge to Strengthen National and Local Capacities for Ridge to Reef ICM/IWRM approaches, incorporating CC adaptation

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

Outcome 2.1 National and local capacity for ICM and IWRM implementation built to enable best practice in integrated land, water, forest and coastal management and CC adaptation

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
2. Island-based Investments in Human Capital and Knowledge to Strengthen National and Local Capacities for Ridge to Reef ICM/IWRM approaches, incorporating CC adaptation	2.1 National and local capacity for ICM and IWRM implementation built to enable best practice in integrated land, water, forest and coastal management and CC adaptation	2.1.1 Number of PIC-based personnel with post-graduate training in R2R management. *Data will be gender disaggregated	2.1.1 Zero R2R post-graduate training courses available specific to the Pacific Region.	2.1.1 At least 10 people with post-graduate training in R2R management. *At least 5 people will be women At least 3 innovative post-graduate training programs for the Pacific Region in ICM/IWRM and related CC adaptation delivered for project managers and participating stakeholders through partnership of internationally recognized educational institutes and technical support and mentoring program with results documented	2.1.1 Agreed curricula and materials for post-graduate training program published	2.1.1 Internationally recognized institute (or consortium) able to deliver a cost-effective post-graduate training course which is both accredited and regionally appropriate
		2.1.2 Number of community stakeholders (i.e. catchment management committees, CSOs, etc) engaged in R2R planning and CC adaptation activities	2.1.2 Limited national and local capacity for ICM and IWRM implementation constrains achievement of best practice in integrated management in PICs	2.1.2 At least 14 community stakeholder groups (ie. Catchment management committees, CSOs, etc) engaged in R2R planning and CC adaptation activities. *Number of trainings (including training on integrating gender into	2.1.2 Community training materials compiled and published online	2.1.2 Adequate resourcing from national STAR projects available to support STAR project stakeholder participation in training and capacity building activities

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
				community level R2R and CC planning and implementation) conducted to build capacity for civil society and community organization participating in ICM/IWRM and CC adaptation strengthened through direct involvement in implementation of demo activities with results documented		

Outcome 2.2 Incentive structures for retention of local Ridge to Reef expertise and inter-governmental dialogue on human resource needs for ICM/IWRM initiated

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
2. Island-based Investments in Human Capital and Knowledge to Strengthen National and Local Capacities for Ridge to Reef ICM/IWRM approaches, incorporating CC adaptation (<i>cont.</i>)	2.2 Incentive structures for retention of local Ridge to Reef expertise and inter-governmental dialogue on human resource needs for ICM/IWRM initiated	2.2.1 Number of R2R personnel for which functional competencies are benchmarked, tracked and analyzed Number of studies completed identifying the national human capacity needs for R2R (ICM/IWRM) implementation and benchmarking/tracking competencies of national and local government units for R2R implementation	2.2.1 Required functional competencies of national and local personnel for environment and natural resource management in PIC contexts undefined and untracked	2.2.1 Up to 14 R2R personnel identified, with functional competencies are benchmarked, tracked and analysed. At least one study completed identifying national human capacity needs for R2R (ICM/IWRM) implementation and benchmarking/tracking competencies of national and local government units for R2R implementation. Based on the study, at	2.2.1 Assessment of national and local government competencies and capacity development needs published	2.2.1 Securing advice and support from human resource specialist familiar with systems of government and barriers to sustainable development in PIC contexts

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
		Number of capacity building support secured with results documented		least 14 capacity building support provided with results documented.		
		2.2.2 Number of recommendations on practitioner retention internalized at national and local government levels	2.2.2 Retention of skilled and experienced practitioners in environment and natural resource management low, particularly in project-based investments, including limited dialogue on human capacity needs for cross-sectoral	2.2.2 At least 1 regional report with recommendations for R2R practitioner retention at national and local government levels completed. The report will analyse existing Public Service Commission salary scales and required functional competencies of key R2R (ICM/IWRM) personnel; appropriate guidelines and incentive structures for retention of local R2R expertise proposed.	2.2.2 Report of Public Service Commission employment conditions, ICM/IWRM human capacity needs, and recommended incentive structures published	2.2.2 Sufficient commitment from Pacific leaders to address human resourcing issues for natural resource and environmental management

Component 3 Mainstreaming of Ridge to Reef ICM/IWRM Approaches into National Development Frameworks

Outcome 3.1 National and regional strategic action frameworks for ICM/IWRM endorsed nationally and regionally

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
3. Mainstreaming of Ridge to Reef ICM/IWRM Approaches into National Development Frameworks	3.1 National and regional strategic action framework for ICM/IWRM endorsed nationally and regionally	3.1.1 Number of sectoral governance framework harmonised and strengthened through national and regional development frameworks	3.1.1 Constrained and inadequate sectoral planning and investment of natural and social systems in PICs	3.1.1 National recommendations for 14 PICs for coastal policy, legal and budgetary reforms for ICM/IWRM for integration of land, water, forest, coastal management and CC	3.1.1 14 national reviews of existing policies, laws, Executive Orders, Presidential Decrees, and departmental strategic plans relating to land, forest, water, and coastal	3.1.1 Government agencies may be unwilling to participate in processes for the harmonization of policy and legislation

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
				adaptation compiled and documented with options for harmonization of governance frameworks	management, including recommendations for the harmonization of governance frameworks published	
		3.1.2 Inter-ministerial agreements and strategic action framework for 14 PICs developed and submitted for endorsement on integration of land, water, forest and coastal management and capacity building in development of national ICM/IWRM reforms and investment plans	3.1.2 Lack of national and regional policy and plans to support the mainstreaming of R2R approaches in development planning	3.1.2 Agreements and strategic action frameworks for the 14 PICs endorsed by leaders	3.1.2 Endorsed National and Regional Strategic Action Frameworks published	3.1.2 Consultative processes will not elicit adequate stakeholder input and commitment of support from national networks to proposed priority strategic actions
		3.1.3 Number of demonstrable use of national State of the Coastsqor State of the Islandsqreports in national and regional action planning for R2R investment	3.1.3 Limited application of evidence-based approaches in PICs national development planning in the areas of: freshwater use and sanitation; wastewater treatment and pollution control; land use and forestry practices; balancing coastal livelihoods and biodiversity conservation; hazard risk reduction; and climate variability and change	3.1.3 National State of the Coastsqor State of the Islandsq reports for 14 PICs completed and launched to Pacific Leaders during National Coastal Summits (Yr 3) in coordination with national R2R projects and demonstrated as national development planning tool, including guidelines for diagnostic analyses of coastal areas	3.1.3 Published State of the Coastsqreports	3.1.3 Strong and high-level government commitment is generated, sustained and willing to use State of Islandsq reporting as an instrument for change

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

Outcome 3.2 Coordinated approaches for R2R integrated land, water, forest and coastal management and CC adaptation achieved in 14 PICs

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
3. Mainstreaming of Ridge to Reef ICM/IWRM Approaches into National Development Planning (<i>cont.</i>)	3.2 Coordinated approaches for R2R integrated land, water, forest and coastal management and CC adaptation achieved in 14 PICs	3.2.1 Number of networks of national R2R pilot project inter-ministerial committees formed and linked to existing national IWRM committees	3.2.1 National IWRM task forces and local coordinating committees in 12 countries and a need exists for strengthened coordination of IWRM plan implementation within broader R2R frameworks	3.2.1 Up to 14 national networks of R2R (ICM/IWRM) national pilot project inter-ministry committees formed by building on existing IWRM committees and contributing to a common results framework at the project and program levels	3.2.1 Meeting reports of pilot project committees (joint management/planning decisions and participant lists)	3.2.1 Provincial and local governments may perceive IMC approach as being driven by central government
		3.2.2 Number of people participating in inter-ministry committee (IMC) meetings conducted including scope and uptake of joint management and planning decisions *Participation data to be disaggregated by gender	3.2.2 Limited number and variety of stakeholders participating in national coordinating bodies to ensure community to Cabinet planning of investment in sustainable development of PICs	3.2.2 The number and variety of stakeholders participating in periodic IMC meetings in 14 PICs are doubled, with meeting results documented, participation data assembled and reported to national decision-makers and regional forums *50% of participants will be women, youth, and/or from vulnerable groups	3.2.2 Meeting reports of periodic national IMC meetings (joint management/planning decisions and participant lists), including annual IMC results report to national leaders in 14 PICs and regional fora	3.2.2 Appropriately qualified national staff available to provide adequate Secretariat support to IMC work
		3.2.3 Number of networks established between community leaders and local government from pilot projects	3.2.3 Limited exchange between communities on best practices in environment and natural resource management	3.2.3 Community leaders and local government create at least 14 networks via national and regional round-table meetings complemented by community tech	3.2.3 Reports of national and regional round-table meetings	3.2.3 Adequate cooperation is fostered among IW pilot project and national STAR project staff to build stakeholder confidence in benefits

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
				exchange visits		of integration
		3.2.4 Number of inter-ministry committee members meeting within the 4 pilot PICs that is engaged in learning and change in perception through participatory techniques *Participation data to be disaggregated by gender	3.3.4 Limited learning on effectiveness of investments in country-driven approaches to development assistance in PICs	3.2.4 At least 20 ICM members total from the 4 pilot PICs (sub-regional, mix of high island, atoll settings) gauge in learning, leading to change in perception through participatory techniques. *50% of participants will be women, youth, and/or from vulnerable groups	3.2.4 Report of the application of participatory techniques to gauge learning and change in perception among IMC members in 4 pilot PICs	3.2.4 R2R is accepted at the national level as a legitimate framework for a multi focal area approach to GEF investment for PIC sustainable development

Component 4 Regional and National Ridge to Reef Indicators for Reporting, Monitoring, Adaptive Management and Knowledge Management

Outcome 4.1 National and regional formulation and adoption of integrated and simplified results frameworks for integrated multi-focal projects

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
4. Regional and National Ridge to Reef Indicators for Reporting, Monitoring, Adaptive Management and Knowledge Management	4.1 National and regional formulation and adoption of integrated and simplified results frameworks for integrated multi-focal projects	4.1.1 Number and quality of national and regional indicator set with the proposed targets and outcomes of the R2R program	4.1.1 Calls from Pacific leaders for strengthened emphasis on results in the planning and financing of development in PICs	4.1.1 1 simple and integrated national and regional reporting templates developed based on national indicator sets and regional framework to facilitate annual results reporting and monitoring from 14 PICs	4.1.1 Agreed national and regional reporting templates published online	4.1.1 (a) Design of national STAR projects include targets and related indicators aimed at achievement of R2R program goals and outcomes; (b) legal agreements between national lead agencies and GEF implementing agencies for STAR projects include explicit requirement for project management units to meet R2R program reporting

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
						requirements
		4.1.2 Level of acceptance of the harmonized results tracking approach by the GEF, its agencies and participating countries	4.1.2 Lack of results tracking and reporting approach tested via GEF Pac IWRM project, including training of a cadre of national WatSan sector staff	4.1.2 1 unified/harmonized multi-focal area results tracking approach and analytical tool developed, endorsed, and proposed to the GEF, its agencies and participating countries	4.1.2 Regional results framework and analytical tool developed and accessible online for review and testing	4.1.2 Sustained commitment of senior government officials with oversight of IW and STAR projects to develop and test a harmonized results approach for GEF investment in PICs
		4.1.3 Number of National planning exercises in 14 Pac SIDS conducted with participants from relevant ministries with a mandate to embedding R2R results frameworks into national systems for reporting, monitoring and budgeting	4.1.3 An increasingly large myriad of national level reporting requirements for natural resource and environment agencies constrains the timely and accurate reporting of results of development assistance in PICs	4.1.3 Up to 14 national planning exercises in 14 Pac SIDS conducted with participants from relevant ministries with a mandate to embed R2R results frameworks into national systems for reporting, monitoring and budgeting	4.1.3 Reports of national planning exercises in 4 PICs on embedding R2R results frameworks into national systems	4.1.3 National planning and finance ministry staff are sufficiently well engaged in national planning exercises

Outcome 4.2 National and regional platforms for managing information and sharing of best practices and lessons learned in R2R established

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
4. Regional and National Ridge to Reef Indicators for Reporting, Monitoring, Adaptive Management and Knowledge Management (<i>cont.</i>)	4.2 National and regional platforms for managing information and sharing of best practices and lessons learned in R2R established	4.2.1 Regional communications strategy developed and number of partnership with media and educational organizations	4.2.1 Absence of public-private partnership in support of communicating benefits of IWRM initiated via GEF Pac IWRM project	4.2.1 Regional ridge to reef communications strategy developed and implemented and assistance provided to national R2R project including at least 10 partnerships with national and regional media and	4.2.1 Approved communications strategy published	4.2.1 (a) Willingness of regional and national media outlets prepared to partner with R2R program implementation; and (b) adequate resourcing from national STAR projects to the development of media

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
				educational organizations		products required to effectively communicate the benefit of integrated R2R approaches
		4.2.2 Number of IW:LEARN experience notes published	4.2.2 Limited regional and global sharing of information on best practice and lessons learned from the GEF Pacific Alliance for Sustainability	4.2.2 Participation in IW:LEARN activities: conferences; preparation of at least 10 experience notes and inter-linked websites with combined allocation of 1% of GEF grant	4.2.2 Published experience notes	4.2.2 Retention of national and regional level staff required to resource the documentation of experiences and lessons learned as IW:LEARN experience notes
		4.2.3 Number of users, volume of content accessed, and online visibility of the Pacific R2R Networkq	4.2.3 Need for media platforms and targeted communications in support of efforts to harness support for inter-ministerial coordination and policy and planning elements of the R2R program	4.2.3 Pacific R2R Network established with at least 100 users registered, online regional and national portals containing among others, databases, rosters of national and regional experts and practitioners on R2R, register of national and regional projects, repository for best practice R2R technologies, lessons learned etc.	4.2.3 Regional and national project portals, GIS and meta-databases, roster of national and regional experts and practitioners on R2R, register of national projects, repository for best practice R2R technologies, lessons learned, and results portal accessible online via Pacific R2R Networkq	4.2.3 Inter-connectivity in national and regional project offices is adequate to support the efficient online compilation and sharing of information and data

Component 5 Ridge-to-Reef Regional and National Coordination

Outcome 5.1 Effective program coordination of national and regional R2R projects

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
5. Ridge-to-Reef Regional and National Coordination	5.1 Effective program coordination of national and regional	5.1.1 Program coordination unit recruited and staff	5.1.1 No coordination unit and full time personnel established	5.1.1 Functioning overall R2R program coordination unit with	5.1.1 Terms of Reference and contracts for program	5.1.1 Regional executing agency ability to recruit and

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
	R2R projects	retained		alignment of development worker positions contributing to coordinated effort among national R2R projects (Year 1)	coordination unit staff	retain appropriately qualified staff for program coordination unit
		5.1.2 Number of requests for regional-level support to national project delivery and management met by program coordination unit	5.1.2 Limited national level experience and capacity in delivery of large integrated natural resource and environment projects and programs	5.1.2 Technical, operational, reporting and monitoring Unit is operational to provide support to national R2R projects, as may be requested by PICs, to facilitate timely delivery of overall program goals. At least 14 requests per year are met effectively.	5.1.2 Outputs of in-country technical support missions Annual client (country) survey on regional R2R support quality	5.1.2 Adequate resourcing available to program coordination unit to meet support requests of national STAR projects
		5.1.3 Number of R2R staff trained resulting in effective results reporting and online information sharing	5.1.3 Low-level familiarity with GEF minimum standards for results-based management, monitoring and evaluation, and financial and progress reporting requirements of GEF and its implementing agencies	5.1.3 At least 14 R2R staff are trained (in harmonized reporting and monitoring and other regional and national and capacity building modules, among others) resulting in effective results reporting and online information sharing.	5.1.3 Training modules for results reporting and online information sharing published online R2R Staff annual performance evaluation	5.1.3 IW pilot and STAR project are retained to enable the longer-term development and local exchange of national project management and reporting capacity
		5.1.4 Volume and quality of information and data contributed by program stakeholders to online repositories	5.1.4 Existing GEF IWRM interactive website with a cadre of national project stakeholders trained in its operation	5.1.4 At least 4 quality information and/or data contributed/ updated per year (total of at last 16 throughout the project) to the online repository, as a result of support provided to PICs for the	5.1.4 Program stakeholder contributions of information and data published online	5.1.4 Internet connectivity in national and regional offices of program/project stakeholders adequate to support use of online training tools

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

Components	Outcomes	Indicator	Baseline	Targets End of Project	Source of Verification	Risks and Assumptions
				development and operation of the Pacific R2R Network and regional with national R2R web pages as a repository of information, documentation and for sharing best practices		
		5.1.5 Number of planning and coordination workshops conducted for national projects teams to ensure timeliness and cost-effectiveness of IW pilot project and STAR project coordination, delivery and reporting	5.1.5 Limited sub-regional and regional coordination and planning workshops conducted in association with inter-governmental meetings for cost efficiency purposes	5.1.5 At least 4 (1 per year) planning and coordination workshops conducted for national project teams in the Pacific R2R network	5.1.5 Agenda, list of participants and minutes of planning and coordination workshops	5.1.5 National and regional organisations assign sufficient importance to engagement with planning and coordination initiatives of the project

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

TOTAL BUDGET AND WORKPLAN

Award ID:	00084701	Project ID(s):	00092601
Award Title:	Ridge to Reef - Testing the Integration of Water, Land, Forest & Coastal Management to Preserve Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods in Pacific Island Countries		
Business Unit:	EJ110		
Project Title:	Ridge to Reef - Testing the Integration of Water, Land, Forest & Coastal Management to Preserve Ecosystem Services, Store Carbon, Improve Climate Resilience and Sustain Livelihoods in Pacific Island Countries		
PIMS no.	5221		
Implementing Partner (Executing Agency)	SPCø Applied Geoscience and Technology Division (SOPAC)		

GEF Outcome/Atlas Activity	Responsible Party/	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)	See Budget Note:
	Implementing Agent											
COMPONENT 1: National Demonstrations to Support R2R ICM/IWRM Approaches for Island Resilience and Sustainability	SOPAC	62000	GEF	71200	International Consultants	26,230	26,230	26,230	26,230	-	104,920	1
				71300	Local Consultants	52,500	52,500	52,500	52,500	-	210,000	2
				71400	Contractual Services - Individuals	628,676	628,676	628,676	628,676	-	2,514,704	3
				71600	Travel on official business	135,094	135,094	135,094	135,094	-	540,376	4
				72100	Contractual Services - Companies	21,000	21,000	21,000	21,000	-	84,000	5
				72200	Equipment and Furniture	175,000	175,000	175,000	175,000	-	700,000	6
				72400	Communications and Audio-Visual Equipment	7,500	7,500	7,500	7,500	-	30,000	7
				72500	Supplies	21,000	21,000	21,000	21,000	-	84,000	8
				72800	Information Technology Equipment	17,500	17,500	17,500	17,500	-	70,000	9

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

				74200	Audio-Visual and Printing Production Costs	21,000	21,000	21,000	21,000	-	84,000	10
				74500	Miscellaneous Expenses	7,000	7,000	7,000	7,000	-	28,000	11
				Total Component 1		1,112,500	1,112,500	1,112,500	1,112,500	-	4,450,000	
COMPONENT 2: ISLAND-BASED INVESTMENTS IN HUMAN CAPITAL AND KNOWLEDGE TO STRENGTHEN NATIONAL AND LOCAL CAPACITIES FOR RIDGE TO REEF ICM/IWRM APPROACHES, INCORPORATING CLIMATE CHANGE	SOPAC	62000	GEF	71200	International Consultants	62,500	62,500	62,500	62,500	-	250,000	12
				71400	Contractual Services - Individuals	54,892	54,892	54,892	54,892	-	219,568	13
				71600	Travel on official business	122,467	122,467	122,467	122,467	-	489,868	14
				72100	Contractual Services - Companies	140,141	140,141	140,141	140,141	-	560,564	15
				74100	Professional services	2,500	2,500	2,500	2,500	-	10,000	16
				74200	Audio-Visual and Printing Production Costs	30,000	30,000	30,000	30,000	-	120,000	17
				Total Component 2		412,500	412,500	412,500	412,500	-	1,650,000	
COMPONENT 3: MAINSTREAMING OF RIDGE TO REEF ICM/IWRM APPROACHES INTO NATIONAL DEVELOPMENT PLANNING	SOPAC	62000	GEF	71400	Contractual Services - Individuals	119,896	119,896	119,896	119,895	-	479,583	18
				71600	Travel on official business	58,740	58,741	58,741	58,741	-	234,963	19
				74100	Professional services	74,614	74,613	74,613	74,614	-	298,454	20
				74200	Audio-Visual and Printing Production Costs	28,000	28,000	28,000	28,000	-	112,000	21
				Total Outcome 3		281,250	281,250	281,250	281,250	0	1,125,000	
COMPONENT 4: REGIONAL AND NATIONAL 'RIDGE TO REEF' INDICATORS FOR REPORTING, MONITORING, ADAPTIVE MANAGEMENT AND KNOWLEDGE MANAGEMENT	SOPAC	62000	GEF	71400	Contractual Services - Individuals	79,700	79,700	79,700	79,700	79,700	398,500	22
				71600	Travel on official business	46,000	46,000	46,000	46,000	46,000	230,000	23
				74100	Professional services	54,600	54,600	54,600	54,600	54,600	273,000	24
				74500	Miscellaneous Expenses	18,500	20,000	20,000	20,000	20,000	98,500	25
				Total Component 4		198,800	200,300	200,300	200,300	200,300	1,000,000	

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

COMPONENT 5: RIDGE-TO-REEF REGIONAL AND NATIONAL COORDINATION	SOPAC	62000	GEF	71400	Contractual Services - Individuals	122,960	122,960	122,960	122,960	122,960	614,800	26
				71600	Travel on official business	167,124	167,124	167,124	167,124	167,124	835,620	27
				72400	Communications and Audio-Visual Equipment	10,116	10,116	10,116	10,116	10,116	50,580	28
				74100	Professional services	13,118	13,116	13,116	13,116	13,116	65,582	29
				74500	Miscellaneous Expenses	2,000	2,000	2,000	2,000	2,000	10,000	30
				Total Component 5		315,318	315,316	315,316	315,316	315,316	1,576,582	
Project Management	SOPAC	62000	GEF	71400	Contractual Services - Individuals	74,509	74,507	74,507	74,507	74,507	372,537	31
				72200	Equipment and Furniture	2,000	2,000	2,000	2,000	2,000	10,000	32
				72400	Communications and Audio-Visual Equipment	2,000	2,000	2,000	2,000	2,000	10,000	33
				72500	Supplies	5,037	5,037	5,003	5,037	5,003	25,117	34
				72800	Information Technology Equipment	6,116	6,116	6,116	6,116	6,116	30,580	35
				73400	Rental and maintenance of other equipment	800	800	800	800	800	4,000	36
				74100	Professional services	12,000	12,000	12,000	12,000	12,000	60,000	37
				74500	DPC (Cost Recovery Charge)	714	714	748	714	748	3,638	38
				Total Project Management		103,176	103,174	103,174	103,174	103,174	515,872	
PROJECT TOTAL						2,423,544	2,425,040	2,425,040	2,425,040	618,790	10,317,454	

Summary of Funds

Source	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)
GEF	2,423,544	2,425,040	2,425,040	2,425,040	618,790	10,317,454
UNDP	1,660,000	1,660,000	1,660,000	1,660,000	1,660,000	8,300,000
SPC/AGTD	7,429,431	6,701,431	6,116,431	5,617,131	5,617,131	31,481,555
National Governments	9,585,320	9,585,320	9,585,320	9,585,320	9,585,325	47,926,605
Total	21,098,295	20,371,791	19,786,791	19,287,491	17,481,246	98,025,614

Budget Notes

- 1 International Consultant will be hired to help develop, edit and produce technical publications for the Project. Approximately 50 weeks through the life of the project is covered by this line item.
- 2 A local consultant will be employed in each country (x14) for National project service needs. Approximately 12 weeks for each country is covered in this line item.
- 3 14 National Project Managers will be employed over the four year project life. Included the partial cost of the Regional R2R Programme Manager, as are the full costs for the Project's R2R Science Team Leader and Science Officer.
- 4 Travel will cover the international and Local consultants, RPCU and National Project Staff (airfare plus DSA) and the costs of round table meetings other meetings and workshops in 14 Countries.
- 5 Provides funds for the contracting of local services as required by national pilot projects in 14 countries.
- 6 Procurement of National Pilot Project office equipment and on ground items for implementation of the National R2R Pilot Projects in 14 countries.
- 7 Procurement of aerial survey equipment for coastal surveying of predetermined high risk areas.
- 8 Costs associated with National Pilot Project implementation in 14 countries.
- 9 Procurement of 1 x Laptop computer for each of the 14 National Pilot Projects
- 10 Costs associated with National Pilot Project implementation in 14 countries includes production of 14 x communications products on best practices.
- 11 Miscellaneous: this item will cover any unforeseen expenses and any small overruns in 14 National Pilot Projects

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

- 12 International Consultant for development of Capacity Development Products eg Post Graduate Certificate and National Level Competencies.
- 13 Partial costs of the Regional R2R Programme Manager and full costs for the R2R Programme Administration Officer these Positions are described in Annex 3.
- 14 Travel will cover National Course Participants (airfare plus DSA) and the the costs of annual "face to face" course work for 14 Countries and related international consultants.
- 15 Estimated cost of procurement of Post Graduate Courses for Participating PIC nationals from 14 Countries.
- 16 Cost to develop and maintain an online register of PIC-based land, forest, water, coastal, and climate change adaptation practitioners
- 17 Produce locally appropriate public awareness and outreach materials to promote local social, economic and environmental benefits of the R2R approach and produce multi-media products to support national and regional uptake of regionally accumulated scientific knowledge for R2R planning.
- 18 Partial costs of the Regional R2R Programme Manager and full costs for the Project's R2R Information Manager these Positions are described in Annex 3.
- 19 Travel will cover the international and Local consultants, RPCU and National participants (airfare plus DSA) and the costs of national and subregional meetings and workshops in 14 Countries.
- 20 Procurement of services for assisting in the compilation of 14 National State of the Coast Assessment Reports.
- 21 Production and Publication of 14 National State of the Coast Reports
- 22 Partial costs of the Regional R2R Programme Manager and full costs for the Project's R2R Media Communications Manager these Positions are described in Annex 3
- 23 Travel will cover the international and Local consultants, RPCU and National participants (airfare plus DSA) and the costs of national and subregional meetings of workshops in 14 Countries.
- 24 Procurement of services for the production of media products to support the 14 National Communication Strategies, development of local media content for R2R and provision and maintenance of website.
- 25 1% IW Learn for production of Experience Notes. It is part of IW Global Programme, of which detailed activities will be identified at the inception workshop stage.
- 26 Contractual services for the following - Country (Regional) R2R Project Coordinator, 50K for mid-term evaluation and 50K for final evaluation. Position for Country (Regional) R2R Project Coordinator is described in Annex 3.
- 27 Will cover the RSC participation of international and Local consultants, RPCU and National Participants (airfare plus DSA) and the costs of the 4 Regional Steering Committee Meetings and IA R2R Coordination Group Meetings.
- 28 Procurement of In-country communication services
- 29 Local services for 14 in-country coordination for M&E Professional services for In-country coordination
- 30 Provision to cover any unforeseen expenses

Ridge to Reef: Testing the Integration of Water, Land, Forest and Coastal Management

- 31 Full costs for the R2R Programme Administration Officer and Project Financial Officer these Positions are described in Annex 3.
- 32 Office Furniture for Project Coordinating Unit staff
- 33 Project Cameras and Projectors
- 34 Office Stationary and Supplies
- 35 Procurement of RPCU Staff Computers, printer and copier.
- 36 Provision for equipment maintenance costs
- 37 Regional and National Pilot Project Audits
- 38 Cost recovery charge for UNDP support services for recruitment of consultants for Mid-term and Terminal Evaluation and Audit (per annum)

5 MANAGEMENT ARRANGEMENTS

191. The Executing Agency for the project will be SPC's Applied Geoscience and Technology Division (SOPAC) under the SPC based in Suva, Fiji. SPC is an inter-governmental, regional organisation dedicated to providing services to promote sustainable development and vulnerability reduction in the countries it serves through legal mandate. A new R2R Programme will be established within SOPAC to ensure related SPC Divisional Programme to ensure the R2R Programme Framework goals are met at National and Regional Levels. SPC's cooperated work programme areas are:

- Water and Sanitation - Provides technical support through capacity building, awareness and advocacy related to the management of water resources and the provision of water supply and sanitation services
- Disaster Reduction provides technical and policy advice and support to strengthen disaster risk management practices in Pacific Island Countries and Territories. The Programme carries out this responsibility in coordination and collaboration with other technical programme areas within SOPAC and also with a range of regional and international development partners and donors.
- Ocean and Islands - Provides applied ocean, island and coastal geoscience services to support countries to govern and develop their natural resources, increase their resilience to hazards and facilitates data-based approaches to adaptation.
- Coastal Fisheries Programme - The CFP helps to develop the capacities of member Pacific Island countries and territories to assess, harvest, develop, manage and conserve their marine resources. It supports the sustainable development of the region's fisheries at the subsistence, artisanal and small- and medium-scale commercial levels through the provision of assessment, development and management advice, technical assistance, and vocational and scientific training at national and regional levels, as well as the production and dissemination of relevant information.
- Land Use Management provides technical services to support PICTs to Manage land resources ensuring they continue to provide important ecosystem services such as watershed protection, biodiversity conservation and carbon sequestration.
- Health Advancement Programme - promotes and protects the health of Pacific Island peoples. It advocates a holistic approach to health, supports sustainable capacity development, and facilitates and promotes collaboration with partners.

192. The project will be run by a Project Coordination Unit (PCU) which will be staffed by a Regional R2R Programme Manager, a Science and Project Leader, Country (Regional) R2R Project Coordinator, a Science and Technology Officer, a Media and Communications Adviser, an Information Manager, a Programme Administration Officer and Project Accountant. The Project Coordination Unit will provide the day-to-day management and coordination function for project activities and support In-Country (Regional) R2R Project Managers who will be employed in the 14 participating PICs to run the day-to-day operations of the National R2R activities and Pilot Projects. The Regional R2R Programme Manager, in accordance with UNDP formats and guidelines, will prepare the Annual Work Plan reflecting project activities and outcomes. In addition to the Annual Work Plan, a detailed activity work plan per project component will indicate periods of activity and the parties responsible for delivery. The Regional R2R Programme Manager will be the registered Implementing Partner signatory for the project and will work under the regulations of the Implementing partner (SPC), and will be accountable to the Regional Project Steering Committee. They will also act as the Secretary to the Regional Project Steering Committee. The PCU will co-ordinate, supervise, assist, control, monitor and report on project execution and budget. PCU staff position Terms of Reference are provided in Annex 3.

193. In its responsibility as Implementing Partner, SPC/SOPAC will, through the PCU, be responsible for the technical and financial execution of the project following UNDP processes. It will be responsible for (i) directing and managing the project; (ii) meeting the projects stated outcomes and projected outputs in a timely manner; and (iii) making effective and efficient use of the financial resources allocated in accordance with the Project Document. The PCU will be, where

required, guided by the decisions of the Regional Programme Steering Committee and pilot project committees to support the implementation of the project.

194. The **UNDP** Fiji MCO and UNDP APRC (Asia Pacific Regional Center) will provide oversight in the implementation of this project. UNDP MCO located in Suva, Fiji will support project implementation by assisting in the monitoring of project budgets and expenditures and where requested by the Implementing partner subcontracting project consultancy services and procuring equipment. On the technical side the RSC and UNDP Fiji MCO will monitor progress of project implementation and achievement of project outcomes/outputs as per the endorsed project document. A designated Programme Officer will be assigned in the MCO to assist with Financial and Technical monitoring and Implementation. Technical Oversight will be provided by the Regional Technical Adviser for Coastal Marine and Island Ecosystems from UNDP APRC.
195. The Implementing Partner will request from UNDP financial funds in accordance with UNDP procedures. The Audit will be conducted according to UNDP financial regulations, rules and audit policies by the legally recognized auditor of the Governments or by a commercial auditor. UNDP will be in charge of selecting a recognized independent auditor. The cost of these audits will be charged to the project budget. Project management Structure is shown in Figure 6.

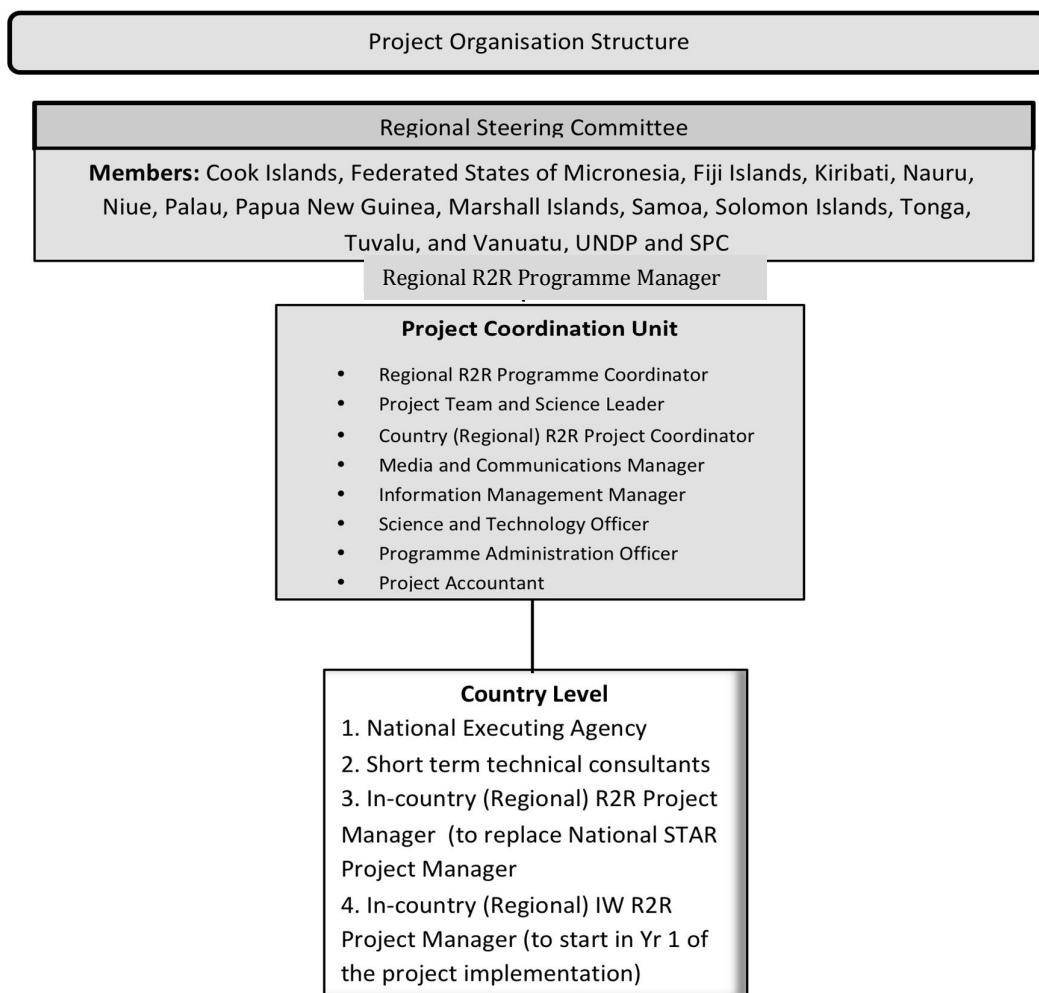


Figure 6: Project management Structure

196. **Regional Governance:** Implementation of the project will be carried out under the general guidance of a Regional Programme Steering Committee (RSC) specifically formed for this purpose. The RSC includes the designated national R2R Focal Points who have been involved in the design phase of the project, as well as GEF Operational Focal Points. The RSC's role will be to provide managerial and governance advice to the project, and to guide the PCU in the implementation and monitoring of the overall regional project. UNDP will be a member of the RSC. FAO and UNEP will also be invited as observers to foster cooperation and coordination of the National STAR projects within the R2R Programmatic approach. Membership will be reconfirmed and or reconstituted at the Inceptions Meeting as will meeting procedures. Technical advice will also be provided by the Regional Scientific and Technical Committee.
197. **Programme Governance:** Coordination and Governance of the Regional Programme Framework of the National R2R STAR Projects and the IW R2R Regional Project will be undertaken by the Programme Coordination Group (PCG). The PCG will be comprised of representatives of the three IAs UNDP, FAO and UNEP who will meet annually during the IW R2R Regional Project Steering Committee meeting. A representative of the GEF Secretariat will be invited at these meetings. The PCG will review progress in PIC National STAR Projects and the IW Regional Projects. The IW R2R Regional PCU will act as the PCG secretariat. UNDP as R2R Program Leader will report to the GEF Constituency²⁰ on the status of the Program as may be requested. The figure below shows the governance structure for the Programme and its projects. Regional and National Project Governance structures are shown in Figure 7.
198. **Regional Scientific and Technical Committee** - will be responsible for ensuring that scientific and technical aspects of the R2R programme meet International standards. Specifically it will review the substantive activity of project component 1 to develop a regionally appropriate method and procedure for the characterization and prioritization of PIC coastal areas for R2R investment and the conduct of diagnostic analysis to identify needs for key reforms and investments in priority areas. The RSTC will also provide inputs to the design of curricula and training materials for the regional post-graduate training programme to be operated as part of this component, and will provide regional guidance to the national State of Coasts reporting and harmonized results reporting to be undertaken as part of components 3 and 4, respectively. Additionally, the RSTC will lead the development of regionally appropriate knowledge tools to support evidence-based coastal and marine spatial planning in PICS.
199. **National Management Arrangements** - Capacity at the national level to lead, coordinate and administer activities to implement the projects will be critical. The Inter Ministerial Committees (IMCs) formed under the GEF Pacific IWRM Project will form the basis of new and expanded IMCs to ensure integration across PIC governments.

National level governance arrangements include:

200. **In-Country (Regional) R2R Steering Committees** - will provide managerial and governance advice to the In-country (Regional) projects to guide the In-Country (Regional) Project Manager in the implementation and monitoring of the In-Country (Regional) projects. Membership will comprise both Government and non-government stakeholder representatives. Membership will be confirmed at the Inception Meeting as will meeting procedures. In-Country (Regional) R2R Project Steering Committees will be responsible for securing the necessary level of cooperation for successful project implementation, including the securing of country-specific information and resources necessary for successful project activities.

²⁰ The Constituency to which the PICs belong include the following countries: Cook Islands; Fiji; Indonesia; Kiribati; Marshall Islands; Micronesia; Nauru; Niue; Palau; Papua New Guinea; Philippines; Samoa; Solomon Islands; Timor Leste; Tonga; Tuvalu; Vanuatu

201. **In-Country (Regional) R2R Project Managers** . will implement and manage the in-country (regional) R2R projects and will be contracted by both the National Focal Agency and SOPAC for the delivery of in-country project activities and also relevant activities for the regional components of the project. Each In-country Project Manager will be recruited through a transparent recruitment process by the relevant focal Ministry in consultation with the Regional R2R Programme Manager. Project Manager progress will be reviewed bi-annually against an agreed workplan by the national focal ministry, the National IMC and In-Country (Regional) Steering Committee and Regional R2R Programme Manager. The in-Country (Regional) Project Manager will be accountable to the relevant focal Ministry and to the Regional Project Coordination Unit.

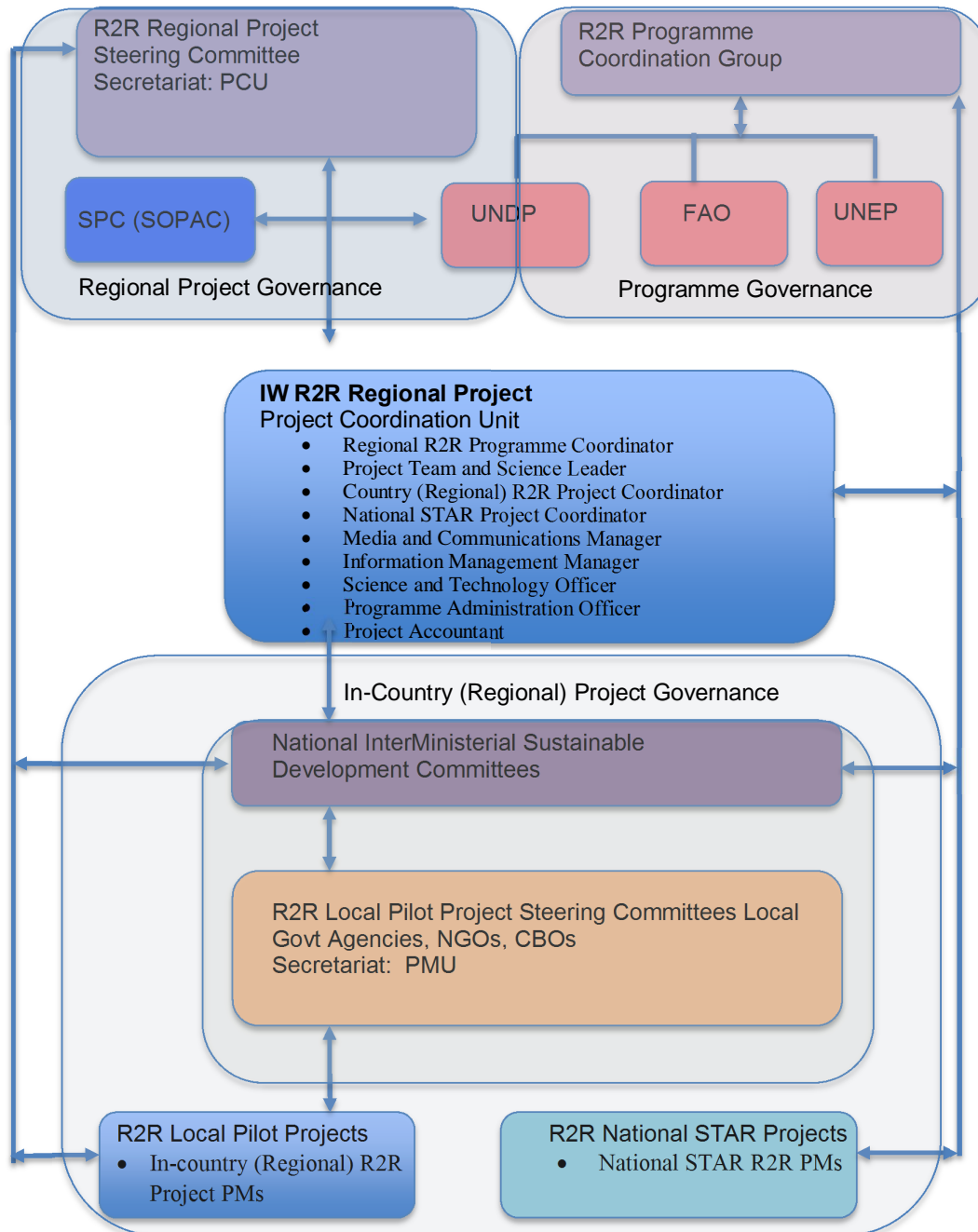


Figure 7: R2R Programme Governance Structure

6 MONITORING FRAMEWORK AND EVALUATION

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

Project start:

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

204. The Inception Workshop should address a number of key issues including:

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

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

206. Quarterly:

- Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform.
- Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Note that for UNDP GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical).
- Quarterly progress reports must be entered into Atlas and should be aligned to achievements from Annual Work Plans. Based on the information recorded in Atlas, a Project Progress Reports (PPR) can be generated in the Executive Snapshot.
- Quarterly reports should be submitted within the 15 days of the month following the end of every quarter.
- Other ATLAS logs can be used to monitor issues, lessons learned etc. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

207. Annually:

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

The APR/PIR includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
- Project outputs delivered per project outcome (annual).
- Lesson learned/good practice.
- AWP and other expenditure reports
- Risk and adaptive management
- ATLAS QPR
- Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

208. Periodic Monitoring through site visits:

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

Mid-term of project cycle:

209. The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation (June 2017). The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC).

210. The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

End of Project:

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

212. The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC).

213. The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

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

Learning and knowledge sharing:

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

Communications and visibility requirements:

218. Full compliance is required with UNDP's Branding Guidelines. These can be accessed at <http://intra.undp.org/coa/branding.shtml>, and specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other things, these guidelines describe when and how the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects needs to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The GEF logo can be accessed at: http://www.thegef.org/gef/GEF_logo. The UNDP logo can be accessed at: <http://intra.undp.org/coa/branding.shtml>.
219. Full compliance is also required with the GEF's Communication and Visibility Guidelines (the GEF Guidelines). The GEF Guidelines can be accessed at: http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf
220. Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items.
221. Where other agencies and project partners have provided support through co-financing, their branding policies and requirements should be similarly applied.

M& E workplan and budget

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> ▪ Project Manager ▪ UNDP CO, UNDP GEF 	Indicative cost: 161,000	Within first two months of project start up
Measurement of Means of Verification of project results.	<ul style="list-style-type: none"> ▪ UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members. 	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on <i>output and implementation</i>	<ul style="list-style-type: none"> ▪ Oversight by Project Manager ▪ Project team 	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul style="list-style-type: none"> ▪ Project manager and team ▪ UNDP CO ▪ UNDP RTA ▪ UNDP/GEF M&E 	None	Annually
Periodic status/ progress reports	<ul style="list-style-type: none"> ▪ Project manager and team 	None	Quarterly
Mid-term Evaluation	<ul style="list-style-type: none"> ▪ Project manager and team ▪ UNDP CO 	Indicative cost: 40,000	At the mid-point of project

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
	<ul style="list-style-type: none"> ▪ UNDP RCU ▪ External Consultants (i.e. evaluation team) 		implementation.
Final Evaluation	<ul style="list-style-type: none"> ▪ Project manager and team, ▪ UNDP CO ▪ UNDP RCU ▪ External Consultants (i.e. evaluation team) 	Indicative cost : 60,000	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> ▪ Project manager and team ▪ UNDP CO ▪ local consultant 	0	At least three months before the end of the project
Audit	<ul style="list-style-type: none"> ▪ UNDP CO ▪ Project manager and team 	Indicative cost USD 60,000 (USD 12,000/year)	Yearly
Visits to field sites	<ul style="list-style-type: none"> ▪ UNDP CO ▪ UNDP RCU (as appropriate) ▪ Government representatives 	For GEF supported projects, paid from IA fees and operational budget	Yearly
TOTAL indicative COST Excluding project team staff time and UNDP staff and travel expenses		US\$ 321,000 (+/- 5% of total budget)	

7 LEGAL

222. This project forms part of an overall programmatic framework under which several separate associated country level activities will be implemented. When assistance and support services are provided from this Project to the associated country level activities, this document shall be the Project Document+instrument referred to in: (i) the respective signed SBAA's for the specific countries; or (ii) in the [Supplemental Provisions](#) attached to the Project Document in cases where the recipient country has not signed an SBAA with UNDP, attached hereto and forming an integral part hereof.
223. This project will be implemented by the SPC's Applied Geoscience and Technology Division (SOPAC) (Implementing Partner+) in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.
224. The responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. The Implementing Partner shall: (a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried; (b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.
225. The Implementing Partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via

<http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

LIST OF ANNEXES

- Annex 1: Risk Analysis**
- Annex 2: Country IW R2R Results Frameworks**
- Annex 3: Terms of Reference for Project Staff**
- Annex 4: Letters of Co-financing**
- Annex 5: UNDP Environmental and Social Screening**
- Annex 6: Stakeholder Involvement Plan**