



## Government of Fiji & United Nations Development Programme

### PROJECT DOCUMENT

Project Title: **Implementing a Ridge to Reef approach to Preserve Ecosystem Services, Sequester Carbon, Improve Climate Resilience and Sustain Livelihoods in Fiji**

#### BRIEF DESCRIPTION

The Fiji GEF 5 STAR R2R project's objective is to preserve biodiversity, ecosystem services, sequester carbon, improve climate resilience and sustain livelihoods through a ridge-to-reef management of priority water catchments on the two main islands of Fiji. The project will run for four years (2015-18) with GEF budget of USD 7.39 million and substantial co-financing from Fiji Government, Private Sector, UNDP and Conservation NGOs (USD 30.24 million). The Fiji R2R project is part of the Program on "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 R2R approach in priority catchments will address key environmental issues in an integrated manner. It will bolster Fiji's national system of marine protected areas through an enhanced, representative and sustainable system of LMMA including greater protection of threatened marine species. Negative impacts of land-based activities on these MPAs will be reduced through development and implementation of integrated catchment management plans, including mangrove protection, the adoption of appropriate sustainable land use practices and riparian restoration in adjoining upstream watersheds as well as terrestrial PAs, restored and rehabilitated forests. These terrestrial PAs, coupled with an increase in the permanent native forest estate, including through assisted natural reforestation of degraded grasslands, will contribute to Fiji's REDD+ strategy through an increase in forest carbon stocks. The new PAs will help conserve threatened ecosystems, such as lowland tropical rainforest and moist forests, and species such as critically endangered/endangered plants, amphibians and reptiles and freshwater vertebrates and invertebrates. The R2R planning and overarching management approach is comprehensive; it aims to cover all activities within a catchment and out to the sea to ensure natural resource sustainability and biodiversity. The selected priority catchments are Ba River, Tuva River and Waidina River/Rewa Delta on Viti Levu and Labasa River, Vunivua River and Tunulua district on Vanua Levu: these catchments encompass a diverse and geographically dispersed group with markedly different environments and scales, intensities of land use and degradation, challenges and opportunities and provide an ideal suite of learning environments for biodiversity conservation (Component 1), forest carbon stock protection and increase (Component 2) and integrated natural resources management (Component 3). Broadly based Catchment Management Committees will be established for those catchments, viz. Ba, Labasa, Tuva and Waidina/Rewa which have major catchment-wide matters concerns such as land degradation, sedimentation and flooding. Component 4 (knowledge management) will ensure that project experiences and results are properly captured and widely disseminated, and contribute to data and information systems on biodiversity, forests, climate change, and land, coastal and marine management in Fiji

**UNDAF Outcome(s):** UNDAF for the Pacific Sub-region 2013-2017 – Outcome Area 1: Environmental management, climate change and disaster risk management

**UNDP Strategic Plan Environment and Sustainable Development Primary Outcome:** Output 2.5. Legal and regulatory frameworks, policies and institutions enabled to ensure the conservation, sustainable use, access and benefit sharing of natural resources, biodiversity and ecosystems, in line with international conventions and national legislation

**UNDP Strategic Plan Secondary Outcome:** Output 2.4: Frameworks and dialogue processes engaged for effective and transparent engagement of civil society in national development

**Executing Entity/Implementing Partner:** Ministry of Local Government, Housing and Environment, Government of Fiji  
**Implementing Entity/Responsible Partners:** Ministry of Local Government, Housing and Environment, Government of Fiji/UNDP

Project Period:	4 years
Atlas Award ID:	00083111
Project ID:	00091748
GEFT Agency Project ID:	5216
Start date:	January 2015
End Date:	December 2018
Management Arrangements:	NIM
LPAC Meeting Date:	21 October, 2014

<b>Total resources required:</b> USD37,629,626	
<b>Total allocated resources :</b> USD37,629,626	
GEF:	USD 7,387,614
UNDP In-kind:	USD 450,000
<b>Other:</b>	
National Government:	USD 26,713,803
Private Sector:	USD 1,210,000
NGO Partners:	USD 1,868,209

Agreed by Ministry of Strategic Planning, National Development and Statistics, Government of Fiji

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Date/Month/Year

Agreed by Ministry of Local Government, Housing and Environment, Government of Fiji

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Date/Month/Year

Agreed by UNDP:

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Date/Month/Year

## TABLE OF CONTENTS

### Contents

<i>List of Tables.....</i>	<i>8</i>
<i>List of Figures.....</i>	<i>8</i>
<i>List of Annexes.....</i>	<i>8</i>
<b>SECTION I: ELABORATION OF THE NARRATIVE .....</b>	<b>9</b>
PART I: BACKGROUND AND SITUATION ANALYSIS .....	9
1.1 INTRODUCTION .....	9
1.2 ENVIRONMENTAL CONTEXT.....	10
1.3 SECTORAL, INSTITUTIONAL AND POLICY CONTEXT.....	18
1.4 BASELINE ANALYSIS AND GAPS.....	30
PART II: INTERVENTION STRATEGY .....	37
2.1 PROJECT RATIONAL AND POLICY CONFORMITY: FIT TO GEF-5 FOCAL AREA STRATEGIES.....	37
2.2 DESIGN PRINCIPLES AND STRATEGIC CONSIDERATIONS .....	40
2.3 PROJECT GOAL, OBJECTIVE, OUTCOMES AND OUTPUTS .....	47
2.4 PROJECT INDICATORS.....	73
2.4 RISK ANALYSIS AND KEY ASSUMPTIONS .....	75
2.5 INCREMENTAL REASONING AND EXPECTED GLOBAL, NATIONAL AND LOCAL BENEFITS .....	78
2.6 PROJECT CONSISTENCY WITH NATIONAL PRIORITIES OR PLANS.....	79
2.7 COUNTRY OWNERSHIP: COUNTRY ELIGIBILITY AND COUNTRY DRIVENNESS .....	83
2.8 SUSTAINABILITY, REPLICABILITY AND POTENTIAL FOR SCALING UP .....	84
2.9 PUBLIC AWARENESS, COMMUNICATIONS, AND MAINSTREAMING STRATEGY .....	85
2.10 ENVIRONMENTAL AND SOCIAL SAFEGUARDS .....	85
PART III: PROJECT IMPLEMENTATION ARRANGEMENTS .....	87
3.1 IMPLEMENTATION AND INSTITUTIONAL FRAMEWORK .....	87
3.2 STAKEHOLDER INVOLVEMENT .....	91
3.3 STAKEHOLDER MAPPING AND ANALYSIS .....	94
3.4 LINKAGES WITH OTHER GEF AND NON-GEF INTERVENTIONS .....	95
PART IV: MONITORING AND EVALUATION PLAN .....	99
4.1 MONITORING AND REPORTING .....	99
4.2 INDEPENDENT EVALUATIONS, AUDITS AND FINANCIAL REPORTING .....	102
4.3 LEARNING AND KNOWLEDGE SHARING.....	102
4.4 COMMUNICATIONS AND VISIBILITY REQUIREMENTS .....	102
4.5 legal context.....	103
<b>SECTION II: STRATEGIC RESULTS FRAMEWORK (SRF) AND GEF INCREMENT .....</b>	<b>104</b>
PART I: STRATEGIC RESULTS FRAMEWORK .....	104
<b>SECTION III: PROJECT BUDGET, WORKPLAN AND TIMETABLE .....</b>	<b>120</b>
<b>SECTION IV: ADDITIONAL INFORMATION.....</b>	<b>129</b>

## ABBREVIATIONS AND ACRONYMS

ACP	African, Caribbean and Pacific region
ALTA	Agriculture Landlords and Tennant Act
APR	Annual Project Review
AWP	Annual Work Plan
BD	Biodiversity
BIOFIN	Biodiversity Finance Initiative (of UNDP)
BIOPAMA	Biodiversity and Protected Areas Management
CBA	Community Based Adaptation
CBAM	Community Based Adaptive Management
CBD	Convention on Biological Diversity
CC	Climate Change or Contributory Country
CCA	Climate change adaptation
CCM	Climate change mitigation
CI	Conservation International
COWRIE	Coastal and Watershed Restoration for the Integrity of Island Environments
CRISP	Coral Reef Initiative for the South Pacific
CBO	Community Based Organization
CCA	Community Conserved Areas or Climate Change Adaptation
Ce-PACT	Center for Pacific Crops and Trees (SPC LRD)
CFRA	Customary Fishing Rights Area (or qoliqoli)
CMC	Catchment management committee
COLP	Code of Logging Practice
COP	Conference of Parties
CSO	Civil Society Organization
CROP	Council of Regional Organizations in the Pacific
DRR	Disaster Risk Reduction
DIM	Direct Implementation Modality
DISMAC	Disaster Management Committee
DoA	Department of Agriculture
DoE	Department of Environment
DoF	Department of Forestry
DoFish	Department of Fisheries
DoT	Department of Tourism
DRM	Disaster Risk Management
EBM	Ecosystem-based management
EEZ	Exclusive Economic Zone
EIA	Environment Impact Assessment
EMA	Environment Management Act
ENSO	El Nino Southern Oscillation
EU	European Union
EWS	Early Warning System
FBOM	Fiji Bureau of Meteorology
FBOS	Fiji Bureau of Statistics
FHC	Fiji Hardwood Corporation
FLMMA	Fiji Locally Managed Marine Area
FMS	Fiji Meteorological Service
FNU	Fiji National University
FPAM	Forestry and Protected Areas Management
FPIC	Free, prior, informed consent
FPL	Fiji Pine Limited
FSPI	Foundations of the Peoples of the South Pacific International
FSC	Forest Stewardship Council
FSCLtd	Fiji Sugar Corporation Ltd
GDP	Gross Domestic Product
GEF	Global Environment Facility

GEFSEC	GEF Secretariat
GEFTF	GEF Trust Fund
GEF 4 PAS	GEF 4 Pacific Alliance for Sustainability
GHG	Greenhouse Gas
GIS	Geographic Information System
GoF	Government of Fiji
GSR	Great Sea Reef
H2O	Hilltops to Ocean
Ha	Hectare
HIES	Household Income and Expenditure Survey
IAS	Institute of Applied Science (of USP)
IBA	International Bird Area
ICCM	Integrated Catchment and Coastal Management
ICM	Integrated Catchment Management or Integrated Coastal Management
ICMP	Integrated Coastal Management Plan
IGO	Intergovernmental Organization
IKSA	Improving Key Services to Agriculture Fiji
IPCC	Intergovernmental Panel on Climate Change
INRM	Integrated Natural Resources Management
IRBM	Integrated River Basin Management
IRRF	Integrated Results and Resources Framework (UNDP Strategic Plan 2014-17)
IW	International Waters
IW:LEARN	GEF's International Waters Learning Exchange and Resource Network
IWRM	Integrated Water Resources Management
IUCN	International Union for Conservation of Nature (World Conservation Union)
JICA	Japan International Cooperation Agency
KBA	Key Biodiversity Area
KM	Knowledge Management
LWRM	Land and Water Resource Management (Ministry of Primary Industries)
LD	Land Degradation
LDCF	Least Developed Countries fund
LMMA	Locally Managed Marine Area
MACBIO	Marine and Coastal Biodiversity Management in Pacific Island Countries & Atolls
MCO	Fiji Multi-country Office (of UNDP)
MDG	Millennium Development Goal
MESCAL	Mangrove EcoSystems for Climate Change and Livelihoods
MFA	Multi-focal area projects
MiTA	Ministry of iTaukei Affairs
MIT	Ministry of Infrastructure and Transport
MLGH&E	Ministry of Local Government, Housing and Environment (formerly included Urban Development)
MLM	Ministry of Lands and Mineral Resources
M&E	Monitoring and Evaluation
MFF	Ministry of Fisheries and Forests
MoFA	Ministry of Foreign Affairs
MOU	Memorandum of Understanding
MPA	Marine Protected Area
MSPNDS	Ministry of Strategic Planning, National Development and Statistics
MRMDNDM	Ministry of Rural and Maritime Development and National Disaster Management
MRD	Mineral Resources Department
MRV	Monitoring, reporting and verification (of carbon sequestration)
MTF	Multi-Trust fund projects
NBCC	Nadi Basin Catchment Committee
NBSAP	National Biodiversity Strategy and Action Plan
NCCCT	National Climate Change Country Team
NCCP	National Climate Change Policy
NCWF	National Council of Women Fiji

NDMO	National Disaster Management Office
NEA	National Environment Act
NEC	National Environment Council
NEDC	National Economic Development Council
NFI	National Forestry Inventory
NFMV	NatureFiji-MareqeteViti
NGO	Non-Government Organization
NIM	National Implementation Modality
NPIF	Nagoya Protocol Implementation Fund
NTF	National Trust of Fiji
PA	Protected Area (as recognized in IUCN system)
PABITRA	Pacific-Asia Biodiversity Transect
PAC	Protected Area Committee
PACC	Pacific Adaptation to Climate Change
PCSSP	Pacific Climate Science Support Programme
PES	Payment for Ecosystem Services
PIBF	Pacific Biodiversity Information Forum
PIC	Pacific Island Country
PICCAP	Pacific Islands Climate Change Assistance Programme
PIF	Project Identification Form
PILN	Pacific Invasive Learning Network
PIMS	Programme Information Management System
PIR	Project Implementation Report
PMU	Project Management Unit (of Department of Environment)
POETCom	Pacific Organic and Ethical Trade Community
POPs	Persistent Organic Pollutants
PoWPA	Programme of Work on Protected Areas
PPG	Project Preparation Grant
PPR	Project Progress Report
R2R	Ridge-to-Reef
RCU	Regional Coordinating Unit
RDSSD	Roadmap for Democracy and Sustainable Socio-economic Development
REDD	Reducing Emissions from Deforestation and Forest Degradation
REDD+	REDD, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks (“+”)
RTA	Regional Technical Advisor
SC	Steering Committee
SCCF	Special Climate Change Fund
SFM	Sustainable Forest Management
SGP	Small Grants Programme of UNDP
SIDS	Small Islands Development States
SLM	Sustainable Land Management
SMART	Specific, Measurable, Achievable, Relevant and Time-bound (of indicators)
SOPAC	Pacific Islands Applied Geo-Science Commission (division of SPC)
SPC	Secretariat of the Pacific Community
SPCZ	South Pacific Convergence Zone
SPO	Strategic Planning Office (of Fiji Government)
SPREP	Secretariat of the Pacific Regional Environment Programme
SRES	Special Report on Emissions Scenarios
STAP	Scientific and Technical Assessment Panel
SVT	Soqosoqo Vakamarama iTaukei
TA	Technical Assistance
TAB	iTaukei Affairs Board
TESSA	Toolkit for Ecosystem Service Site-based Assessment
TF	Trust fund
TLTB	iTaukei Land Trust Board
TOR	Terms of Reference

TWG	Thematic Working Group
UNDP	United Nations Development Programme
UNDP RBAP	UNDP Regional Bureau for Asia and the Pacific
UNFCCC	United Nations Framework Convention on Climate Change
UNCCD	United Nations Convention to Combat Desertification
USP	University of the South Pacific
WAF	Water Authority of Fiji
WCS	Wildlife Conservation Society
WWF	World Wild Fund for Nature
YMST	Yaubula Committee or Yaubula Management Support Team

## LIST OF TABLES

Table 1.	List of larger forest reserves (>1000 hectares).....
Table 2.	Population in each catchment by gender.....
Table 3.	Population in each catchment by ethnicity.....
Table 4.	Population in each catchment by age distribution.....
Table 5.	Employment in each catchment by primary industry sector .....
Table 6.	Employment status in each catchment by household and gender .....
Table 7.	Type of employment in each catchment.....
Table 8.	Baseline (pre-project) forest carbon stock in the priority R2R catchments.....
Table 9.	Information on the six priority catchments and their connected marine environments.....
Table 10.	Carbon stocks (direct lifetime in MT CO <sub>2</sub> equiv) to be sequestered and conserved in each priority R2R catchment through project interventions.....
Table 11.	Project indicators and end-of-project targets.....
Table 12.	Project risks assessment and mitigation measures.....
Table 13.	Summary of R2R Stakeholders and their involvement in the project.....
Table 14.	M&E activities, responsibilities, budget and timeframe.....
Table 15.	Summary of funds.....

## LIST OF FIGURES

Figure 1.	Map of National Marine Managed and Priority Terrestrial Protected Areas, Fiji.....
Figure 2.	Map of Fiji showing location of qoliqolis, those influenced by FLMMA and tabu areas .....
Figure 3.	Map of Viti Levu showing project catchments: Ba, Tuva and Waidina.....
Figure 4.	Map of Vanua Levu showing project catchments: Labasa, Vunivia and Tunuloa.....
Figure 5.	Map of Rewa River Delta.....
Figure 6.	Project Management Structure .....

## LIST OF ANNEXES

Annex 1.	Profile of the six priority R2R catchments
Annex 2.	Critical physical features of the six catchments and implications for R2R
Annex 3.	Main threats, root causes and impacts on traditional way of life & culture; livelihoods/ economy/ human health and ecosystems
Annex 4.	Stakeholder mapping and analysis for Fiji R2R project
Annex 5.	Project Implementation Schedule / Gantt chart
Annex 6.	Terms of Reference for key R2R Project staff
Annex 7.	Terms of Reference for Knowledge Management Committee
Annex 8.	GEF 5 Tracking Tool for Biodiversity
Annex 9.	GEF 5 Tracking Tool for Land Degradation
Annex 10.	GEF 5 Tracking Tool for Sustainable Forest Management/REDD+
Annex 11.	GEF 5 Tracking Tool for Climate Change Mitigation
Annex 12.	GEF 5 Tracking Tool for International Waters
Annex 13.	Environmental and Social Screening Procedure
Annex 14.	Bibliography



## SECTION I: ELABORATION OF THE NARRATIVE

### PART I: BACKGROUND AND SITUATION ANALYSIS

#### 1.1 INTRODUCTION

The planned project is developed in accordance with the goal of the Pacific Islands National Priorities Multi-Focal Area 'Ridge-to-Reef' (R2R) Program *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*. To attend the overall goal, each of the involved Pacific Islands countries adopts specific aspects of R2R to address national priorities and development needs while delivering global environmental benefits in line with the applicable GEF focal area strategies.

Fiji's ecosystem services are provided by the diverse natural resources of the country, including from terrestrial, coastal and marine ecosystems. As for many of the Pacific Island Countries (PICs), Fiji represents microcosms of some of the most significant development and environmental challenges the world faces. Fiji comprises more than 332 islands, about one-third of which are inhabited, comprising a total land area of 18,333 km<sup>2</sup> in a vast marine Exclusive Economic Zone (EEZ) of 1.6 M km<sup>2</sup>. A significant portion of Fiji's economy is dependent on exploitation of Fiji's natural resource base especially the pelagic fisheries in its exclusive economic zone. With limited land area, Fiji experiences intense competing pressures on land resources for agriculture, tourism, transport, water and other needs. With some of the highest rainfall on the planet (typically more than 2000mm), Fiji is endowed with abundant natural water resources and indeed bottled mineral water has become a top export earner. Nevertheless domestic water supply and quality matters are common problems, exacerbated by leakages (often 50% or more losses) in poorly maintained water supply infrastructure. Improperly treated wastewater releases, poorly sited toilets and/or overuse of fertilizer in upstream communities/farms pollute coastal waters, create disease outbreaks, and contaminate sensitive groundwater supplies. Native forests are threatened by climate change and fire (although climate modelling indicates increased rainfall in the drier zones of Fiji), conversion to agriculture and most pervasively by invasive species especially by African tulip tree which invades abandoned shifting agricultural sites and open, degraded secondary forest. Forest harvesting practices, including in mahogany and pine plantations, are all too often not conducted in accordance with Fiji's code of logging practice.

Extreme climatic events, notably episodes of intense rainfall, coupled with cultivation on steep erodible soils<sup>1</sup> and in riparian zones and bad logging practices over many decades, have massively increased the frequency of damaging and flash flooding. Flooding has also been aggravated by poorly regulated and excessive gravel and boulder extraction in the mid and upper catchments, with the economic damage compounded by inappropriate developments and squatter settlements in flood plains. For some river systems, extreme sedimentation and reduced hydraulic capacity may need to be rectified by dredging, but such flood control measures will only be beneficial if complemented by measures to reduce soil erosion and improve infiltration (i.e. rotational cropping, reforestation, retarding basins, bunds, Keyline farming/subsoiling and other systems to slow runoff) and relocate sensitive infrastructure away from areas which will be subject to increasingly regular flooding due to climate change.

Tourism is Fiji's major foreign exchange earner with visitors spending c. FJD 1.33 Billion annually; personal remittances come a distant second (c. FJD 331 million in 2013), followed by fisheries and agriculture. Fiji is

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<sup>1</sup> NB. Agriculture, both subsistence and for cash crops such as kava and ginger, can be conducted on moderately sloping lands with minimal soil erosion, but requires good planning, including a Keyline system and/or with bunds and vetiver, bamboo and/or pineapple belts, and preferably also with integration of trees/ agroforestry.

the major tourist destination in the South Pacific region with over 600,000 visitors per annum, which equates to approximately 2/3rds of the total Fiji population (currently estimated at 884,000 persons). The most important exports from Fiji in recent years have been fish (FJD 320 million), sugar (FJD 175 million), mineral water (FJD 161 million), gold (FJD 137 million), garments (FJD 89 million) and forest products (FJD 69 million)<sup>2</sup>. Agriculture contributes around 28% to total employment in the formal sector and indirectly employs more. The Agriculture sector is the third largest of the Fijian economy contributing FJD 416 million (9.35%) to the nations GDP; the largest contribution is from crops, horticulture and livestock production (3.6%), followed by the subsistence sector (2.75%) and sugar (1.7%). Mining has by far the greatest potential for rapid and long-term degradation of natural resources, including fisheries, potable water, biodiversity and nature-based tourism in two of the R2R priority catchments, i.e. Ba and Waidina.

## **1.2 ENVIRONMENTAL CONTEXT**

### **Climate**

Fiji enjoys a tropical maritime climate without great extremes of heat or cold. Due to the influence of the surrounding ocean the average annual temperatures change only about 2° to 4°C between the coolest months (July and August) and the warmest months (January to February). Around the coast, the average night-time temperatures can be as low as 18°C and the average day-time temperatures can be as high as 32°C. Past records, however, show extreme temperatures as low as 8°C and as high as 39°C. Rainfall is highly variable and mainly orographic, with the main islands having pronounced dry and wet zones. Tropical cyclones and depressions can cause high winds, especially from November to April. Fiji experiences a distinct wet season often bringing cyclonic activity, sometimes with great severity (November to April) and a dry season for the remaining year, controlled largely by the north and south movements of the South Pacific Convergence Zone (SPCZ), the main rainfall producing system for the region, with much of the rain falling in heavy and brief local showers. Annual rainfall in the dry zones averages around 2,000mm, whereas in the wet zones, it ranges from 3,000mm around the coast to in excess of 5,000mm in mountainous locations. Flooding is experienced almost every year in various low-lying areas. At intervals flooding may be very severe and is mostly associated with the passage of a tropical cyclone or depression that results in prolonged heavy rainfall. Most of the major urban and town centers on Viti Levu, are situated on the floodplain and near the mouth of the main rivers and so are flood prone. Labasa in Vanua Levu is also regularly impacted by flooding. Localised flash flooding during the wet season (November to April) is quite common. Storm tides and heavy swells can cause flooding of low-lying coastal areas especially during the passing of a severe cyclone. Periodic, sometimes strong droughts are experienced. A strong ENSO, El Niño event is most likely to result in a major drought over the entire country, as happened during 1982/83 and 1997/98 El Niño years, and is predicted to develop during the second half of 2014. However, even in an average year the rainfall in the dry zones can be low, with a few months of an extended dry period, to result in drought impacts.

### **Water resources, including hydro-power**

The island nation of Fiji has an abundance of freshwater on its larger islands where regular rainfalls ranging from 2,000 mm to 6,000 mm fall on the mountain catchments and into Fiji's diverse river systems. These river systems range from small mountain streams and steep torrents to that of very large mature rivers in the lowlands, meandering between flood plains and out to lagoon and ocean deltas generally sheltered by a fringing coral reef. These rivers generally assure good raw water resource security to Fiji's urban and peri-urban populations. However ageing infrastructure, limited maintenance leading to greater system losses, coupled with illegal taking of water and periodic extended dry periods can result in extended disruptions to service particularly in western provinces of Fiji. The Suva-Nausori corridor with more than 350,000 residents (and approximately 40% of Fiji's population) draws its supply directly from surrounding rivers, notably the

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<sup>2</sup> Reserve Bank data – 2012 exports. Changes in commodity values, the number of major shipments and other factors will result in year-to-year fluctuations in both value and ranking.

Waimanu River (and major tributary of the Rewa), relying on system storage in small reservoirs to meet its demand. In the drier west of Viti Levu, Nadi has a significant storage reservoir in the mountains, the Vatura Dam, with some small hydro electric energy generation benefits, although demand is large, losses are significant and water disruptions are frequent. The Monasavu dam in the central highlands is Fiji's largest storage reservoir impounding 133 million cubic meters of water for Fiji's largest power station located 625 vertical meters below the reservoir at Wailoa which supplies 80 megawatts or up to 60% of the country's energy needs. This is now supplemented by the Nadarivatu Hydro Electric Project at the head of the Sigatoka River. Up to 41 megawatts of energy will be produced but this will be seasonal due to limited water storage. The water from this system has been diverted into Ba catchment, and there has already been an observed rise in water levels in the Ba River. Fiji's potential for additional hydroelectric power generation on the larger islands, especially mini-hydro schemes, is significant. In recent times minihydros have been developed in two of the priority catchments, viz. Bukuya (Ba) and Muana (Tunulua). Likewise the potential for irrigated food production and commercial crops is very significant but remains largely undeveloped to date. The high profile export commodity of Fiji bottled water industry is abstracted from groundwater sources located predominantly in the northern area of Viti Levu. The larger rivers are generally monitored by hydrological stations, where flood flows commonly exceed several thousand cubic metres per second, especially in the Rewa, Fiji's largest river. Due to limited recurrent support for field operations and ongoing staff capacity issues accurate flood data in Fiji from Water Authority Fiji is limited. Increasing pressure on catchments from expanding populations and other activities such as mining and logging has the potential for further catchment degradation which may compromise water quality with possible impacts on water supplies for major growth areas in the future. Pressures of tourism and resort development are also placing stress on supplies, particularly in the Nadi area, where already high water demands on an ageing supply system can result in reduced or disrupted services.

## Biodiversity

Fiji's island ecosystems and species are unique, and included in the Micronesia-Polynesia biodiversity hotspot – considered to be one of the most threatened of earth's 34 biodiversity hotspots. Fiji has a landmass of 18,270 km<sup>2</sup> with the remaining natural forest covering approximately 860,000 hectares. These remaining forested areas have been of the highest priority for protection in the past 15 to 20 years. Diversity in ecosystems ranges from significant areas of natural forests to a wide range of marine ecosystems with extensive areas of mangroves and coral reefs. These diverse ecosystems are a haven to great biological diversity to which is economically and culturally important to Fijians.

Fiji's natural forests have nine principal native vegetation types. These are lowland rainforests, upland rainforests, cloud forest, dry forests, *talasiga* (grasslands), freshwater wetland vegetation, mangrove forest, coastal strand and also small island vegetation. Within these various vegetation types there are 1769 species of vascular plants in 476 genera where 10% of these genera are endemic to Fiji. Moreover, a checklist for non-vascular plants is still being developed. There is a remarkably high level of endemism in the Fijian flora, e.g. 72 of the 76 species of *Psychotria* (Family Rubiaceae) naturally found in Fiji are endemic. Many plant genera reach the eastern limit of their distribution in Fiji. Fiji is notable for having an endemic family of primitive trees, the Degeneraceae, distantly related to magnolias. There are two species, *masiratu* (*Degeneria vitiensis*) and *karawa* (*D. roseiflora*). A number of Fiji's 10 gymnosperm species are considered endangered including the endemics *kuasi* (*Podocarpus affinis*), *drautabua* (*Acmophyle sahniana*), and highlands *yaka* (*Dacrydium nausoriense*). Twenty-four of Fiji's 30 native palm species are endemic making Fiji a biodiversity hotspot for palms, with at least 8 of these palms are considered endangered or critically endangered. *Vilaito* (*Neoveitchia storckii*) is an endangered endemic native palm, restricted to lower-mid Rewa catchment, including Waidina River (near Naqali). There are eight species of mangroves and one hybrid species found in Fiji (Watling 1985), which support a diversity of bird, fish and invertebrates. There is a need for more baseline surveys of terrestrial biodiversity producing baseline key species distribution and abundance data to enable long term monitoring and evaluation. Much of the archived survey information from previous decades, such as forest inventories, has not been digitized and only exists in decaying paper form.

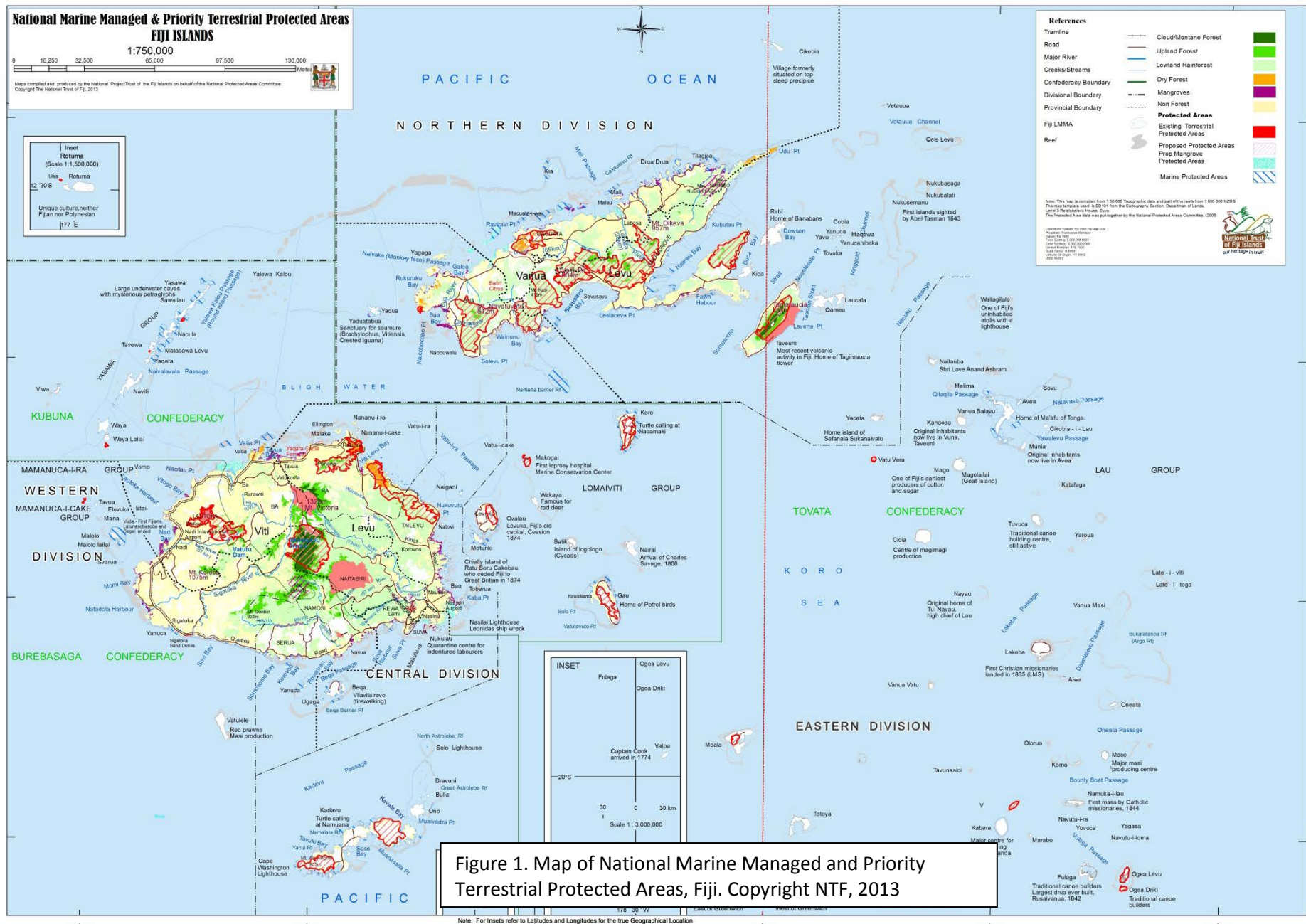
Terrestrial mammals in Fiji comprise six species of bats including the endemic genus/species and critically endangered Fijian monkey-faced bat (*Mirimiri acrodonta*), the vulnerable Fiji blossom bat (*Notopteris macdonaldi*), the endangered Fijian mastiff bat (*Chaerephon bregullae*) and a critically endangered population of the Pacific Sheath tail bat (*Emballonura semicaudata*) (Palmeirim *et al.* 2005). Furthermore, several of Fiji's avifauna has been listed as threatened within the IUCN red-list. Fiji has recorded 57 species of breeding land birds with 46% of these being endemic. In addition, Fiji's herpetofauna include 30 species of terrestrial reptiles, 3 endemic *Brachylophus* iguana species, 10 geckos, 12 skinks and 3 snakes. There have also been extensive surveys conducted for freshwater fauna. For Fiji, there are about 129 species of freshwater fish and crustaceans. Terrestrial invertebrate constitutes of one of the most diverse endemic groups in Fiji. There are 230 species of land snail in Fiji and 90% are native and 75% are endemics to the archipelago (Brodie and Barker 2011). Prasad (2006) reckons that the diversity in terrestrial invertebrates has been largely ignored, specifically arthropods, as these invertebrates tend to show fine localized endemism pattern. Thus, such localized endemism patterns establish the basis for terrestrial ecosystem connectivity.

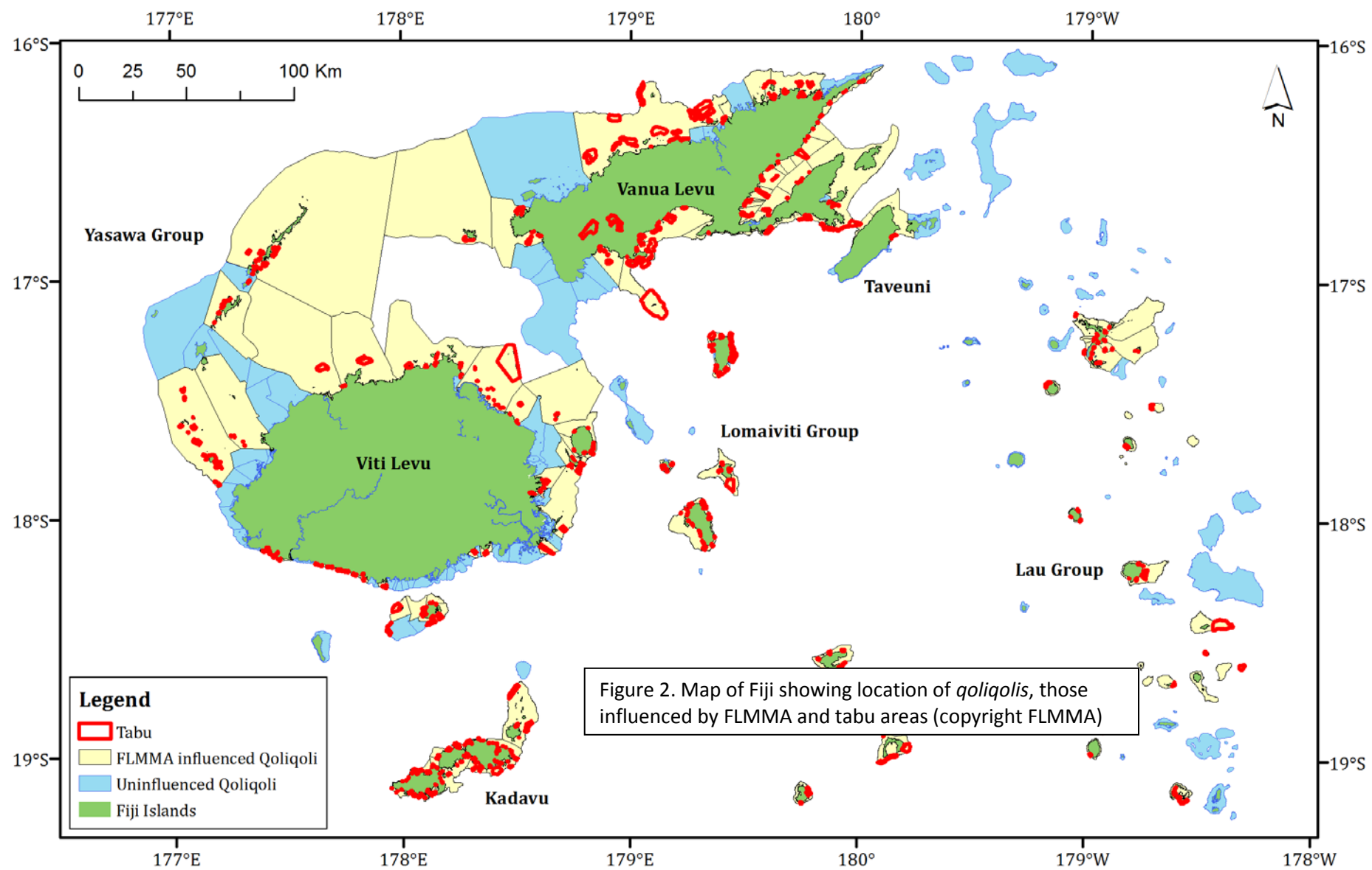
There have been several initiatives involving extensive studies to identify and conserve Fiji's biodiversity. Olson *et al.* (2010) have undertaken an analysis of the priority remaining forested areas for protection which considered minimum-area requirements for some native species, representation goals for Fiji's habitats and species assemblages, key ecological processes and the practical realities of conservation areas in Fiji. These authors recommended protecting 40 areas which comprise 58% of remaining native forests (almost a quarter of Fiji's landmass) and which compares with the Fiji policy goal of protecting 40% of remaining natural forests in its NBSAP. The six R2R catchments cover 4 of the 10 preliminary identified biotic provinces preliminarily identified by Olson *et al.* (2010) and several sub-provinces, viz. Viti Levu dry forest, Viti Levu Moist Forest (Mt Evans-Nausori and SE Viti Levu sub-provinces), Vanua Levu Moist Forest (Central and Eastern Vanua Levu sub-provinces) and Natewa. They also include three of the 40 identified priority forests for conservation, viz. Sovi Basin, Tunuloa/Natewa and Dogotuki (including Vunivua).

Fiji's remarkable marine biodiversity has arisen due to its geographic isolation, tropical locality and complexity in marine ecosystems and functions. Fiji's archipelago is covered by 10,020 km<sup>2</sup> of enormous coral habitat. Drew (2008) concluded that marine connectivity and endemism is high in the Fiji territorial waters hence the need to conserve marine ecosystems that are connected through various ecological processes. Fiji's coral reefs support over 342 stony coral species (Lovell and McLardy 2008), which build the habitat foundation for many of Fiji's 2304 fish species from 200 families (Seeto and Baldwin 2010) and lower invertebrates. Marine gastropod diversity has been documented through collection of about 760 species, held by the Smithsonian Museum (DoE 2007). Six species of marine turtles are recorded from Fiji's waters (green, hawksbill, loggerhead, flatback, Ridelys and leatherbacks), with two critically endangered species nesting on Fiji's beaches, viz. green turtle (*Chelonia mydas*), and hawksbill turtle (*Eretmochelys imbricata*) (DoE 2007), along with three species of sea snakes. Seventeen species of cetaceans have been reported or observed in Fijian waters, including minke whale (*Balaenoptera bonaerensis*), Bryde's whale (*Balaenoptera edeni*), humpback whale (*Megaptera novaeangliae*), short-finned pilot whale (*Globicephala macrorhynchus*), pigmy sperm whale (*Kogia breviceps*), sperm whale (*Physeter macrocephalus*), Blainville's beaked whale (*Mesoplodon densirostris*), Ginkgo-toothed beaked whale (*Mesoplodon ginkgodens*), Hector's beaked whale (*Mesoplodon hectori*), pantropical spotted dolphin (*Stenella attenuata*), spinner dolphin (*Stenella longirostris*), bottlenose dolphin (*Tursiops truncatus*), Fraser's dolphin (*Lagenodelphis hosei*), false killer whale (*Pseudorca crassidens*) and pygmy killer whale (*Feresa attenuata*). Fiji has pledged to protect 30% of Fiji's marine areas.

Both the forest and marine conservation pledges give added impetus to the work of the Protected Area Committee (PAC) in its mandate through the CBD's Program of Work for Protected Areas (PoWPA) to extend the Protected Area Network and the formulation of supporting management systems and policies to ensure the maintenance and sustainability of these protected areas. PAC's gap analysis in habitat protection has led to the recommendation of extension of the Protected Areas Network in Fiji as illustrated below in Figures 1 (NTF Map of National Marine Managed and Priority Terrestrial Protected Areas, Fiji) and 2 (Map of Fiji showing location of qoliqolis, those influenced by FL MMA and tabu areas).









## Fisheries

Fisheries are of immense commercial and subsistence values to Fijian peoples living in coastal areas and in the mid-lower reaches of major rivers. The total catch made by subsistence fishers from rural Viti Levu would have been estimated at 3,515 tonnes and the artisanal catch at 6,206 tonnes (Rawlinson *et al.* 1995). In the same study the estimated annual artisanal catch by coastal Fijians on Viti Levu was 2,767 tonnes which is worth FJD 7.2 million (@ FJD 2.60 per kg) corresponding to an average weekly income of FJD 34 per household. There is a need to re-assess the subsistence and artisanal values of Fiji's coastal fisheries, especially in the light of pressures to convert mangroves in Fiji. In Fiji, fisheries are being protected through awareness and enforcement campaigns by Department of Fisheries, NGOs (WWF, Seaweb) and media to prevent taking of undersized fish or harvesting of species such as *kawakawa* (groupers) and *donu* (coral trout) during their breeding season. There is also a need to protect sites of spawning aggregation (e.g. for groupers) and protect and re-stock sea cucumbers of high commercial value including white teatfish, black teatfish, as well as sandfish (for subsistence purposes). Over 60% of Fiji's commercially important fish and 83% of subsistence fish species depending on mangrove areas for some phase of their life cycle. The key mangrove ecosystems for fish nurseries in Fiji include three of the four priority river systems, viz., Ba, Labasa and Rewa, as well as Sigatoka. Some of the commercially and ecologically important fish species using mangroves as nurseries include sharks (hammerheads, bull and oceanic whitetip), mackerels including *wahloo*/ Spanish mackerel (*Scomberomorus commerson*), *saqa*/trevallies (including the great trevally or *Caranx ignobilis*— and targeted by fishing tourists), *nuqa* /rabbit fish (*Siganus* spp.) and *kanace*/sea mullet (*Mugil cephalus*). Three hammerhead shark species use the Rewa delta mangroves as nurseries or pupping grounds, viz. the endangered and largest of all hammerheads - great hammerhead (*Sphyrna mokarran*), smooth hammerhead (*Sphyrna zygaena*) and the scalloped hammerhead shark (*Sphyrna lewini*). The Pacific Mangroves Initiative has recently developed a mangroves declaration, which is expected to be signed by Environment Ministers from Fiji, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu at the Third International Conference on Small Island Developing States. The declaration is expected to emphasize mangroves as key coastal ecosystems that need conservation and to formalize regional cooperation on their conservation and sustainable use.

## Agriculture and Forestry

Fiji is a water-rich country, with opportunities for improved agriculture, agroforestry and plantation forestry production through improved water infiltration. There are also opportunities to develop a viable irrigation industry and renewable energy production through mini-hydro schemes. However, improvements in water resource management will require a coordinated effort across many sectors. This will involve improvements in catchment management; reductions in deforestation rates and active reforestation of degraded upland catchments; raising public awareness of wise water use and management; controls over agricultural activities and improvements in onsite waste disposal of both domestic and industrial wastewater.

Whilst there has been a decline in logging of native forests for timber in recent years<sup>3</sup>, pockets of primary forest continue to be cleared by yaqona seeking more fertile, virgin forest soils: yaqona farming takes place in the hinterlands of all of the R2R priority catchments<sup>4</sup>. To date, there have been no or minimal attempts to work with yaqona farmers to restore native trees at the conclusion of the single 3-4 year yaqona rotation. There is opportunity to develop improved fallow systems (replanting with native nitrogen-fixing trees in year 3-4 of this cycle) and to promote the rapidly developing raintree pockets for yaqona cultivation.

Approximately 58% of Fiji currently has forest cover, with about 52% covered by native forests (although many secondary and degraded/opened through logging) and 3.3 % of big-leaf mahogany (*Swietenia macrophylla*) plantations and 2.7% Caribbean pine (*Pinus caribaea*) plantations. Native forest logging has declined substantially in recent years due to limited availability of well-stocked accessible forests, and an

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<sup>3</sup> This is in due to lack of accessible, unlogged forests with substantial volumes of commercial timbers, and also partly due to replacement by plantation timbers

<sup>4</sup> There are limited income earning opportunities in most of the upper and hinterland areas of the catchment – distance and expense in getting agricultural produce to market has promoted a focus on yaqona production which may be readily dried and made non-perishable and with a high unit value in dried form, e.g. FJD 25-30 per kg.



increase in timber availability from the extensive plantation (both hardwood and conifer) resources. Mahogany plantation resources are under the control of the Mahogany Industry Council, and strictly controlled through the 2010 Mahogany Industry Development Decree and the 2011 Mahogany (licensing and branding) Decree. Under the 2011 decree the Mahogany Industry Council is empowered to grant a licenses to purchase plantation grown mahogany logs from Fiji Hardwood Corporation Limited (FHCL). *Swietenia macrophylla* plantations are mainly in the wet zone and *Pinus caribaea* plantings are mainly in the drier, western parts of Viti Levu and Vanua Levu. Both mahogany and pine have been developed into substantial export industries, with an annual value of around FJD 30 million (mahogany timber) and FJD 18.5 million (pine chips). Mahogany has become the main hardwood in use in the Fiji furniture industry, while preservative treated pine timber and poles are the main locally produced construction timbers with domestic pine sales around FJD 12.5 million per annum in 2013. Fiji's pine plantations have been developed on long-degraded grasslands, but suffer from indiscriminate burning with low or patchy stocking in burnt areas: the main pinewood products are preservative treated poles and timber for local construction and woodchips for export.

A total of 102,613 hectares has been protected under the Forest Decree 1992 as Forest Parks and Reserves, which is around 10 percent of the total forest area in Fiji. This includes 17 forested areas have been proclaimed and maintained as Forest Reserves and seven areas proclaimed as Nature Reserves and PA managed by NTF, as tabulated below (Table 1). Other informal protected areas afforded different levels of protection include Nabukelevu – important bird area, Dogotuki – REDD+, Emalu – REDD+, Drawa – Sustainable Forest Management (SFM), Nakavu – SFM, Kubulau – Ridge to Reef, Natewa/Tunuloa – important bird area, Upper Navua Conservation Area (Ramsar site) and Nasaota Island in Rewa – marine terrestrial. The DoE websites states that Fiji currently has 48 terrestrial protected areas covering 488 km<sup>2</sup> or 2.7% of the nation's land area. Eight Nature Reserves were established under Forestry Legislation in the 1950-60s- whilst these remain in place they have never received any formal conservation management. Only three of these have ecological significance- Ravilevu, Tomanivi and Savura. The Ravilevu Nature Reserve and the Tomanivi Nature Reserve are currently under advanced plans for de-reservation and a return to *iTaukei* land tenure. These reserves are listed in a recent Department of Forestry (DoF) report (Anon, 2012) report that found a total of 1026 km<sup>2</sup> protected under the Forest Decree 1992 as Forest Parks and Reserves, or approximately 10 percent of the total forest area in Fiji.

**Table 1. List of larger forest reserves (>1000 hectares)**

Reserve Type Location / Name	Province	Established Proclaimed	Area (ha)
<b>FOREST RESERVES</b>			
Buretolu	Ba	1926	1,199
Nadarivatu-Nadala	Ba	1954	7,406
Korotari	Cakaudrove	1961	1,048
Taveuni	Cakaudrove	1914	11,300
Ravilevu	Cakaudrove	1959	4,019
<b>NATURE RESERVES</b>			
Tomanivi	Ba	1958	1324
Ravilevu	Cakaudrove	1959	4022
<b>OTHER PARKS AND RESERVES</b>			
Batiwai Protected Forest	Serua	1956	15,750
Sovi Basin Protected Area	Naitasiri	2012	16,344
Wabu Nature Reserve	Ra	1992	2,907

Source: updated from DoF data 2007

## 1.3 SECTORAL, INSTITUTIONAL AND POLICY CONTEXT

### 1.3.1 Demographic and Employment Profile by Catchment

The total population in the six catchment areas identified for the R2R programme is 150,496 with the vast majority (97%) living in four catchments viz. Labasa, Ba, Tuva and Rewa (Waidina and Rewa delta). The gender distribution for males and females is 76,831 and 73,665 respectively, a difference of 3,166 in favour of males. Women leave to get married and there is also a general tendency for females migrating to urban centres for employment and education purposes and moving away from the difficult and arduous tasks of rural living (poor infrastructure/utilities) when compared with males who are entrusted with the traditional role of leadership as heads of households, churches, villages and land owning units and therefore enjoy a more permanent status. The interview and visits to the catchment communities showed women not only looking after the homes/families but also planting/ tending the gardens, harvesting and selling them at the markets/wholesale sources on weekly basis. Life for women in remote rural parts of Fiji is difficult. Proposed livelihood projects under R2R and other available micro-financing facilities with the government and NGOs would provide much needed women empowerment and support necessary under the current circumstances. Promoting gender equality and women empowerment is one of three MDG still to be achieved by Fiji. At the national level, 51% of the population are in the urban centres and 49% in the rural areas due to urban drift - both adversely impact the viability and structure of rural communities and the towns/cities as a result of the stress placed on urban infrastructure. With housing for example, inadequate housing stock and land has contributed to squatters with 78,000 people living in 128 squatter settlements country- wide.

**Table 2. Population in each catchment by gender**

CATCHMENT AREA	TOTAL POPULATION	MALE	FEMALE
Ba	43,911	22,628	21,283
Labasa	54,448	27,228	27,220
Tunuloa/Natewa	3,428	1,753	1,675
Tuva	18,619	9,872	8,747
Vunivia/Dogotuki/Udu	535	252	283
Rewa/Waidina	8,082	4,165	3,917
Rewa Delta	21,473	10,933	10,540
<b>Total</b>	<b>150,496</b>	<b>76,831</b>	<b>73,665</b>

Source: FBOS July, 2014

In terms of landscape demographics the population in the rural catchment areas is primarily agrarian, predominantly indigenous and contained within traditional rural village/community settings except for the major urban centres of Ba and Labasa. In three catchments more than 50% of the population is made up of Fijians of Indian descent, viz. Labasa (35,900), Ba (29,736) and Tuva (9,843). However *iTaukei* generally make up more than 80% of the remaining rural catchment population with 'others' category at 5% in the coastal resorts and hotels in the lower catchment sites and Chinese farmers in the ginger and vegetable growing regions in the mid and upper catchments.

**Table 3. Population in each catchment by ethnicity**

Catchment	Total Population	Fijian/ Rotuman	Indian	Others
Ba	43,911	13,490	29,736	685
Labasa	54,448	17,324	35,900	1,224
Tunuloa	3,428	3,367	14	47
Tuva	18,619	8,602	9,843	174

Rewa - Waidina	8,082	8,019	19	44
Rewa - delta	21,473	19,143	2,177	153
Vunivia/Dogotuki/Udu	535	533	0	2
<b>TOTAL</b>	<b>150,496</b>	<b>70,478</b>	<b>77,689</b>	<b>2,329</b>

Source: FBOS July, 2014

Demographic profile depicted below confirms the trend in all catchment sites for high infant and child/youth populations (from 0-19 years of age) which for all catchments constitute 86,972 almost 60% of the total catchment population. However the youth figures decline in level above the 20 year old category and which partly reflects outward migration of high school/tertiary students and young people for education/job opportunities elsewhere. Nevertheless, and despite youth urban drift, the number of young and working age adults (20-54 years) at 74,483, is significantly higher than the combined adult population put together. Generally this is good sustainability indicator with a large economically active group available to facilitate community development project implementation, in this case the R2R.

**Table 4. Population in each catchment by age distribution**

Age Group	Ba	Labasa	Tunuloa	Tuva	Vunivia/ Dogotuki/ Udu	Rewa Waidina	Rewa Delta	Total
0-4	3,708	4,602	448	1,671	78	1,161	2,398	14,035
5-9	3,444	4,655	497	1,559	53	1,064	2,285	14,066
10-14	4,138	5,705	391	1,746	32	943	2,291	15,246
15-19	4,384	6,201	179	1,829	19	575	1,837	15,024
20-24	4,142	4,247	210	1,723	43	595	1,796	12,756
25-29	3,763	4,152	219	1,547	45	599	1,630	11,955
30-34	3,132	3,964	283	1,466	43	603	1,684	11,175
35-39	3,044	3,982	227	1,283	46	511	1,309	10,402
40-44	3,266	4,240	219	1,315	45	464	1,316	10,865
45-49	3,068	3,670	198	1,190	22	374	1,200	9,722
50-54	2,471	2,813	133	908	26	309	948	7,608
55-59	1,801	2,067	111	731	24	257	826	5,817
60-64	1,444	1,633	102	623	11	237	692	4,742
65-69	889	1,151	90	463	25	168	532	3,318
70-74	546	677	53	249	13	98	310	1,946
>75	671	689	68	316	10	124	419	2,297
<b>TOTAL</b>	<b>43,911</b>	<b>54,448</b>	<b>3,428</b>	<b>18,619</b>	<b>535</b>	<b>8,082</b>	<b>21,473</b>	<b>150,496</b>

Source: FBOS, Feb 2014

The Agriculture, Fisheries and Forestry sectors although providing important sources of livelihoods, income and employment with the total number engaged in these sectors at 14,439 (or 11% of the population) is nevertheless marginal. Besides for forestry plantations and mini-hydro schemes, development and industry is almost non-existent in the upper catchment areas. Sugar remains a major agricultural industry in Ba, Labasa and Tuva. Elsewhere, agriculture and fisheries is undertaken by the majority of families on a subsistence basis with some sale at municipal and street markets, and a few exporters/processors and wholesalers on a more commercial basis. All villages visited are engaged in agricultural activities but beset by small scale, lack of inputs other than labour, low farm efficiency and remoteness from markets. Agricultural commodities such as root crops which are commonly produced by iTaukei farmers has a thin, rather inelastic market which can become quickly oversupplied (when production outstrips supply, e.g. in absence of natural disasters or overproduction of a particular crop). Good land use knowledge and practice for efficiency, diversification, technology and organised farming/marketing are necessary to improve

productivity. The number of people engaged with fisheries, both freshwater and marine fisheries, in the catchment sites is 1,062: these would be those involved at a commercial scale, but there would be a much greater number of people involved in subsistence harvesting and gathering of fish products, such as mussels, prawns, fish, crabs and seaweed. Fish sale is on both retail and wholesale basis. There is pressure to curb overfishing in both onshore and offshore fisheries. There is need to better protect and manage the mangrove fisheries, given their crucial role as fish nurseries and productivity, and to develop aquaculture/mariculture to relieve pressure on the reef ecosystem. Within the Forestry Sector, pine logging and also harvesting of native timbers and sawmilling are the major activities. The number of workers engaged in this industry is 421 with the majority sourced from Ba, Labasa and Tuva. For all three sectors, improving production of traditional root crops and vegetables, agroforestry, and aquaculture/mariculture can make significant contribution to the economy, promote food security and create better opportunities for sustainable livelihoods.

**Table 5. Employment in each catchment by primary industry sector**

Catchment	Total population	Agriculture	Forestry	Fisheries
Ba	43,911	4,746	109	209
Labasa	54,448	4,076	107	575
Tunuloa/Natewa	3,428	548	2	25
Tuva	18,619	2,128	200	43
Vunivia/Dogotuki/Udu	535	182	2	11
Rewa - Waidina	8,082	1,173	1	1
Rewa Delta	21,473	103	0	198
<b>Total</b>	<b>150,496</b>	<b>12,956</b>	<b>421</b>	<b>1,062</b>

Source: FBOS, Feb, 2014

Overall there is low employment in the catchment sites at 88,548 -71% out of total catchment working age population of 150,496. Interestingly one of the lowest unemployment rate was for Vunivia with 62%, with almost all employment being self-employed in agriculture sector, presumably mainly yaqona farming. Thus the seemingly high unemployment rate for Waidina at 81% also does not take into account self-employment (under-employment in agriculture with yaqona, ginger and wild harvests. There is close correlation between poverty, unemployment and urban drift. The national poverty figure re HIES 2009 is 31%. Poverty amongst rural populations was assessed by the World Bank and Head Count Surveys to be much higher at 44%. There is greater poverty in the Northern Division (mainly Vanua Levu). Poverty amongst the *iTaukei* population stands nationally 57 % cf. 38% for Fijians of Indian descent. The World Bank study has recommended focus on rural development including income-generating opportunities in the agriculture sector. The household number assessed as 'Not Economically Active' is a high 80,516 which is 54% of the total catchment population and with those on 'Subsistence Only' at 7,299 makes catchment unemployment level much higher. The same trend applies in Ba, Labasa, Tuva and Rewa delta with those categorized as 'Not Economically Active' constituting more than 50% of their individual catchment populations. There are more men than women who work for money, viz. 18,315 and 4,928 respectively, and those economically active at 25,506 for males and 8,670 for females. Similarly, those not economically active have more females at 41,614 cf. males at 26,047. Notably the R2R programme is rural oriented and has provision for livelihood projects to increase income earning capacity and address urban drift, directly contributing to national development efforts. The Report on the R2R field visits showed marginal upper catchment villager weekly earnings from agricultural produce at FJD 50-100 most of it going to the high one way hire of transport costs (e.g. FJD 150 for carrier to town) and basic necessities: weekly savings if any at all were less than FJD 20 dollars) – all figures far below the poverty threshold.

**Table 6. Employment status in each catchment by household and gender**

## MALE & FEMALE

Catchment	Total	Work for money	Work for money & sales	Money work & Subsist.	Subsist. Only	Unemployed with subsist.	Unemployed actively looking	Economically active	Not economically active
Ba	43,691	11,035	837	1,337	791	153	1,672	14,153	27,866
Labasa	54,448	12,000	780	2,399	1,673	344	1,254	17,196	33,182
Tunulua	3,428	99	97	566	661	91	57	1,514	1,857
Tuva	18,619	4,405	390	404	165	158	1,397	5,522	11,700
Waidina	8,082	279	232	1,071	1,981	254	156	3,817	4,109
Rewa delta	21,473	2,843	339	871	2,076	721	1,327	6,850	13,296
Vunivia/ Dogotuki-Udu	532	30	3	112	117	2	2	324	206
Total	150,273	26,286	2,288	6,356	7,299	1,565	4,468	43,854	80,516

## MALE

Catchment	Total	Work for money	Work for money & sales	Money work & Subsist.	Subsist. Only	Unemployed with subsist.	Unemployed actively looking	Economically active	Not economically active
Ba	22,505	8,831	687	1,123	273	99	857	11,013	10,635
Labasa	27,228	9,357	645	2,125	472	193	688	12,792	13,748
Tunulua	1,753	58	83	468	256	48	32	913	808
Tuva	N/A								
Waidina	1,508	51	80	320	220	46	21	717	770
Rewa delta	173	18	53	0	0	0	16	71	86
Vunivia/ Dogotuki-Udu	N/A								
Total	53,167	18,315	1,548	4,036	1,221	386	1,614	25,506	26,047

## FEMALE

Catchment	Total	Work for money	Work for money & sales	Money work & Subsist.	Subsist. Only	Unemployed with subsist.	Unemployed actively looking	Economically active	Not economically active
Ba	21,186	2,204	150	214	518	54	815	3,140	17,231
Labasa	27,220	2,643	135	274	1,201	151	566	4,404	22,250
Tunulua	1,675	41	14	98	405	43	25	601	1,049
Tuva	N/A								
Waidina	1,484	37	29	64	353	35	19	518	947
Rewa delta	149	3	0	0	3	1	5	7	137
Vunivia/ Dogotuki-Udu	N/A								
Total	51,714	4,928	656	650	2,480	284	1,430	8,670	41,614

Source: FBOS, July 2014

**Table 7. Type of employment in each catchment**

Catchment	Population	Employee	Employer	Self employed	Unpaid family worker	Unemployed
Ba	43,911	10,479	332	3,135	4	29,961 (68%)
Labasa	54,448	9,428	600	3,587	9	36,015 (73%)
Tunulua/Natewa	3,428	109	9	675	0	2,635 (77%)
Tuva	18,619	3,759	173	1,481	5	13,201 (71%)

Vunivia/Dogotuki/Udu	535	17	0	85	0	167 (62%)
Waidina (Rewa)	8,082	269	23	1,221	0	6,569 (81%)
Rewa delta	21,473	NA	NA	NA	NA	NA
Total	150,496	24,061	1,137	10,184	18	88,548

Source: FBOS, Feb, 2014

### ***1.3.2 Socio-Economic Considerations***

The landscape particularly in the remote upper catchment of Ba, Tuva, Waidina, Vunivia/ Dogotuki and Tunuloa remains largely undeveloped, although often degraded by fire and previous poor logging practices, unlike the middle/lower catchment sites and the urban communities within the same catchment areas. With roads for example, the inland/ upland catchment areas generally have either dirt or gravel roads in poor/ degraded conditions whilst some villages in the same district are still not connected by roads. Some do not have bridges and people, horses and vehicles have to wade across streams and rivers to get to the village, e.g. Delailalasakau in Waidina, Nalele in Tuva and Marou in Ba. Comparatively mid/ lower catchment villages are well connected have tar-sealed roads, highways and municipal roads e.g. in Ba, Labasa and Tuva. Generally the communities visited are well served with primary schools which are easily available, either in the villages or accessible with public transport/ walking distance. However secondary schools/tertiary institutions are only accessible in the mid/ lower catchment and urban centres. Thus the outward migration of youth from upper catchments to these areas for higher education opportunities. Overall national school enrolment figure is over 90% which is expected to increase with free education recently introduced by government this year. Telecommunication and wireless services, are generally available, although with patchy connectivity, in remote areas. Middle/Lower catchment sites have regular telecommunication and electricity services from the national power supply grid. The standard of houses in the villages visited was generally good and made up of concrete, corrugated iron and wood. The extended families live together especially in the upper catchments unlike the mid/lower catchment and towns where the nucleus family live on their own. Although national electricity coverage is high at 90%, access to electricity is generally limited in the upper catchment areas - some villagers visited are serviced by the FEA, some with their own hydro power (e.g. Bukuya, Ba Province) some still have kerosene/benzene on their basic items shopping list. Some such villagers in the catchment sites visited have proposed solar and mini-hydro as livelihood projects under R2R. Cooking fuel in the upper catchment sites is by open fire which has implication on sustainable sources of fuel wood. Fuelwood use as main fuel for rural areas stands at 77%. Some villages visited have proposed smokeless stove as a livelihood project under R2R, which would also contribute to maintaining forest cover and carbon stocks.

The national figure for safe/treated water supply is 80%. Comparatively, domestic water access in the upper catchment is generally communal reservoirs in inland water sources and piped to the village, largely untreated. There are some who still use wells, water tanks, rivers, creeks. All such areas are on the Ministry of Health watch list as there have been incidents of water system being compromised and typhoid cases occurred e.g. Nanoko in Ba catchment. In comparison, the mid/lower catchment are serviced by the Fiji Water Authority and there have been no or only isolated reported cases of water-borne diseases. Toilets in the upper catchment are either water sealed or pit and in the mid/lower catchment it is flush toilets and septic tanks generally unless on the sewer line. Health services are not readily available in upper catchment communities, whom have to travel long distances to the nearest hospital/health centres. Pregnant women may have to stay with relatives in the towns for days/weeks before and after delivery of their babies in the town hospitals Otherwise the village nurse or midwives attend to delivery as a last resort. Rural market collection centres might be made multipurpose to also house/provide all other socio economic services lacking in the upper catchment.

In conclusion, some biophysical and socio-economic data have either not been collected or are not readily available and thus the general nature of analysis undertaken. Although useful in providing general indicators, the R2R field visit reports and other reports could not be properly validated by FBOS official statistical information which are themselves already two years out-of-date and with random sampling are only estimations. In this regard it should also be noted that whilst most of the socio-economic data of

catchment villages/settlements are regularly provided by the village *Turaga ni Koro* at the Provincial level with the *Roko* and sent to HQ in Suva there is a gap as HQ in Suva does not have the capacity to coordinate and conduct statistical analysis, data storage and research.

### ***1.3.3 Land tenure and land use (adapted from Trenorden 2013)***

Land tenure in Fiji falls into three broad classes, viz. *iTaukei* land, State land and Private Freehold land, plus Rotuman land (0.25%). The three categories of land present in the six R2R catchments are:

- a. *iTaukei* land: Approximately 88% of land in Fiji is owned by *iTaukei* (or indigenous Fijians) and is held as customary land. The social structure of *iTaukei* is as follows: the *vanua* (tribe; numbering 215), the *yavusa* (clan; 1,390), the *mataqali* (sub-clan; 5,280) and the *itokatoka* (extended family unit; 9,979). *iTaukei* land is land which is 'the rightful and hereditary property of native owners, whether of *mataqali* or in whatever manner or way or by whatever divisions or subdivision of the people the same may be held'. The *mataqali* are not the only landowning unit; other traditional landowning or proprietary units include the *yavusa* and *itokatoka*. However, for a long time the *mataqali* has been 'legally entrenched as the central proprietary unit'. There are 5,280 landowning units. The TLTB has control of *iTaukei* lands, except those lands which are registered in the Land Use Bank or which are the subject of a lease under the Land Use Decree 2010. When land is leased by the *iTaukei* Land Trust Board (TLTB) on behalf of *iTaukei* it is registered in the Register of *iTaukei* Leases and is subject to the provisions of the Land Transfer Act. Landowners cannot lawfully lease their land directly to a lessee, nor can they lawfully grant a licence or any other right over the land. Leases, licences, etc., may only be granted by the TLTB or through the Land Bank (leases). The exceptions concern the grant of rights under the Forest Decree, the Mining Act, the State Acquisition of Lands Act, and the Petroleum (Exploration and Exploitation) Act, but even so, the holder of a prospector's right must inform the TLTB when he intends to enter *iTaukei* land and a licence under the Forest Decree cannot be issued without the prior approval of the TLTB.
- b. State land (3.9%), being all public lands in Fiji including foreshores and the soil under the waters of Fiji, may only be sold, leased or the subject of a licence in accordance with the provisions of the State Lands Act.
- c. Private Freehold (7.9%) land which can be bought, charged, encumbered, and sold without restriction, whilst subject to the provisions of the Property Law Act and the Land Transfer Act.

The implications of these land tenure categories for the R2R project are as follows:

- Given that the vast majority of land and natives forests is in *iTaukei* ownership, including priority areas for biodiversity conservation, any sustainable conservation initiatives will involve the *iTaukei* resource owners/*mataqalis* as the prime stakeholder, including in all aspects of planning and implementation of protected areas (as planned in Component 1 of R2R) and the development of a permanent forest estate. These activities must include long-term financing strategies such that the protected and reserved areas are worth more to their owners than if converted or unsustainably utilized.
- Given that the State owns foreshore, which is between the mean high water and the mean low water marks, the GoF also own the majority of mangrove forest in Fiji (although fishing rights within mangrove ecosystems belong to the respective *qoliqoli*). It is imperative that mangroves are properly valued and not seen as 'cheap and easy' pieces of real estate for development and conversion. The R2R project will include PES and fisheries valuations of mangroves connected to four of the priority catchments.
- Freehold land is at a premium in Fiji and, with possible exception of a few smaller privately owned islands, is not well matched to biodiversity conservation priorities.

### ***1.3.4 Institutional framework***

#### **Environment**

Fiji's major instruments for conservation and environment are the National Environment Strategy (NES) and the National Biodiversity Strategy and Action Plan 2010 (NBSAP), which outlines the implementation of

commitments under CBD. The NES and NBSAP have been endorsed by Cabinet and set the framework for conservation of biological diversity in Fiji's forests. According to NBSAP, conservation and sustainable management of Fiji's natural forests is the single most important means of conserving the vast majority of Fiji's endemic fauna and flora. It provides further directives for the establishment of a comprehensive and representative system of forest reserves and conservation areas, and emphasizes the role of resource owners and local communities in conservation and sustainable management of natural forest. The main piece of legislation is the 2005 Environment Management Act (EMA). Its key features include:

- The setting up of a National Environment Council (NEC) to coordinate the formulation of environment related policies and plans;
- The requirement for Environment Impact Assessments to be binding on all parties, including Government;
- Permits to discharge waste and pollutants into the environment;
- National Resource Inventories, National Resource Management Plan, National State of the Environment Report, and the National Environment Strategy; and
- Declarations, enforcement orders, stop work notices will ensure environmental compliance according to the laws.

The EMA regulates the application of principals of sustainable use and development of natural resources. The National Environment Council (NEC) was set up to advise the Minister for Environment on the views of the public, private sector, NGOs, local authorities and others. The NEC is chaired by the PS Environment and its broad membership composition is designed to reflect all those groups affected by environment management measures and with environmental or conservation interests. NEC functions include:

- Approval of the National State of the Environment Report,
- Approval, monitoring and oversight of the National Environment Strategy (NES),
- Provide a forum for discussion of environmental matters,
- Make resolutions on public and private sector efforts on environmental issues,
- Ensure implementation of commitments to regional/international forums on environment and sustainable development are implemented,
- Advise the GoF on international/regional conventions, treaties and agreements relating to environment, and
- Perform any other functions under EMA or any other written law.

## **Climate change**

Fiji has developed a comprehensive National Climate Change Policy (Anon/GoF 2012). The Roadmap for Democracy and Sustainable Socio-economic Development 2009–2014 defines the implementation framework for Fiji's 2008 People's Charter. The National Climate Change Policy serves as an implementing tool for many of the strategies outlined in the charter, such as:

- Environmental protection, sustainable management and utilization of natural resources;
- Strengthening institutional capacity for environmental management; and
- Strengthening food security.

Specific climate change mitigation strategies relevant to the R2R project in Fiji's Climate Change policy include:

- Mitigation measures focused on maintaining forest carbon stocks and increasing sequestration of carbon through forest conservation, reforestation, afforestation and enrichment planting will also contribute to biodiversity conservation, improved watershed management, improved food security and improved waterway conditions; and
- Conservation and sustainable management of mangroves will protect a large carbon sink and reservoir, while providing physical foreshore protection, marine breeding grounds, and healthy coral reef systems.

## **Forestry and REDD+**



The Rural Land Use Policy (RLUP), as endorsed by Cabinet in 2005, provides the umbrella framework for forest policy with regard to forest land use planning and sustainable use of forest resources. It stresses the need for a sound forest land use classification, based on comprehensive national forest programme and appropriate legislation, and proposes a National Forest Inventory (NFI) and the designation of a permanent forest area that also provides for forest conservation. The Rural Land Use Policy makes specific reference to protection, rehabilitation and sustainable management of natural forests as well as the sustainable use of forest plantations with regard to maintaining site quality. It links sound forest land use to prevention of land degradation, along with soil and watershed conservation.

In 2007 Fiji developed a Forest Policy Statement which covers:

- Conservation of forests and biological resources,
- Integrated forest resources management,
- Resource owners and community involvement in sustainable forest management
- Upgrading the forest industries and promotion of high quality products and
- Institutional framework and human resources.

Together with its National Forest Program 2010 – 2012, this policy helps guide the operations of the Department. Complex forestry legislation, involving about 26 pieces of law and regulations, is currently under review with a plan to rationalize.

Fiji's national REDD+ programme began in 2009, and its activities are guided by the National REDD+ Policy, the 2012 National Climate Change Policy and the draft National REDD+ Strategy (<http://fiji-reddplus.org/>). Fiji has made excellent progress with its REDD+ strategy and this augers well for documenting the increase in forest carbon stocks due to R2R project and being able to secure REDD+ payments for landowners and/or Fiji Government including through the World Banks Forest Carbon Partnership Facility.

## **Fisheries**

Community-based fisheries management projects taking place in Fiji in the 1990s were so successful at integrating stakeholders into the management and monitoring of their resources that joining the Network helped catalyze the spread of the Locally Managed Marine Area approach. Established in 2000, the Fiji Locally Managed Marine Area Network (FLMMA) aims to bring modern conservation methods to seaside communities, in order to ensure the sustainability of their individual *qoliqoli* (traditional fishing ground rights group). The number of LMMAs increased rapidly between 2004 and 2009. The location of Fiji *qoliqolis*, those influenced by and/or participating in FLMMA, and *tabu* (no take) areas is shown in Figure 2. With the exception of Tuva (Vanua o Cuvu and Tuva *qoliqoli*), each of the *qoliqolis* connected to the R2R priority catchments have been influenced and/or are a part of FLMMA. FLMMA's approach has been to invite concerned villages to seek its help in imposing bans on their *qoliqoli* for an average of three years to help fish population recover. At the end of these three years, the villagers can then review the taboo areas through informed monitoring activities and decide whether to increase the taboo area or extend the taboo period or even can apply other appropriate management options. In 2005 the Fiji Government made a declaration to effectively protect 30% of its inshore and offshore waters by 2020. The LMMMA approach has brought back to life fading traditional management practices and has been formally adopted by the state government, which is in the process of officially transferring ownership of coastal areas and resources back to traditional land-owning clans. Results of biological monitoring indicated management effectiveness varied among MPAs due to MPA size, productivity, level of compliance with management rules, and duration and level of protection, i.e. frequency of permitted harvests within *tabu* areas (Jupiter and Egli 2011). Several Conservation NGOs are closely involved in supporting and working with local Fijian communities and *qoliqolis* to develop their LMMAs, including the FLMMA secretariat, WCS, WWF, CORAL, Seaweb Asia Pacific, IUCN and PCDF. The key approach now being followed in FLMMA is adaptive co-management, which has been successfully pioneered in the Kubulau District with the major involvement of WCS (Weeks and Jupiter 2013). In Kubulau this entailed a careful and highly consultative review of protected area boundaries and management rules in order to enhance management effectiveness and improve -3resilience to climate change. Considerations included the need to:

- Improve compliance with management rules by clarifying and simplifying MPA boundaries;
- Increase the size of the smallest tabu areas to protect species with larger home ranges, and
- Consider whether rules dictating the frequency and intensity of permitted harvest were compatible with management objectives.

In order to develop a more resilient MPA network, including to climate change, the identified needs were to:

- Spread risk by protecting multiple examples of habitat types;
- Include critical areas most likely to survive disturbance events; and
- Incorporate biological connectivity to ensure protected areas act as mutually replenishing networks that can facilitate recovery after disturbance.

There is a pressing need for the *qoliqolis* with assistance and support from the Department of Fisheries to review, better plan and reconfigure/ rationalize/ expand/ confirm location of marine protected areas (LMMA and tabu areas) in the respective catchments. However, given that there is not always a neat match between the river discharge zones and the distribution of *qoliqolis*, the logical approach is to consider the relevant *qoliqoli* in its entirety for the planned re-appraisal and reviews of existing LMMAs/marine protected areas and their management. Given the pressures on land and natural resources on the two main islands of Fiji; limited livelihood opportunities, especially in more remote areas within the catchments; many of the protected areas in Fiji will need to fall within category VI viz. Protected area with sustainable use of natural resources: this is especially the case for LMMAs and recognizes the need to sustainably manage these fisheries for livelihoods and food security.

## **Water**

At least four separate agencies share primary responsibility for regulating water use or ensuring adequate water delivery to the public: (i) Drainage and Irrigation (Ministry of Agriculture) regulates the uses of water for irrigation of farmland; (ii) the Department of Lands (in the Ministry of Lands and Mineral Resources) has responsibility for the utilization and management of water resources within river basins; (iii) the Department of Mineral Resources (in the Ministry of Lands and Mineral Resources) has authority for licensing the abstraction of groundwater to be used for production of bottled mineral water; and (iv) the Water and Sewerage Section, Public Works Department (in the Ministry of Infrastructure and Transport) is involved with the delivery of safe drinking water to the public, primarily in urban areas. Correspondingly, there is no piece of legislation that confers authority on a single government entity for water management. As a result, there is no clear ownership within any single government department when it comes to addressing the issues of regulating, managing, and delivering water resources and services.

## **Integrated land and catchment management**

The DoE has prepared an integrated coastal management framework (Dumaru 2011) which might be expanded to embrace integrated land, water, coast and marine management. The Towards Coastal and Watershed Restoration for the Integrity of Island Environments (COWRIE) project and IUCN Water and Nature Initiative (WANI) have produced training manuals for communities in both English and Fijian on:

- A guide to planting local tree species for forest restoration;
- How to build a simple, low-cost community nursery;
- What is a watershed and why look after it; and
- Vetiver - the proven soil conservation technique.

Nadi Basin Catchment Committee - The NBCC was established as the governance structure to oversee and coordinate the IWRM Nadi Demonstration Project implementation, and provides a useful model and lessons for the planned CMCs for the R2R project. The NBCC acted as a multisectoral body at management level, and represented the strength, capacity, policies and enforcement powers of the departments and organizations involved, but was not formally mandated in law (as had been envisaged under a revised Land and Water Conservation Improvement Act). The members of the NBCC included government

representatives, statutory bodies, provincial offices and community representatives, academia, NGOs and regional organization representatives - covering the key land and water resources stakeholders. The NBCC was widely viewed as being highly successful, with one strength being a Chairperson drawn from the private sector. On completion of the project in early 2014, it had been envisaged that the NBCC will continue to function as the body authorised to plan and co-ordinate the sustainable development and management of the Nadi catchment water resources. R2R PPG team discussions with the Commissioner Western indicated that whilst the value of the NBCC was appreciated, that there had been no provisioning of budget for its ongoing work – a useful lesson for the planned R2R CMCs.

### **1.3.5 Threats, root causes and impacts**

The critical threats, their root causes and existing and potential impacts on traditional way of life and culture (*vanua*), livelihoods, economy, human health and ecosystems and the planned work in the six R2R catchments have been tabulated in Annex 3. The threats have been grouped according to their risk to, and impact on the project components, as well as cross-cutting threats. Many of the R2R project activities have been developed to specifically counter and deal with these threats and risks, through an integrated approach involving a broad range of interest groups and disciplines (as required in planning, implementation, monitoring and adaptive management and learning).

The threats to the conservation of terrestrial and marine biodiversity (Component 1) involve mangrove loss and degradation; loss and damage to seagrass beds; coral reef bleaching and decline; loss of aquatic ecosystem diversity and fisheries decline; loss of agrobiodiversity and terrestrial biodiversity. The root causes of threats to biodiversity vary but are associated with unsustainable land use practices and resource use (such as intensive farming on marginal lands, including riparian zones and highly erodible soils, overfishing – and loss of the commercially most valuable components), poorly planned developments and inappropriate, damaging activities (such as commercial development of mangroves; river gravel extraction), undervaluation of the economic and other benefits of biodiversity and simplification of traditional agricultural systems with reduction in species and varieties. The root cause of biodiversity loss in Fiji is an increasing population, and associated needs for more food, energy and fiber. There is also a related need to generate increased export revenues to balance rising imports: intensification of resource use and extraction through agriculture, fishing, forestry and mining places increased strains on both natural and production ecosystems, and their biodiversity. The impacts of biodiversity loss in Fiji are manifold including on way of life – loss of important traditional and nutritionally vital foods, traditional medicines and customs. There are associated major economic ramifications, both now and in future, because selective overharvesting directly diminishes the biodiversity components of highest commercial value, including fisheries (e.g. sea cucumbers, coral trout and groupers, tuna, lobsters, prawns, mangrove crabs) and forest species (e.g. yasi, yaka and vesi). The direct and indirect impacts of loss of biodiversity on Fiji's ecosystems and on the R2R project are manifold. Simplification of ecosystems, especially loss of keystone species, makes ecosystems more vulnerable to other forms of degradation, including the major cross-cutting threat of climate change. Losses of biodiversity in the priority catchments will run directly counter to the project objectives of Component 1.

Fire and deforestation are identified as the main threats to the conservation, restoration and enhancement of carbon stocks through sustainable forestry (Component 2) in the priority catchments. Fire has long been a part of the ecosystem in the drier parts of Fiji but has increased dramatically over the past century due to an increase in human-started fires (for grazing, pig-hunting, cane harvest) combined with a buildup of exotic flammable vegetation notably mission grass and giant thatching grass and also young pine plantations. Burning directly destroys forest carbon stocks, while frequent burning prevents regeneration of woody vegetation. Continuation of the current frequent fire regimes will directly impact on components 1, 2 and 3. Accordingly components 2 and 4 have a major focus on raising awareness and reducing uncontrolled fires in Ba, Labasa, Tuva and Tunuloa. In addition to uncontrolled, intense and frequent firing the other main causes of deforestation in the priority catchments are clearing for agriculture, including for yaqona and

ginger, and a failure to regenerate mahogany and pine plantations after harvest or lease expiry. In summary the main drivers of deforestation in Fiji are:

1. *Increasing population and land use pressures*: need for more land for food production. When pressures on land were less, there was a longer fallow period which enabled secondary forests to regenerate and soil fertility to build up.
2. *Rural poverty*: limited opportunities for earning cash in rural areas aside from cash crops such as yaqona (kava) and ginger which often require forest to be cleared to provide new fertile soils that free from build-up of crop diseases.
3. *Uncontrolled burning*: lack of understanding of rural dwellers of the damage caused by fires to forests which escape from burning-off operations, pig-hunts etc, and lack of regulation and policing of acts of arson and careless burning. This is coupled with vegetation changes and greatly increased flammability of dry-zone vegetation.
4. *Native timber harvesting*: until recently, a major cause of forest loss and degradation: the driver being the need for income from landowners and timber for domestic market (which is now mainly met through plantations, both pine and mahogany)

The threats related to integrated catchment management (Component 3) frequently stem from a lack of proper planning coupled with inappropriate developments and resource extraction, and bad agricultural and forest harvesting practices. The impacts in the R2R project catchments are seen as continuing soil decline, loss and erosion; sedimentation and damaging floods; water quality degradation and pollution. If allowed to continue, bad agricultural and forest harvesting practices in critical locations (steep slopes; river banks) will undermine R2R efforts to improve catchment function and services. One of the options being considered to address the Suva-Nausori corridor's needs for potable water is the construction of a dam on Sovi River: such a development would considerably lower the biodiversity conservation values of the Sovi Basin PA. Depending on status of dam project, the R2R Project and communities will need to work with WAF, NTF and others to review options – including especially improvements to current water infrastructure and rooftop collection and storage of water.

Three major cross-cutting threats to the R2R project being able to achieve its objectives are climate change, alien invasive species and mining. Climate change, associated with anthropogenic increases in greenhouse gases, is leading to higher temperatures, increased severity of extreme climatic events, sea level rise and ocean acidification. Villages and towns may need to relocate due to flooding and sea-level rise. Enormous damage to livelihoods and the Fijian economy will occur due to more extreme cyclones and flash floods, and likely decline in fisheries and tourism. Marine ecosystems (oceans and coral reefs) are at risk of collapse due to acidification within the next decade. Climate change has the potential to counter and thwart efforts in components 1, 2 and 3. Invasive species have the potential to prevent effective biodiversity conservation, massively increase cost of reforestation and catchment rehabilitation: an extreme example in the priority catchments is African tulip tree which can preclude traditional shifting agriculture. While river gravel extraction has contributed to increased flooding and has negative economic impacts, the environments and economies of the two priority catchments are threatened by two major new mining developments. Magnetite mining in Ba delta will have adverse impacts on the Vanua o Votua qoliqoli, including on mangroves, seagrass meadows and coral reefs, while copper mining in Namosi will transform the way of life for villagers in Upper Waidina. The current plan to dump NJV mine spoils in Wainavadra is environmentally irresponsible and it is likely the mine not proceed if an economically feasible alternative arrangement cannot be identified.

The main barrier to the objectives of the project being achieved will probably be institutional: the Fijian Government has yet to implement such a comprehensive, multidisciplinary, and geographically dispersed project. This R2R project will be challenging to implement and the lack of experience in such projects is a

risk that can only be addressed through careful detailed planning, excellent collaboration and integration of Government department and NGO programs, recruitment of highly capable personnel and ability to adapt and learn quickly during project implementation. A further barrier is climate change which needs to be dealt with by effective, coordinated and concerted international action, but the project design has adopted implementation strategies and approaches which will go a long way to minimizing impacts on the project.

## 1.4 BASELINE ANALYSIS AND GAPS

Fiji's rate of growth has been modest in recent times (averaging about 2.6 % over the past three years) but poverty (at 31%), lack of job opportunities (unemployment at 7.5 % and high rates of underemployment), landlessness and urban drift remain major socio-economic challenges. Fiji's recently adopted Green Growth Framework Strategy is considered a transformative tool to accelerate integrated and inclusive sustainable development that builds environmental resilience, enhances social development and promotes economic growth. The current situation and baseline for R2R management in Fiji presents several challenges as well as major opportunities. The first problem is that much of the dry zones (< approx. 2000-2300 mm annual rainfall) of Fiji, including three of the R2R priority catchments (Ba, Labasa and Tuva) are in a highly degraded condition: the key factors have been burning and deforestation over hundreds/thousands of years, which has contributed to declines in soil depth and fertility – in some places to the highly degraded talasiga condition. In more recent times the rate of degradation has greatly accelerated due to more frequent uncontrolled burning, associated with introduction and build-up of flammable grasses; increased rates of logging and forest clearance for agriculture with an ever-contracting period of fallow or a need to venture deeper into forest and higher into catchments in search of better soils; and inappropriate extraction of sand, gravel and boulders from mid- catchment areas and cultivation right up to the edge of major rivers and streams. Poorly vegetated catchments, coupled with higher rates of soil erosion and lower infiltration rates, and periods of intense rainfall (climate-change related) have led to major sedimentation especially in lower reaches, near the mouth and into adjacent coastal bays; shallow rivers with greatly reduced hydraulic capacity and increased frequency and severity of flooding. The economic and social impacts of flooding in Fiji have also increased due to uncontrolled development in the low-lying coastal flood plain and in squatter settlements (who often have little choice but to build in such risky and dangerous locations). In facing these major economic and environmental challenges, the GoF has access to only modest budgetary resources, which are in part compounded by institutional, administrative and regulatory challenges, and limited capacity in key departments such as Agriculture, Environment, Forestry, Fisheries and *ITaukei* Affairs.

### 1.4.1 Biodiversity Conservation

The implementation of Fiji's NBSAP relies heavily on the willingness of the National Environment Council (NEC) to carry out legal requirements, but the NEC needs government (Minister, PS & DoE) commitment and support in order to perform functions. It is timely to review the EMA, given that it is now almost ten years since its enactment, including a requirement to better link environment with INRM and sustainable resources development. Identified constraints with the NEC are as follows:

- Tardiness to address matters, in part due to difficulty to attain a good representation of members, and resulting in infrequent meetings (cf. planned quarterly meeting schedule),
- Individual NEC members may not be able to properly address cross cutting issues, resulting in a lack of commitment,
- Lack of resources to perform tasks required by NEC, and
- Lack of appreciation of environment at senior level and non-appreciation of link between environment and sustainable resource development.

The development of a Protected Areas Network also presents major challenges for Fiji. The Protected Areas Committee has now identified the areas which need to be conserved to provide the minimum desired level of conservation of biodiversity (ecosystems and species), but almost all of these areas fall under traditional customary ownership (See above section on Land tenure). Accordingly their long-term conservation needs to be negotiated with the traditional land-owners (or *mataqali*) and coupled with long-term sustainable financing mechanisms such as payment for ecosystem services (biodiversity conservation, carbon sequestration, water catchment etc). However, ecosystem services are yet to be quantified for more than a few areas and services, and by-and-large are unknown and undervalued by land-owners and decision-

makers alike in Fiji. The Sovi Basin Protected Area provides an excellent model for Fiji and the Trust Fund can potentially be utilized for other PAs in Fiji. There are a large number of international conservation NGOs in Fiji (Annex 4) and whilst many are based in close proximity to one another in Ma'afu Street in Suva their collective biodiversity conservation efforts sometimes lack cohesion. Exemplar NGO collaboration also exist such as include the work of the BirdLife International which has handed over its work in Fiji to the local NFMV, and the collaborative work of FLMMA, WCS, SeaWeb and CORAL in marine PA conservation.

#### Baseline projects (on BD):

The organizations with baseline projects on biodiversity conservation providing co-financing to the R2R project are WWF, WCS, NTMV, USP-IAS and Government of Fiji (Departments of Environment; Forestry and Fisheries). These projects include:

- NZ Aid through Partnerships Development Fund (PDF) to WWF: "Securing food, fisheries and a sustainable seafood future in Fiji" project. The Activity's goal is that the well-being of coastal communities in Fiji is more secure and enhanced through sustainable in-shore fishing. It will empower Vanua Levu Qoliqoli communities, build district fisheries management capacity, engage seafood supply chains and enable the hospitality sector to source seafood sustainably and return economic benefits to Qoliqoli communities.
- Australian Government Aid through Fiji Community Development Fund (FCDP) to WWF: "Building Effective Community Driven Governance Systems in Mali District to Enhance Community Access to Food, Income Generating Opportunities and Livelihoods" The project will ensure Mali island district near Labasa delta has established a district level governance and financing structure that demonstrates a locally relevant, feasible and replicable approach toward ensuring independent community post sustainability management of coastal development and locally managed marine areas, for food and livelihood security and reduced community vulnerability to climate change impacts.
- David & Lucille Packard Foundation to WWF: "Establishing Key Fisheries Management Approaches to Ensure Long Term Sustainability of Fiji's Globally Significant Great Sea Reef". This project will focus on building and strengthening fisheries and qoliqoli management in two districts, Mali Island and Dreketi of the Macuata Qoliqoli Cokovata. This work will help guide the two districts to demonstrate effective fisheries management that will eventually provide lessons to other LMMA sites in Fiji.
- John D. and Catherine T. Macarthur Foundation and David & Lucille Packard Foundation to WCS supporting "District Level Ecosystem Based Management and Coastal Fisheries Management in Fiji".
- UNDP is providing in-kind support through BIOFIN (The Biodiversity Finance Initiative): this project involves building transformative policy and financing frameworks to increase investment in biodiversity management.
- Department of Environment projects on environment programs, strengthening Environment Act, donor-funded environment projects (JICA, Korea and Australian Government).
- Department of Fisheries projects to "Enhance resource assessment and management of inshore and inland fisheries" and to "Strengthen Giant Clam seed production at Makogai Mariculture Centre".
- Department of Forestry projects including "Ecosystem Rehabilitation Project", "Establishment and maintenance of Forest Nature Reserves" and ongoing biodiversity survey activities.

#### **1.4.2 Sustainable forest management and forest carbon**

The Department of Forestry's efforts to build a permanent forest estate have been stalled around issues related to traditional land ownership and land use policy. Development of more sustainable timber harvesting models (such as Nakavu and Drawa pilots) and payment for ecosystem services (such as in Emalu and Dogotuki pilot REDD+ sites and through a national forest carbon inventory) will hopefully encourage landowners and Government to progress the development of an agreed permanent forest estate. The DoF

also needs additional resources to develop its R&D and extension work with native tree species<sup>5</sup>, for which there is minimal knowledge on propagation and silviculture. Likewise there is a gap in knowledge on how to restore and replant mangroves in Fiji, with the exception of NGO OISCA which has pioneered mangrove replanting along the Coral Coast. Degraded, fire-prone and underutilized grasslands in the dry zones of the major islands contribute to soil erosion and rapid runoff/flooding but also represent an opportunity for commercial and/or environmental forestry. To date the main Government response to address the matter of degraded and talasiga lands in dry zones has been the development of a *Pinus caribaea* plantation industry (initiated in the 1970s) – after many decades this industry is now generating useful export income and providing income and jobs to landowners and others, notably logging contractors. The Fiji pine plantations and their utilization have not, however, delivered improved environmental outcomes – the R2R project will help address this issue and gap by assisting FPL to gain and maintain FSC certification through riparian restoration and better protection of high conservation forests.

### **Forest carbon stock – baseline**

The total forest carbon stock has been calculated based on the best available data (and realistic/conservative assumptions) including from the 1991 National forest inventory, MESCAL Rewa mangrove study (Heider 2013), Payton and Weaver (2011) and data supplied by Fiji Hardwood Corporation and DoF to PPG. The total forest carbon stock (and pre-project baseline) for the six R2R catchments has been calculated as 49,550,444 metric tonnes equivalent of CO<sub>2</sub> (Table 8). In Fiji, mangroves contribute disproportionately to forest carbon stocks among forest ecosystems, viz the Rewa Delta mangroves and contain 1,700 tonnes CO<sub>2</sub> equivalent per ha (Heider 2013) almost 10-fold the forest carbon stock average for Fiji's forests (excluding mangroves) of 175 tonnes CO<sub>2</sub> equivalent per ha (Payton and Weaver 2011). The average carbon stored in growing plantations of exotic species, viz *Pinus caribaea* and hardwoods (mainly mahogany or *Swietenia macrophylla*) is more than double that measured for native forests (this includes logged-over secondary forests).

### Baseline projects (on SFM and REDD+):

The organizations with baseline projects on biodiversity conservation providing co-financing to the R2R project are:

- Ministry of Fisheries and Forests. Department of Forestry projects include:
  - Measuring of Permanent Sample Plots for FAO's State of World's Forest Resource Assessment reporting and determining Annual Allowable Cut.
  - GIZ/REDD+ projects on Landowner awareness & Consultation, Forest inventory, Biodiversity surveys and carbon assessments.
  - Forest Industry training – skills training & code enforcement (including grant from Fiji Pine Trust)
  - SPC/GIZ supported Review of Forestry legislation & policies.
  - DoF training projects on Community based SFM/SLM and forest resource governance.
- Ministry of Local Government, Housing & Environment reforestation projects.
- Fiji Pine Ltd
  - Forest Stewardship Council (FSC) certification
  - Forest management activities

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<sup>5</sup> A notable exception is sandalwood for which the DoF has active and successful R&D and extension programs.



Table 8. Baseline (pre-project) forest carbon stock in the priority R2R catchments

Catchment	Native forest area	Average native forest carbon stock*	Total native forest carbon stock	Mangrove area	Average mangrove carbon stock	Total mangrove carbon stock	Pine plantation area	Pine carbon *** stock (@ 10 years)	Total planted pine carbon stock	Hardwood plantation area	Av. planted hardwood carbon stock****	Total planted hardwood carbon stock	Total forest carbon stock
	ha	CO <sub>2</sub> MT eq/ha	CO <sub>2</sub> MT eq	ha	CO <sub>2</sub> MT eq/ha	CO <sub>2</sub> MT eq	ha	CO <sub>2</sub> MT eq/ha	CO <sub>2</sub> MT eq	ha	CO <sub>2</sub> MT eq/ha	CO <sub>2</sub> MT eq	CO <sub>2</sub> MT eq
Ba	28,939	153	4,418,985	4,594	851**	3,909,494	9,146	521	4,765,066	1,208	547	660,414	13,753,959
Labasa	8,890	181	1,608,201	3,000	851**	2,553,000	1,255	521	653,855	1,535	485	744,475	5,559,531
Rewa delta	2,943	175	515,025	8,636	1,703	14,707,108	0		0	0			15,222,133
Rewa-Waidina	49,397	172	8,491,344	0		0	0		0	7	N.A.	N.A.	8,491,344
Tunuloa	5,493	322	1,769,295	<10	N.A.	N.A.	0		0	0			1,769,295
Tuva	1,780	153	271,806	710	851**	604,210	4,978	521	2,593,538	0			3,469,554
Vunivia	4,298	229	982,523	355	851**	302,105	0		0	0			1,284,628
<b>TOTAL</b>			18,057,180			22,075,917			8,012,459			1,404,889	49,550,444

\* Based on data collected from permanent sample plots within the respective catchments and plots adjoining the catchment with similar environmental conditions

\*\*Conservatively estimated at half the carbon stock for Rewa mangroves, with mangrove carbon stocks connected to these catchments to be assessed during R2R project.

\*\*\* Based on carbon stock for estimated mid age of pine plantations (as detailed age class data by catchment was not forthcoming from Fiji Pine Ltd during the PPG)

\*\*\*\* Based on detailed species and age class data provided by Fiji Hardwood Corporation. The majority of the plantations in the R2R catchments are Swietenia macrophylla (with small areas of other species and mixtures which were assumed to have similar carbon stocks to mahogany plantings of same age).

### 1.4.3 Integrated catchment management

There have only been a small number integrated catchment management approaches in Fiji, e.g.

1. On-going catchment based land use planning studies by the DoA Land Use Planning group
2. Ecosystem based management/R2R planning in Kubulau, Bua Province, Vanua Levu (WCS)
3. COWRIE/USP (concluded) and CI work in Ra Province, with the latter involved in developing a forested corridor to link up Tomanivi-Wabu Forest with Nakauvadra Range, and
4. Nadi River Basin Integrated Water Resources Management Demonstration Project (concluded in 2014).

However, hitherto none of these efforts, studies and recommendations have crystallized into the adoption of a whole-of-Government/R2R approach for integrated catchment management of natural resources in Fiji. Accordingly the GEF 5 STAR Fiji Ridge-to-Reef Project will be of a pioneering nature. Getting all departments working effectively together will be paramount. It was observed by the R2R PPG team that the activities of the various Government Departments are well coordinated through the Divisional Commissioners Offices, whilst there seems to be a lack of clear division of responsibilities, and overlap, at district/community levels between the Ministries of Provincial Development and ITaukei Affairs. A critical consideration in development of the project, and through its implementation, will be to ensure that there is sustainability of activity and outcomes upon its conclusion. In this context it needs to be borne in mind that the Fiji Government has only modest resources at its disposal and rather low capacity to take on additional programs and work, e.g. the Nadi River Basin IWRM project has recently been handed over to Fiji Government, but the Commissioner Western has indicated he has very limited resources to continue the work (whilst at the same time acknowledging the project's success).

It is noted that in recent years there has been quite an extraordinary donor effort on climate change in the Pacific Islands, including from UN, GEF, EU, Germany and USA and until recently also Australia. This is clear acknowledgement that Pacific Island countries including Fiji are on the global frontline in terms of fighting climate change and need to rapidly develop resilience. Whilst much focus has been on increased damage and threats from more extreme events, especially cyclones, and rising sea levels there is a need to also begin to focus attention on some of the hidden dimensions, such as ocean acidification which has the potential to drastically impact on marine food chains and the health and diversity of coral reef systems. It will be essential to both conserve and promote wider use of agrobiodiversity to ensure resilience of food security systems and to increase diversity in planted and native forests (both species and within species genetic diversity) to reduce risks to productivity and ecosystem services.

### Flood mitigation

The main response of successive Fijian Governments to address flooding has been through river dredging, which is a highly costly and stop-gap measure unless implemented in conjunction with improvement of land use, and reduced soil erosion, throughout the catchment. Poignantly, the number 1 policy recommendation by Lal *et al.* (2009) arising from their analysis of the economic costs of the devastating 2009 floods in the Fiji Sugar Belt was ***“Invest in improving the health of natural ecosystem for flood mitigation through integrated river catchment management, including sustainable management of upstream forestry, good farm husbandry, and management of remnant natural freshwater wetlands”***. The authors noted that *“Disaster risk reduction produces higher benefits, particularly for the poor, than disaster management. For every dollar invested in disaster risk reduction, between two and four dollars are returned in terms of avoided or reduced disaster impacts. Poor people are more sensitive to disasters because they often live in hazard-prone areas, live in poor conditions, and have limited capacity to respond to, recover from disasters. Disaster events also increase the poverty level, thus increasing the vulnerability of people who live below or near the poverty line”*. This recommendation is given further credence by recent research by Daigneault and Brown (2014) which showed positive B:C ratios for riparian restoration and upland reforestation in the Ba catchment to mitigate future flooding

#### Baseline projects (on Integrated Catchment Management):

The organizations with baseline projects on integrated catchment providing co-financing to the R2R project are Government of Fiji and USP-IAS. These projects include:

##### Ministry of Foreign Affairs

- Coastal Community Adaptation Project - Helping vulnerable communities in Fiji prepare for climate change impacts, including more intense and frequent weather events and ecosystem degradation in the short-term, and sea level rise in the long-term.
- Child Centered Climate Change Adaptation (4CA) in the Asia Pacific (Fiji component).

##### Ministry of Strategic Planning, National Development and Statistics

- IHRDP and Northern Development Programs - Community development through sustainable use and management of natural resources for income generating activities

##### Ministry of Infrastructure and Works

- Water security and hygiene for the installation of ecological water treatment systems and effective storage in 24 villages in Waidina, Tuva and eastern Vanua Levu

##### Ministry of Local Government, Housing & Environment

- Improvements to waste disposal and transport infrastructure

##### USP-IAS

- R&D Projects on integrated coastal management

#### Baseline projects for Knowledge Management component:

Some of the Fiji government co-financing have some elements related to KM, e.g., the DOE website which provides the baseline, and lessons learnt as part of the co-financed projects of Ministry of Rural & Maritime Development, and National Disaster Management.

#### ***1.4.4 Summary of key gaps to be addressed***

The key gaps the R2R project will seek to address, and positively contribute to, during its implementation are:

##### a) Lack of Information and knowledge

- A lack of information on biodiversity in the target catchments, its composition and distribution and how it may best be conserved and sustainably managed.
- Lack of information on the value of ecosystems services present in the catchments, and how these might be linked to new economic opportunities, such as PES, REDD+ and certification schemes.
- A lack of knowledge on suitable agroforestry systems and management for different environments and situations. This includes a dearth in knowledge on key characteristics of promising native tree species, including location of populations, timing of seed collection, propagation and silvicultural practices.
- A lack of knowledge, capacity and designated agency(s) within GoF to implement integrated approaches to rational planning and management of natural resources. Collaboration among relevant government agencies needs to be strengthened and the R2R project and associated CMCs provide such opportunities.

- Misconceptions concerning the causes of flooding and the most cost effective flood mitigation measures, with the current focus being on dredging which is at best a costly, short-term fix.
- Need to develop and pioneer integrated catchment management/R2R approaches in Fiji (which to date have only been undertaken on a very minor scale).

b) Lack of capacity and unresolved governance issues (institutions and policy frameworks)

- The legislation and associated regulations dealing with key matters for R2R are in need of overhaul – these include forestry and waterways, and a national policy on Integrated Natural Resources and Catchment Management Policy (INRCM) – with its relationship to the new Green Growth Framework and existing Integrated Coastal Management Framework clarified.
- A lack of capacity within GoF to spot fires and halt their spread (apart from within Fiji Pine). The R2R project will seek to deal with this issue through development of a national fire reduction strategy, working with communities, principally through raising awareness and linking to agencies and organizations with at least some fire-suppression capacity.

c) Lack of resources

- Lack of GoF resources for extension in agriculture, forestry and fisheries sectors, and awareness on sustainable management and utilization in these sectors to most effectively contribute to Fiji's Green Growth framework.
- Lack of GoF resources to address implementation gaps to achieve Global Environment Benefits of the project including especially for planning, management and long-term financing of new marine and terrestrial protected areas and associated major biodiversity conservation benefits; specific measures to increase and maintain forest carbon stocks and integrated catchment measures to improve the quality of water entering into Pacific Ocean, such as the Great Sea Reef.
- Lack of technologies and resources to prevent and slow the spread of invasive species especially African tulip tree (*Spathodea campanulata*), *Cordia alliodora* and *Maesopsis eminii*.

## PART II: INTERVENTION STRATEGY

### 2.1 PROJECT RATIONAL AND POLICY CONFORMITY: FIT TO GEF-5 FOCAL AREA STRATEGIES

The project is consistent with the GEF 5 Focal Area Strategies, including the Biodiversity Strategy (Objectives 1 & 2), the Land Degradation Strategy (Objectives 1 & 3), the Sustainable Forest Management/REDD+ Strategy (Objective 1), the Climate Change Strategy (Objective 5) and the International Waters Strategy (Objective 3) which are:

- BD Objective 1: Improve Sustainability of Protected Area Systems;
- BD Objective 2: Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes, Seascapes and Sectors;
- LD Objective 1: Maintain or Improve Flows of Agro-Ecosystem Services to Sustain Livelihoods of Local Communities;
- LD Objective 3: Reduce Pressures on Natural Resources from Competing Land Uses in the Wider Landscape;
- CC Objective 5: Promote conservation and enhancement of carbon stocks through sustainable management of land use, land-use change, and forestry;
- SFM Objective 1: Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services, and
- IW Objective 3: Capacity Building. Support foundational capacity building, portfolio learning, and targeted research needs for joint, ecosystem-based management of trans-boundary water systems

The project addresses these BD Strategic Objectives of GEF-5 through project support to:

#### **Objective 1. Improve Sustainability of Protected Area Systems:**

**Increase Financing of Protected Area Systems:** Development of sustainable financing models, including through documenting and assessing biodiversity (Project Outcome 1.1), quantifying forest carbon stocks and valuation of ecosystem services in two sites (Project Outcome 1.2), identification of donor sources, for new planned new terrestrial PAs in Tunulua District, Upper Tuva catchment and Vunivia catchment, and extension of the Sovi Basin Trust Fund to other PAs in Fiji (Project Outcome 1.1) and development of user fee systems for locally managed marine protected areas (Project Outcome 1.2).

**Expand Marine and Terrestrial Ecosystem Representation:** Expansion of PA system through development of new terrestrial protected areas in a) Tunulua district with a peninsula encompassing different forest types over a short distance, viz. lowland rainforest on windward/ SE side, ridge forest and moist/dry forest on leeward/NW side (approx. 4,400 ha), b) upper Tuva catchment to protect unique, fragmented and rare/endangered forest pockets developed over limestone outcrops and which are used by birds as 'stepping-stones' and mountain forest (approx. 1,300 ha) and c) Vunivia catchment to protect a unique mosaic/assemblage of different forest types including almost intact lowland moist forest grading into highly endangered tropical dry forest, coastal forests and mangroves and swamp forest (up to 3,500 ha) (Project Outcome 1.1). Through negotiation with *qoliqoli* owners develop enhanced Marine Managed Areas (expanded/confirmed and/or reconfigured and better protected) in the six catchments (Project Outcome 1.1).

**Expand Threatened Species Representation:** Through an increase in protected areas, expanded area of sustainably managed multiple use forests and deliberate programs of replanting and habitat creation to better protect and expand threatened species representation in all six catchments and associated coastal habitats (Project Outcome 1.1). Some examples include:

- Critically endangered tree species *cibicibi* (*Cynometra falcata*) and *yasi* (*Santalum yasi*) in Ba, Labasa and Tuva;
- Threatened marine species including critically endangered green turtle (*Chelonia midas*), spinner dolphin (*Stenella longirostris*), ten threatened endemic species of fish, and the endangered humphead

wrasse (*Cheilinus undulatus*) and vulnerable bumphead parrotfish (*Bolbometopon muricatum*) in Great Sea Reef, including mangrove islands near Labasa;

- Endangered and critically endangered tree species highlands yaka (*Dacrydium nausoriense*), yanitu (*Pterocymbium oceanicum*) and yasi (*Santalum yasi*) in Upper Tuva,
- Endangered endemic subspecies of sisi or silktail (*Lamprolia victoriae* ssp. *kleinschmidtii*) and black-faced shrikebill (*Clytorhynchus nigrogularis*), the endangered, endemic orange-spotted scaleless goby (*Schismatogobius chrysonotus*), rare/threatened and endemic tree species including Vanua Levu *kauvula* (*Endospermum robbianum*) and *marasa* (*Storkiella vitiensis*) and the critically endangered palm *Balaka macrocarpa* in Tunuloa;
- Critically endangered, endangered and vulnerable birds including long-legged thicketbird (*Trichocichla rufa*), pink-billed parrotfinch (*Erythura kleinschmidtii*), friendly ground-dove (*Gallicolumba stairi*) and black-faced shrikebill (*Clytorhynchus nigrogularis*), the critically endangered endemic conifer *drautabua* (*Acmophyle sahniana*), the endangered palm *vilaito* (*Neoveitchia storckii*), and the vulnerable Fiji tree frog (*Platymantis vitiensis*) and Fiji burrowing snake (*Ogmodon vitianus*) in Waidina, and the
- Vulnerable Fiji tree frog (*Platymantis vitiensis*) and threatened *Macuata tagitagi* (*Acacia mathuatensis*) in Vunivia.

**Improve Management Effectiveness of Existing Protected Areas:** The project will enhance the management effective of existing protected areas, notably Sovi Basin PA, both through planned revision of management plan and conservation activities in buffer zones, but also to strengthen/formalize the existing ‘protected’ areas in Tunuloa and Vunivia, and involving biodiversity assessments, development and implementation of management plans and sustainable financing. Management of locally managed marine areas (LMMAs) will be strengthened through better planning with *qoliqoli* owners and users, involving development of management plans for enhanced protected LMMAs and improved monitoring, compliance and enforcement of conservation measures (Project Outcome 1.1).

#### **BD Objective Two: Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes/ Seascapes and Sectors**

**Strengthen Policy and Regulatory Framework:** The R2R project will strengthened governance for integrated natural resources (land, water, biodiversity, forests) management, including through development of Integrated Natural Resources and Catchment Management Policy (Project Outcome 3.2). This may include provision of incentives for private sector to align their practices and behavior with the principles of sustainable use and management.

**Implement Invasive Alien Species Management Frameworks:** African tulip tree (*Spathodea campanulata*) is a major invasive tree weed that seriously threatens traditional agriculture and biodiversity conservation in Waidina and Labasa catchments, and rapidly increasingly in Ba and Tuva catchments. The R2R project will include pilot activities of early detection and trial control measures to prevent new incursions in Sovi Basin and in planned protected areas where it is not yet widespread e.g. Tunuloa and Upper Tuva and Vunivia (Project Outcome 1.1). This albeit limited work and other control measures for African tulip undertaken in Component 3 of the R2R project (Project Outcome 3.1.3) will contribute to raising awareness and establishing policy measures that reduce the spread and serious economic and environmental impacts of African tulip throughout the Fiji islands.

**Produce Biodiversity-friendly Goods and Services:** The project will assist private sector, individual and communities and individuals to increase production of biodiversity-friendly goods. This will include establishing training systems for farmers and resource managers on how to improve management practices to meet certification standards such as Pacific Regional Organic Standard (through SPC/ POETCOM) (Project Outcome 3.2).

The R2R project will contribute to **Sustainable Forest Management Objective 1: Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services**. This will be achieved through an enhanced enabling environment within the forest sector and across sectors, whereby owners and developers of increased forest carbon stocks from different sources will be financially rewarded through participation in Fiji’s carbon markets, with sustainable forest management practices developed and applied

resulting in attainment of forest (FSC) certification for at least 15,000 ha for key plantation forestry companies, viz. Fiji Pine Group and Fiji Hardwood Ltd (Project Outcome 2.2).

The R2R project is also aligned with **Climate Change Objective 5** -Promote conservation and enhancement of carbon stocks through sustainable management of land use, land-use change, and forestry. R2R project's contribution will be through:

- Conservation (Project Outcome 1.1),
- Restoration, enhancement, and management of the carbon stocks in forest and non-forest lands (Project Outcomes 2.1 and 3.1), and
- Limiting emissions of forest carbon into the atmosphere through reduction of the pressure on native forests, such as developing alternative livelihoods and practices to clearing of native forests for growing kava and other crops (Project Outcomes 3.1 and 3.2).

The Department of Forestry, and a key project collaborator, is responsible for national forest carbon monitoring, and has been involved in establishing additional permanent sample plots in the R2R catchments. These new plots will strengthen the baseline data needed to better quantify changes in forest carbon stocks in the respective catchments, including as a result of the project-driven enhancement and restoration of forest carbon stocks through reforestation and forest enrichment plantings using native tree species (Project Outcome 2.1). The direct and indirect lifetime increases in forest carbon stocks as a result of the R2R project in the six catchments are 2.5 M and 2.75 M Tonnes of CO<sub>2</sub> equivalent, respectively (for details refer to Tracking Tool for SFM/REDD-Plus projects).

The R2R project will contribute to the **Land Degradation Objectives 1: Maintain or Improve Flows of Agro-Ecosystem Services to Sustain Livelihoods of Local Communities and 3: Reduce Pressures on Natural Resources from Competing Land Uses in the Wider Landscape**. The project shall promote and foster an enabling environment that will place R2R Catchment Management in the mainstream of development policy and practices in the context of integrated environmental management.

#### **Land degradation Objective 1: Maintain or improve flows of agro-ecosystem services to sustain livelihoods of local communities**

This objective will be achieved through capacity development in the respective Catchment Management Committees and *Yaubula* Management Support Teams. This capacity building will contribute to improved decision making in the management of production landscapes - agricultural, agroforestry, plantation forests, multiple use native forests - in the six priority catchments (Project Outcomes 3.1 and 3.2). This will, in turn, contribute to maintenance of ecosystem services important for the global environment and also for peoples' livelihoods. Exchange visits to inspect best catchment/land-use practice sites will build the awareness needed to scale up good agricultural practices (element of Project Outcome 4.1). Similarly the operations of the respective CMC and YMST will develop community-based agricultural management skills including participatory decision making and gender-related issues, through the involvement and participation of NGOs, such as SVT (Project Outcomes 3.1 and 3.2). The R2R project, working with and through the DoA - especially its LUP and extension sections - will also directly contribute to this objective through implementing integrated approaches to soil and water management. These approaches will include agroforestry and soil conservation agriculture practices, protection and restoration of riparian buffer zones and reforestation of steep slopes- especially in the more degraded catchments of Ba, Labasa and Tuva (Project Outcome 3.1). Improved rangeland management and sustainable pastoralism will be achieved through raising awareness leading to changes in behavior by farmers and graziers in the six catchments. The most critical change sought will be to reduce annual firing of low-quality rough grazing lands, with a target of 50% of grasslands in the catchment areas recovering due to reduced firing by project end. Resources permitting and where appropriate, the DoA will also be involved in promoting sustainable intensification of agricultural production systems and controlling the spread of unpalatable and spiny alien invasive weeds (Project Outcome 3.1).

#### **Land degradation Objective 3: Reduce pressures on natural resources from competing land uses in the wider landscape**

The main contribution of the R2R project to this objective will be through development and implementation of integrated catchment management plans, with SLM interventions to improve hydrological functions, e.g. increased vegetation cover on degraded fire-prone grasslands and perennial vegetation re-established in riparian buffers, and improve services for agro-ecosystem productivity (crops and livestock) (Project Outcome 3.1). The project will also aim to improve management of agricultural activities within the vicinity and in the buffer zones of terrestrial protected areas (Waidina, Tunulua, Tuva and Vunivia) (Project Outcome 1.1), including improved management frameworks to prevent, control and manage invasive alien species (Focal area Outcome 2.3). The project-assisted Catchment Management Committees will provide a multi-stakeholder forum for discussion, advocacy and promotion of measures to balance development activities with environmental concerns and SLM, including minimizing damage to forested ecosystems, e.g. addressing land use changes affecting forest lands driven by expanding sectors such as the planned/proposed mining operations in Waidina and Ba (Project Outcome 2.1).

The R2R project is consistent with **International Waters Objective 3: Capacity Building**. Support foundational capacity building, portfolio learning, and targeted research needs for joint, ecosystem-based management of trans-boundary water systems. This will be achieved through incorporating ecosystem/catchment based approaches to management of coastal areas and their connected river system/water catchment (Project Outcome 3.1); rebuilding of fish stocks, especially through better protection and management of mangroves/LMMAs to maintain their role as fish nurseries (Project Outcome 1.1); and habitat restoration/conservation of mangroves/sea grass beds and coral reefs to maintain and increase their contribution to blue carbon stocks (Project Outcomes 1.1 and 2.1).

## **2.2 DESIGN PRINCIPLES AND STRATEGIC CONSIDERATIONS**

### ***2.2.1 R2R management approach***

R2R management represents an extension and enhancement of integrated water catchment management by extending the area under consideration and management to the connected coastal and marine ecosystems. Integrated approaches to natural resources management at landscape, catchment and/or ecosystems levels are still in their infancy in Fiji, with only a few pilot projects, e.g. COWRIE (Towards Coastal and Watershed Restoration for the Integrity of Island Environments) in Ra Province (Viti Levu), WCS R2R project in Kubulau, Bua Province (Vanua Levu) and the Nadi River Basin IWRM project. Whilst these projects have been of limited scope, resources and timeframe they have developed local experience and generated valuable lessons. They have also demonstrated and confirmed that integrated R2R approaches have broader applicability in Fiji. The majority of Fijians live in low-lying, near coastal locations which are becoming increasingly subject to flash flooding. Many also depend, at least in part, on riverine and in-shore coastal fisheries, mangroves and/or marine ecosystems for their livelihoods and subsistence food needs. In addition to being sources of food and protein, rivers are also vital for water supply for drinking, cooking and washing; for power generation and as means of transport. In the river deltas, mangroves are amongst the most productive ecosystems on Earth, acting as sites for marine food organism (crabs, prawns, mangrove lobsters, molluscs and fish) and as breeding grounds and nurseries for pelagic and other fish and prawns, and play vital roles in coastal protection, sediment stabilization and filtering of runoff. Mangroves are increasingly under threat from conversion, climate change, sedimentation (including from the spoils of poorly planned dredging operations) and planned magnetite sand mining. In Fiji, mangroves contribute disproportionately to forest carbon stocks among forest ecosystems, viz the Rewa Delta mangroves and contain 1,700 tonnes CO<sub>2</sub> equivalent per ha (Heider 2013) almost 10-fold the forest carbon stock average for Fiji's forests (excluding mangroves) of 175 tonnes CO<sub>2</sub> equivalent per ha (Payton and Weaver 2011). In summary, the catchment approach is consistent with the R2R approach, and provides a convenient approach to address all of the relevant focal areas of GEF - BLD, LD, CC, SFM, and IW.

### ***2.2.2 Selection of priority catchments***

Six priority catchments were selected to develop R2R management approaches in Fiji, viz Ba, Labasa, Rewa/Waidina, Tunulua, Tuva and Vunivia. These catchments were chosen to provide a diverse set of



catchments with broad geographic spread on the two main islands in order to maximize opportunities for impact and learning. They include:

- Catchments with critical importance for biodiversity conservation encompassing endangered ecosystems and species i.e. Tunuloa, Vunivia and Waidina (Sovi Basin),
- Catchments associated with three of the four most critical and largest mangrove stands in Fiji, and with international significance, for fisheries and carbon sequestration, i.e. Ba, Labasa and Rewa deltas, and
- Catchments with highly degraded hinterlands, notably Ba, Labasa and Tuva which present opportunities for improved land management providing dividends in terms of enhanced, sustainable livelihoods and carbon sequestration (forest and soil carbon) as well as reducing downstream flash flooding in the major population centres of Ba and Labasa, numerous villages and settlements.

The location and extent of the six catchments are shown in Figures 3 and 4. Selected biophysical and other information on the catchments is given in Table 9. For the six catchments the total area of forest (all types) is 136,207 ha, agricultural cropland is 19,066 ha and rangeland/grasslands is 82,206 ha. Detailed descriptions of the catchments are provided in Annex 1, together with a summary of critical physical features of the catchments and implications for the R2R management in Annex 2.

The GoF submitted a full proposal to the Adaptation Fund Board to support community level climate change adaptation planning and implementation for the Ba Catchment. There is considerable overlap in the proposed activities in the AFB and R2R project documents. This R2R project will leave out Ba catchment if and when the AFB proposal is approved. Projects funds that will be released from Ba catchment will be reallocated to the other catchments, including the entire Rewa catchment, and in other cross-cutting components for consideration by the Project Steering Committee.

### **2.2.3 Selection of project partners**

This project will have a large number of national implementing partners to deal with its wide scope, both in terms of sectors and themes covered and geographic spread. The selection of implementing partners has been undertaken through broad consultative process, including considerable meetings, and input from Government and NGO sectors. This has included a thorough review of the stakeholders, their capacities, roles, interests and synergies has been undertaken as reported elsewhere in this project document. The GoF implementing partners are those whose mandate covers and overlaps the work and capacity building to be undertaken in the project and these agencies are also involved on the Project Steering Committee and through substantial co-financing. The positioning and location of critical R2R project staff in three different GoF Ministries and departments (Departments of Environment and Forestry, Ministry of Provincial Development) will not only help to ensure effective project delivery and monitoring, but also to build bridges and communications between the different concerned departments. The selection of NGOs for implementation has been based on their capacities and especially takes into account their history of involvement and work with communities in the selected priority catchments. Certain NGOs have well-established relationships and trust, in the selected priority catchments, such as Birdlife International/NFMV in Tunuloa and WWF in Macuata coastal/fishing communities. The USP IAS is the only organization in Fiji with the capacity to undertake the proposed biodiversity assessments, which in turn will build national and regional capacity. Section 3.2 lists the various stakeholders and partners and their respective roles in project implementation.

**Table 9. Information on the six priority catchments and their connected marine environments**

Name of catchment/district	Ba	Labasa	Rewa/Waidina	Rewa -delta <sup>6</sup>	Tunuloa	Tuva <sup>7</sup>	Vunivia
Island	Viti Levu	Vanua Levu	Viti Levu	Viti Levu	Vanua Levu	Viti Levu	Vanua Levu
Province	Ba	Macuata, Caukadrove (upper)	Naitasiri, Namosi (upper)	Rewa (delta)	Caukadrove	Nadroga, Ba (upper)	Macuata
Administrative districts	<i>Main:</i> Bulu, Nailaga, Nalolo, Nalotwa, Qaliyatini, Tavua. <i>Minor:</i> Madrogo, Navaiusila, Savatu, Vitogo	<i>Main:</i> Labasa, Wairiki. <i>Minor:</i> Koroalau, Vaturova	<i>Main:</i> Namosi, Waidina. <i>Minor:</i> Muaira, Noimalu, Nadaravakawalu, Naqarawai, Wainikoroiluva		<i>Main:</i> Tunuloa	<i>Main:</i> Malomalo, Nokonoko, Rukuruku, Tuva, Waicoba, Wai. <i>Minor:</i> Momi	<i>Main:</i> Dogotuki <i>Minor:</i> Udu
Total Land Area	97,428 ha	21,415 ha	55,233 ha	12,062 ha	6,498 ha	25,780 ha	5,157 ha
Land Tenure	<i>iTaukei</i> >80%	<i>iTaukei</i> 94%; Freehold 6%	<i>iTaukei</i> 100%	<i>iTaukei</i> 100%	<i>iTaukei</i> >90%; Freehold < 10%	<i>iTaukei</i> 91%; Crown 3%; Freehold 6%	<i>iTaukei</i> >90%; Freehold < 10%
Climate (rainfall zone)	Dry/Intermediate	Dry	Wet	Wet	Intermediate	Dry	Intermediate
Maximum elevation	977 m (Korobala)	1,032 m (Sorolevu)	1,179 m (Korobasabasaga Rq)	< 20 m	834 m (Uluiqala)	591 m	561 m (Baleyaganilia)
Closed forest	5,845 ha	6,477 ha	32,960 ha	2,779 ha	1,118 ha	630 ha	1,814 ha
Open forest (incl. secondary forest)	23,094 ha	2,413 ha	16,437 ha	164 ha	4,375 ha	1,150 ha	2,475 ha
Forest plantation – pine/conifer	9,146 ha	1,255 ha	1 ha	< 10 ha	<10ha	4,978 ha	< 10 ha
Forest plantation – mahogany/ mixed hardwood	1,208 ha	1,535 ha	7 ha	< 10 ha	0 ha	0 ha	< 10 ha
Horticultural tree crop (incl. coconut)	< 10 ha	<10 ha	<10 ha		35 ha	50 ha	22 ha
Total forest (including mangrove)	43,887 ha	14,680 ha	49,405 ha	11,829 ha	5,528 ha	7,518 ha	4,666 ha
Land use - Protection forest & PAs <sup>8</sup>	1,123 ha	2,078 ha	16,344 ha	0 ha	595 ha	19 ha	80 ha
Non Forest Agriculture (approx.)	6,000 ha	2,300 ha	2800 ha	3846 ha	300 ha	1,566 ha	400 ha
Rangeland/grassland	50,000 ha	6,905 ha	2800 ha	3500 ha	600 ha	17,406 ha	400 ha
Developed/other	807 ha	500 ha	228 ha	1500 ha	70 ha	140 ha	68 ha
Freshwater body/wetlands	1328 ha	30 ha		522 ha		< 10 ha	
Mangrove area	4,594 ha	c. 3,000 ha	0	8,636 ha	< 10 ha	710 ha	355 ha
Connected fishing grounds (area and LMMA status)	Vanua o Votua <i>qoliqoli</i> 153,180 ha.	Macuata Cokovata <i>qq</i> 134,400 ha; Vanua Labasa <i>qq</i> 3,800 ha; Vanua Wailevu		Vanua o Noco <i>qoliqoli</i> 4,340 ha; Vanua o Burebasaga <i>qoliqoli</i> 11,170 ha	Cakaudrove Tunuloa <i>qoliqoli</i> comprising Yaro 67,800 ha and Somosomo 3140 ha	Vanua o Cuvu and Tuva <i>qoliqoli</i> 970 ha.	Vanua o Namuka and Dogotuki <i>qoliqoli</i> 13,200 ha

<sup>6</sup> The area used is the Rewa MESCAL catchment area

<sup>7</sup> Tuva land use/vegetation updated based on LUP biophysical survey

<sup>8</sup> This category is based on protection status and may include forest plantations (both pine and hardwood)

Name of catchment/district	Ba	Labasa	Rewa/Waidina	Rewa -delta <sup>6</sup>	Tunuloa	Tuva <sup>7</sup>	Vunivia
		<i>qoliqoli</i> 4,100 ha					

**Table 9 cont. Information on the six priority catchments and their connected marine environments**

Name of catchment/district	Ba	Labasa	Rewa/Waidina	Rewa -delta	Tunuloa	Tuva	Vunivia
Fishing ground habitat types	Freshwater riverine, mangrove forest, intertidal mudflats, seagrass beds, shallow and submerged coral reefs	Freshwater riverine, mangrove forest, intertidal mudflats, seagrass beds, shallow and submerged coral reefs and barrier reef		Freshwater riverine, mangrove forest, intertidal mudflats, submerged fringing reef	Intertidal area, submerged fringing reefs	Freshwater riverine, intertidal area, submerged coral reefs and fringing reef	Freshwater riverine, mangrove forest, intertidal mudflats, seagrass beds, shallow and submerged coral reefs and barrier reef
Fishing activities intensity	High intensity due to large number of commercial fishermen within Ba and from neighbouring Lautoka and Tavua	High intensity due to large number of commercial fishermen within communities and those from Labasa		Medium intensity due to less reliance on fishing as livelihood source	Low intensity due to less reliance on fishing for livelihood source	Low intensity due to less reliance on fishing for livelihood source	High intensity due to large number of commercial fishermen within communities and lack of alternative livelihood source
Fishing ground current management	A marine protected area as part of LMMA, managed by Votua communities	A number of MPAs as part of LMMA, managed by Macuata <i>qoliqoli</i> cokovata communities. No management in Vanua Wailevu and Labasa <i>qoliqolis</i>		A marine protected area as part of LMMA, managed by Noco communities	A number of marine protected areas as part of LMMA, managed by Tunuloa with assistance from Cakaudrove Provincial Office	Currently no management	A number of marine protected areas as part of LMMA, managed by Namuka and Dogotuki communities
Other fisheries management tools within fishing ground	Destructive fishing method ban, especially dynamite and poisonous derris root	Destructive fishing method ban, gear and effort restrictions		None	None	None	Destructive fishing method ban, gear and effort restrictions
Major existing and planned developments in catchment	Magnetite mining in Ba delta; Ba township; Rarawai Sugar Mill; Mini-hydro (Bukuya)	Labasa township. Labasa Sugar Mill (nearby) with effluent flows in Labasa R.	NJV Copper mine (feasibility/EIA stage), Sovi dam (feasibility)	Suva -Laucala - urban sprawl and industrial develop. on mangroves	Mini-hydro – Muana and Buca (Natewa district)	Coast-based tourist resort; Manganese mines (small)	None
Major land uses	Sugar, mixed cropping; grazing, pine and mahogany plantation	Sugar, mixed cropping; mahogany plantation, native forest logging (limited)	Sovi PA; mixed cropping esp. dalo, cassava, ginger, yaqona and grazing	Settlements/urban sprawl, mixed crops esp. cassava, dalo and vegetables, mangrove fisheries	Mixed cropping especially yaqona; coconuts/copra; logging	Pine plantation, grazing, sugar, Mixed cropping	Native forest; mixed cropping, mainly subsistence and yaqona for cash; coconut and cocoa plantations
Main rivers and tributaries	Ba, Nakara Rivers; Elevuka, Mala, Nabiaurue, Nadrou,	Dewala, Labasa, Korotari, Wairikicake, Wairikiqisi	Waidina, Waidradra, Sovi, Wainavadu, Wasoi, Namosi	Rewa	<i>Main:</i> Nala and Koroivonu Rivers <i>Minor:</i> numerous	<i>Main:</i> Tuva. <i>Minor:</i> Bureburu, Namosi, Nanawanawa,	Vunivia <i>Minor:</i> Kedra, Lawerua, Tuvatuvaniturga,

Name of catchment/district	Ba	Labasa	Rewa/Waidina	Rewa -delta	Tunuloa	Tuva	Vunivia
	Naidaradara, Nakara, Navisa, Namosau, Naweidamu, Navuniyasi, Naweni, Saquanu, Savata, Sawau, Tawalase Waisali Cks				including: Daku, Naseva, Nasovini, Natovotovo	Rukuruku, Togitogi, Tokawa, Tubaiyawa, Vevelutu, Yavoli	Vunigolo, Vunivialilai,

**Figure 3. Map of Viti Levu project catchments: Ba, Tuva and Rewa -Waidina and delta (source: H. Wendt, 2014)**

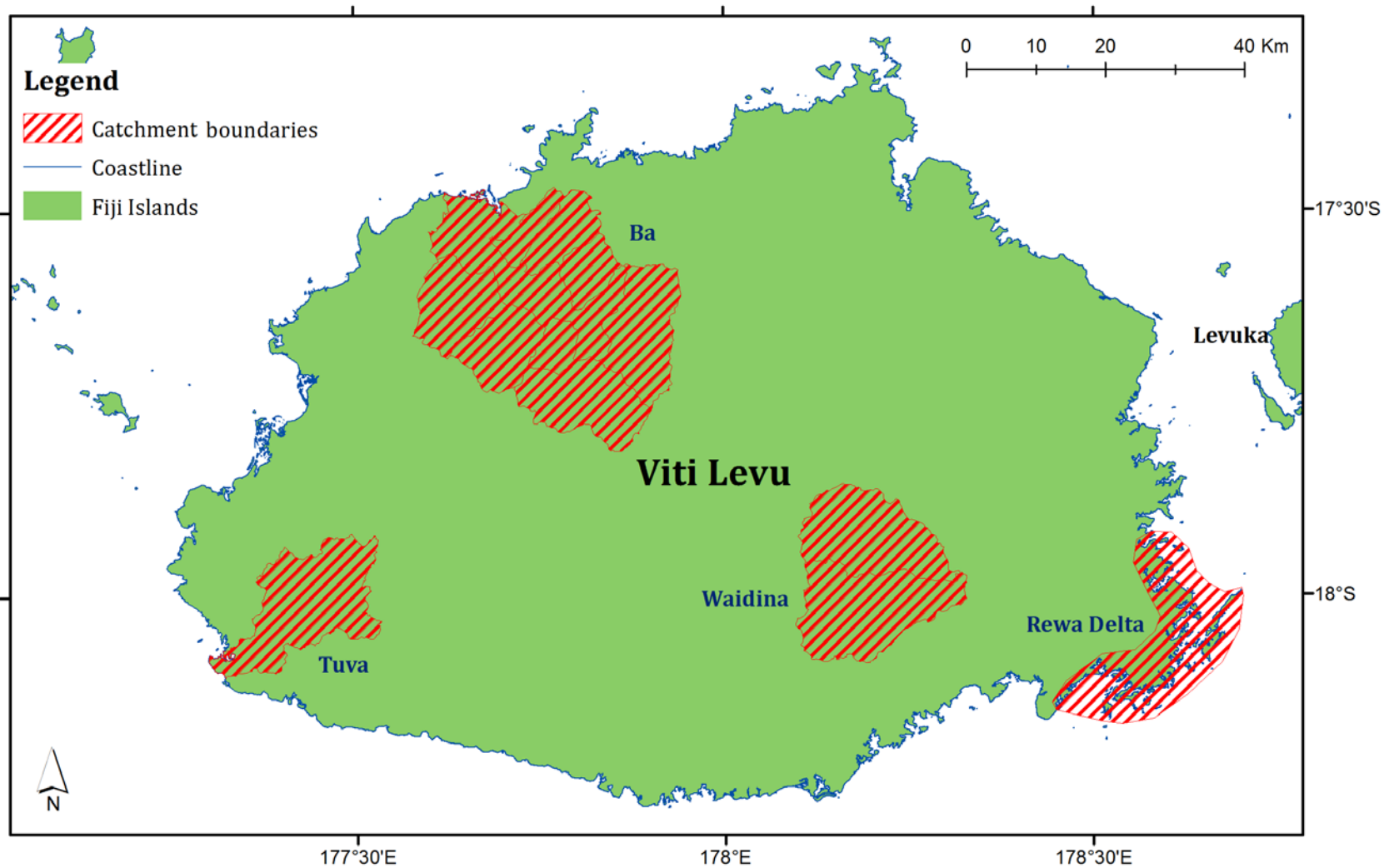
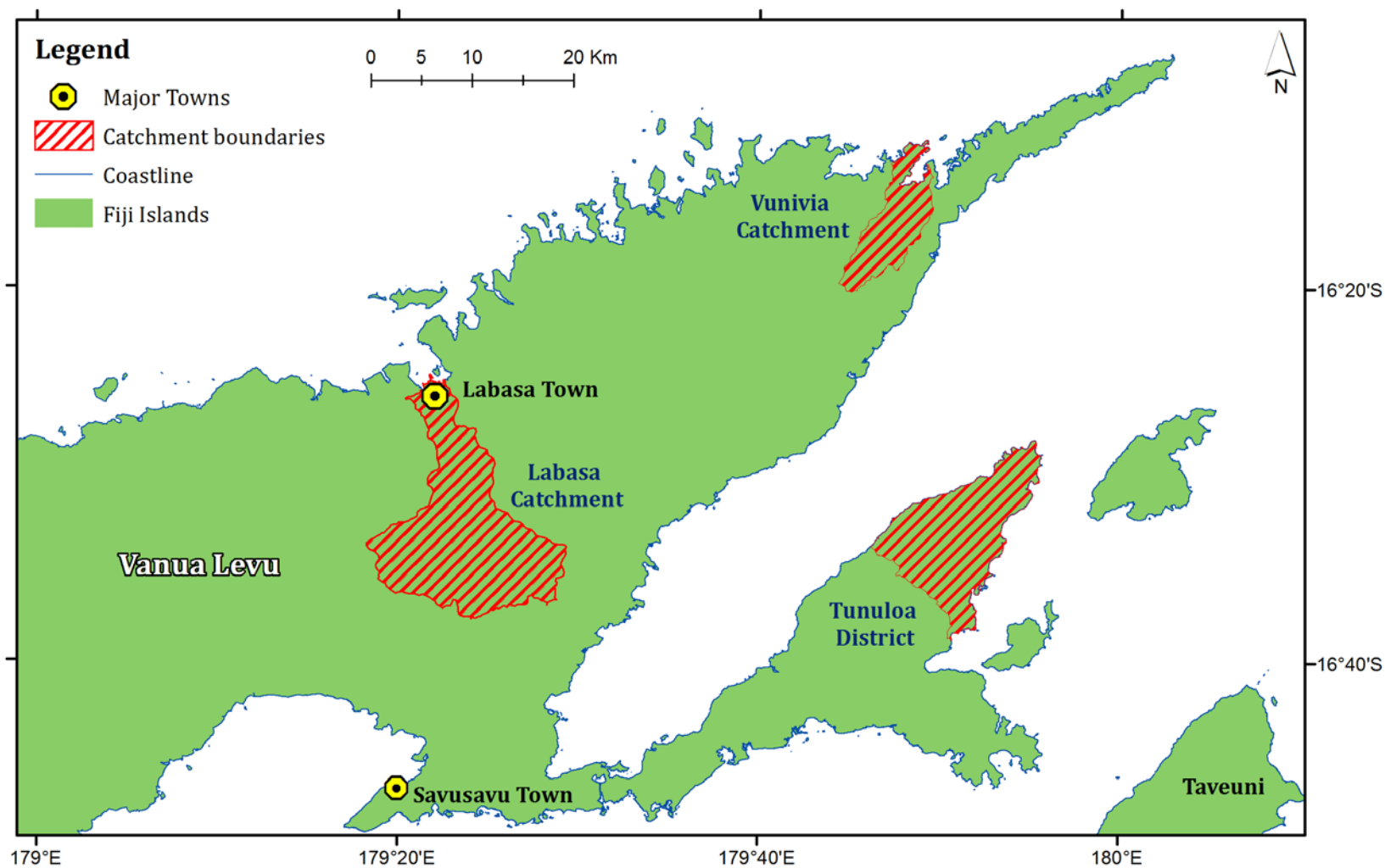


Figure 4. Map of Vanua Levu project catchments: Labasa, Vunivia and Tunuloa district (source: H. Wendt, 2014)



## 2.3 PROJECT GOAL, OBJECTIVE, OUTCOMES AND OUTPUTS

The **project immediate objective** is to preserve biodiversity, ecosystem services, sequester carbon, improve climate resilience and sustain livelihoods through a ridge-to-reef management of priority watersheds in the two main islands of Fiji.

To achieve this objective, the project shall make interventions at two interconnected levels: national (Project Outcomes 2.2, 3.1, 3.2) and catchment level (Project Outcomes 1.1, 1.2, 2.1, 2.2, 3.1), and cross cutting (Project Outcome 4.1). Based on careful consideration of the scope for implementing a Ridge-to-Reef integrated catchment management approach in Fiji, six priority and model catchments were identified for inclusion in the project – these are three catchments on the main island of Viti Levu, viz. Ba River, Tuva River and Rewa (Waidina River /Rewa Delta) and three catchments on the second largest island of Vanua Levu, viz. Labasa River, Tunuloa district and Vunivia River. The project will address critical gaps and needs in biodiversity conservation for terrestrial and marine ecosystems and threatened species including need for improved financial sustainability for protected areas and locally managed marine areas (Component 1); enhanced ecosystem services in the six catchments, especially increased carbon sequestration in forests, including mangroves/blue carbon (Component 2), integrated catchment management approach involving improved management of water, soil and agro-ecosystem resources (Component 3), and strengthen knowledge and awareness of R2R management and technologies, and associated environmental and socio-economic benefits within the national stakeholders and local communities (Component 4). Project interventions, which are structured according to these four main component areas, have been designed and developed through a participatory process facilitated by the R2R PPG phase and subsequent consultations with the Fijian Government, communities in the six catchments and numerous other stakeholders in private and NGO sectors. Project outcomes and outputs are discussed in the following section while details of planned activities are given in Section II – Part I Strategic results framework.

### 2.2.1 COMPONENT 1: CONSERVATION OF TERRESTRIAL AND MARINE BIODIVERSITY

(Total Cost: USD 9,863,325; GEF grant: USD 2,977,445; Co-financing: USD 6,885,880)

A coordinated and integrated approach, focusing conservation resources on national priorities, is essential to achieve efficient conservation of biodiversity. In Fiji this will need to include active involvement of landowners, a good socio-cultural understanding of target communities, improved collaboration between the various stakeholders, provision of sustainable alternative economic activities, and a commitment to long funding cycles for projects (Keppel *et al.* 2012). In addition to Sovi Basin and the major planned new terrestrial protected areas, there is an opportunity within the R2R project to protect, enhance and expand the areas of two highly threatened ecosystems viz. tropical dry forest (especially in Ba and Tuva) and riparian forest associations in all six R2R catchments. The R2R project, through its catchment management committees and awareness programs, is also well placed to take a leading role in promoting an understanding, appreciation and conservation of mangrove ecosystems. The guidelines, including resilience principles and strategies, adapted and developed for the MPA network at Kubulau, Vanua Levu and their application in adaptive and ecosystem-based management processes (Weeks and Jupiter 2013), have great potential for reconfiguring the LMMA/MPA networks in the R2R project areas, and with greater compliance, resilience and long-term marine conservation benefits.

The overarching objective of this R2R component is to better document and value the priority ecosystems/areas and threatened species present, and associated ecosystem services in the

selected catchments and sustainably secure their conservation through a holistic management approach, which allows for the continuation of ecological processes and other essential ecosystem services. The activities and outcomes in the component represent an important contribution to the global public good of conserved biodiversity, in an era of mega-extinction, and are especially significant because they protect highly endangered ecosystems, such as tropical dry forests and biodiversity hotspots with high levels of endemism, including well-preserved, species-rich coral reefs and unique endemic families such as Degenariaceae. A Communities Conservation Officer, based in the Ministry of iTaukei Affairs, will serve as the project focal point for this component, ensuring optimal inputs and engagement with traditional resource owners and liaising with and coordinating inputs and activities involving the recently created Provincial Conservation Officers (also within the MiTA). The general approach to be followed in Component 1 will involve the following steps:

- Biophysical survey of the catchment, including an audit of known biodiversity assets,
- Comprehensive biodiversity assessments (BIORAPs) in little-studied areas of putatively high conservation value,
- Identification and demarcation of new protected areas<sup>9</sup> in collaboration with traditional landowners in a fully informed and transparent process, that emphasizes that PAs need to be managed in perpetuity for that purpose,
- Development and implementation of PA management plans that secure and enhance the protection status through all necessary means including legal, long-term financing, building local community support and awareness/income generating opportunities, reducing pressures or finding alternatives for potentially damaging/ threatening activities; developing conservation values of buffer zones including through planting of endangered species and/or providing habitat,
- Increasing the biodiversity conservation values in non-protected areas through a diverse array of cost-effective and appropriate measures such as:
  - Increasing the area of permanent forest estate for multiple use forests, especially improving connectivity of PAs and areas of high conservation value,
  - Increasing tree species and genetic diversity in all types of planted forests (including plantations and agroforests),
  - Re-seeding coral reefs with clams and sea cucumbers,
- Controlling and better managing environmentally invasive species, e.g. locating tilapia fishponds in areas that are remote waterways containing endangered native fish; trial measures to control African tulip,
- Awareness campaigns, e.g. on reducing the amount of burning, and clearing of mangroves, and amongst fisherman on the importance of abiding by fishing regulations on seasonal bans and size limits, and the values and roles of marine top chain predators and/or keystone species such as sharks, parrot-fish and sea-cucumbers, and
- Adaptive research and development on marine management tools, e.g. restocking, species protection, seasonal versus permanent no-take/tabu zones, fishing gear restrictions and crown of thorns starfish removal.

### **Outcome 1.1: Improved management effectiveness of existing and new protected areas**

(Total cost: USD 5,709,767; GEF USD 2,555,891; Co-financing: USD 3,153,876)

#### *Output 1.1.1 Expanded terrestrial and marine PA System*

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<sup>9</sup> According to IUCN/ Dudley (2008) protected areas are a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values



This output aims to expand and increase the efficacy of the terrestrial and marine PA system of Fiji, by taking into account the factors recognized by IUCN as needed for successful long term *in situ* conservation viz. a) Representativeness, comprehensiveness and balance; adequacy; coherence and complementarity: positive contribution; consistency, along with cost effectiveness, efficiency and equity, but with a constraint that the activities need to be undertaken within the six priority catchments, several of which are overall in a highly degraded condition and more in need of restoration, including to reduce flooding and sedimentation. Under Component 1 three new terrestrial protected areas in Tunulua (4,400 ha), Tuva (1,300 ha) and Vunivia (3,500 ha) totaling covering 9,200 ha) will be delineated and formally established to conserve biodiversity, especially threatened and poorly represented ecosystems and endangered, endemic species, and maintain ecosystem goods and services in an R2R context. The main mechanism for protecting inshore and coastal marine ecosystems in Fiji is through locally managed marine areas (LMMAs) and the R2R project will work with traditional fishing rights owners to improve the biodiversity conservation over a vast a marine protected area in Ba (153,180 ha), Labasa (142,300 ha), Rewa (15,510 ha), Tunulua (70,940 ha), Tuva (970 ha) and Vunivia (13,200 ha) and totaling 396,100 ha (covering mangroves, seagrass meadows and coral reefs).

The following activities will be undertaken:

Activity	Description
All catchments	
1.1.1.1	Communities conservation officers appointed by TAB and established with office facility and vehicle in Lautoka and Labasa
Ba catchment	
1.1.1.2	Vanua o Votua iqoligoli committee, with guidance and support from Department of Fisheries (R2R), to review current community conservation action plan and marine protected areas (LMMA and tabu areas) connected with Ba River. Identify and demarcate agreed locations and appropriate conservation tools for enhanced protected LMMA (IUCN VI) (Year 1). This review to be conducted in close consultation with the broader local community, private sector stakeholders (fisher folk and tourism operators) and NGOs (notably USP IAS, and WCS) and take into account the result of the planned Department of Fisheries marine resource inventory planned for 2014 and existing LMMA work facilitated by USP IAS in previous years.
1.1.1.3	Ba River (freshwater) qoligoli to develop management plan and implement and lobby for required actions and practices to restore freshwater fisheries (including especially prawn, kai and finfish) (Year 2).
Labasa catchment	
1.1.1.4	Macuata Cokovata qoligoli committee and also, qoligoli owners for Vanua Labasa and Wailevu, with guidance and support from Department of Fisheries (R2R), to develop/review, rationalize/confirm, better plan location of marine protected areas (LMMA and tabu areas) connected with Labasa River. Identify and demarcate agreed locations and appropriate conservation tools for enhanced protected LMMA (IUCN VI) (Year 1). This review to be conducted in close consultation with the broader local community, private sector stakeholders (fisher folk and tourism operators) and NGOs (notably FLMMA and WWF).
1.1.1.5	Labasa (freshwater) qoligoli to develop management plan and implement and lobby for required actions and practices to restore freshwater fisheries (including especially prawn, kai and finfish). (Year 2).
Rewa delta catchment	
1.1.1.6	Yaubula or iqoligoli committees in Rewa delta (including Vanua o Noco and Vanua o Burebasaga qoligolis, with guidance and support from Department of Fisheries (R2R), to review and establish marine protected areas (LMMA and tabu areas) in Rewa Delta. Communities to consider an enhanced protected LMMA (IUCN VI) and, if desired, then identify and demarcate agreed locations and appropriate conservation tools (Year 1-2). This process would be informed through Department of Fisheries baseline survey and likely from consultation with the broader local communities, private sector stakeholders (fisher folk and tourism operators) and NGOs (notably USP IAS and FLMMA)
Tunulua catchment	

1.1.1.7	Undertake negotiations with eleven mataqalis involving NFMV, R2R/DoE, TLTB, TAB and NTF, to confirm interest formalize existing terrestrial Protected Area in Tunulua catchment (Year 1)
1.1.1.8	Relevant Government authorities (notably DoE, TAB and TLTB) liaise with Natewa & Tunulua mataqalis on the PA, agreed PA area mapped, management plan developed and agreed, sustainable financing secured (including initial GEF input) and the PA formally gazetted (Years 2, 3, 4)
1.1.1.9	Cakaudrove Tunulua qoliqoli committee, with guidance and support from Department of Fisheries (R2R), to review and establish marine protected areas (LMMA and tabu areas) connected with rivers and creeks in the Tunulua district. Identify and demarcate agreed locations and appropriate conservation tools for enhanced protected LMMA (IUCN VI) (Year 1). This review to be conducted in close consultation with the broader local communities, private sector stakeholders (fisher folk and tourism operators) and NGOs (notably USP IAS and NFMV).
Tuva catchment	
1.1.1.10	Undertake negotiations with Noiboro mataqali (Yavusa Noiboro; Vunamoli), involving R2R/DoE, FPL, TLTB, TAB and NTF, to confirm interest expressed during PPG and discuss options to proceed with new terrestrial Protected Area in upper Tuva catchment (Year 1)
1.1.1.11	Relevant Government authorities (notably DoE, TAB and TLTB) liaise with landowners (Vunamoli village) on planned Upper Tuva Catchment PA, area mapped, management plan developed and agreed, sustainable financing secured (including initial GEF input) and the PA formally gazetted (Years 2, 3, 4)
1.1.1.12	Vanua o Cuvu and Tuva qoliqoli committee, with guidance and support from Department of Fisheries (R2R), to review and establish marine protected areas (LMMA and tabu areas – covering 970 ha) connected with Tuva and Natadola Rivers. Identify and demarcate agreed locations and appropriate conservation tools for enhanced protected LMMA (IUCN VI) (Year 1). This review to be conducted in close consultation with the broader local communities, private sector stakeholders (fisher folk and tourism operators, notably Intercontinental Fiji Golf Resort and Spa/Natadola and Robinson Crusoe Island Resort/Likuri Island) and NGOs (notably FLMMA, CORAL) (Year 2)
1.1.1.13	Tuva (freshwater) qoliqoli to develop management plan and implement/lobby for required actions and practices to restore freshwater fisheries (including especially prawn, kai and finfish) (Year 2)
Vunivia catchment	
1.1.1.14	Vanua o Namuka and Dogotuki qoliqoli committee, with guidance and support from Department of Fisheries (R2R), to review their current marine protected area (LMMA and tabu areas – totaling 13,260 ha especially that part most closely connected and associated with Vunivia River. Identify and demarcate agreed locations and appropriate conservation tools for enhanced protected LMMA (IUCN VI) (Year 1). This review to be conducted in close consultation with the broader local community, private sector stakeholders (fisher folk, Also Island, Bekana Island) and NGOs (notably USP IAS, FLMMA)
1.1.1.15	Undertake negotiations with the landowners in Vunivia catchment (viz. Namako, Nubuilagi and Nautuutu mataqalis), involving R2R/DoE, TLTB, TAB and NTF, to discuss options to develop a new terrestrial/forested Protected Area in Vunivia catchment (up to approx. 3500 ha). (Year 2)
1.1.1.16	Relevant Government authorities (notably DoE, TAB and TLTB) liaise with landowners on planned Vunivia Catchment PA, area mapped, management plan developed and agreed, sustainable financing secured (including initial GEF input) and the PA formally gazetted (Years 3,4)

### *Output 1.1.2 Improved management of PA system*

With the exception of Sovi Basin Protected Area, other ‘protected’ areas in the priority catchments have no formal written management plans and are subjected to minimal management interventions. Such ‘protected’ areas are considered sub-optimal in achieving their immediate conservation objectives and in the longer term are at risk of a potentially serious erosion of their biodiversity conservation values. The project will address this problem as outlined here: in the six priority catchments through commissioning rapid, standardized assessments and reporting of biodiversity assets (baseline information) in existing and planned new terrestrial and marine PAs. These assessments will be undertaken in the first year of the project by a Conservation NGO and Provincial

Conservation officers with assistance from communities, and under guidance/direction of USP IAS and DoE. The next step (in years 2 and 3) will be to develop simplified, readily comprehensible written and illustrated adaptive management plans in the Fijian language for four terrestrial and four marine PAs. R2R project resources would then be allocated to implement key aspects of the management plans, through collaborative partnerships under a community governance body, in years 3 and 4, e.g. For *qoliqoli*/LMMAs, project resources to be available for:

- Undertaking thorough reviews of LMMAs (similar to Kubulau/ WCS approach),
- Raising awareness, and undertaking education and capacity building,
- Improving enforcement and compliance of local regulations and *tabu* areas (building on Mali/WWF work and other FLMMMA work around Fiji), and
- Rehabilitation of mangroves, seagrass meadows and corals.

The R2R project will also support and implement conservation-focused livelihood projects in the buffer zones and neighbouring villages of the planned new terrestrial and marine PAs: these will be vital to continuing landowner and local community support and better ensure the protection, integrity and sustainability of the PAs. Several priority projects has been identified during R2R PPG catchment and community visits and based on community needs and priorities. Appropriate livelihood projects will be implemented in the first two years of the project to bolster income opportunities associated with resource conservation and protection and reduce pressures on the PAs. In involving the communities, R2R will create economic empowerment, leadership and ownership and in the catchment sites particularly for women. Consultations with PPG team visits on project identification have focused on those impacting natural resources conservation and environment sustainability e.g. smokeless stove, water/sanitation, composting, solar food drying, honey production, mariculture (especially seaweed, sea cucumber, giant clams) and yasi/sandalwood plantings. All social groups will be assisted with capacity building and training by R2R for implementation of livelihood projects. This supports the inclusive socio/economic development measure and especially to increase the earning capacity of women, avoid gender discrimination and reduce poverty. Engaged extensively in interviews during the field visits, women were found to undertake most of the livelihood activities, plant, harvest and sell in addition to household chores, school/child care and providing food for the family. Women are very well-attuned to the potentials for different livelihood projects, as well as the needs and priorities of the community.

The following activities will be undertaken:

Activity	Description
All catchments	
1.1.2.1	Specific upgrading village R2R Projects - selected livelihood projects and activities to promote R2R biodiversity conservation goals and improved management in and in the buffer-zones of PAs (Years 1, 2, 3 and 4).
Ba catchment	
1.1.2.2	Prepare management plan for enhanced protected (IUCN VI) LMMA with local community management and governance body. Development of the management plan based on existing community conservation action plan to be led by FLMMMA and the Vanua o Votua qoliqoli committee, working with the Department of Fisheries and Yaubula Management Support Team, and other interested parties in Year 2. Management plan for enhanced Ba LMMA implemented through a collaborative learning partnership, viz. community based adaptive management, led by the Vanua o Votua qoliqoli and the local community (with technical backstopping and assistance from the Department of Fisheries, YMST/Provincial Conservation Officer, FLMMMA and NGOs). R2R project resources provided for awareness/ education, improved fisheries management, enforcement & compliance and mangrove restoration in Years 3 & 4.
Labasa catchment	

1.1.2.3	Prepare management plan for enhanced protected (IUCN VI) LMMA in Macuata with local community management and governance body. Development of the management plan based on existing community conservation action plan to be led FLMMMA and the Macuata Cokovata qoliqoli, Vanua Labasa qoliqoli and Vanua Wailevu qoliqoli committees, working with the Department of Fisheries and YMST, and other interested parties in Year 2. The latter will include private sector (Tourism operators and Labasa Chamber of Commerce to assess opportunities for inclusion of user fees). Management plan for an enhanced Macuata-Labasa LMMA to be implemented through a collaborative learning partnership, viz. community based adaptive management, led by the three concerned qoliqolis and the local community (with technical backstopping and assistance from the Department of Fisheries, YMST/Provincial Conservation Officer, FLMMMA and WWF). R2R project resources to be provided for awareness/education, improved fisheries management, enforcement & compliance, and mangrove restoration in Years 3 & 4.
Rewa – Waidina sub-catchment	
1.1.2.4	Revised management plan for Sovi Basin PA in Year 1 (with guidance and inputs from CI, National Trust of Fiji and/or USP IAS and iTaukei landowners)
1.1.2.5	Management plan for Sovi Basin PA implemented through a collaborative partnership led by landowners with input and assistance from Provincial Conservation Officer and NGOs in Years 2-4. R2R activities to include agrobiodiversity conservation and use in traditional and new agroforestry systems and replanting of selected, adapted threatened Fiji tree species in buffer zones and trial removal of African tulip trees within Sovi Basin and in a surrounding buffer of up to 5-10 km, especially along drainage lines. The agrobiodiversity conservation work will be a collaborative effort involving local farmers, USP (Prof Randy Thaman), SPC-CePACT, Conservation International (Mr. Vilikesa Masibalavu), Mrs Suliana Siwatibau (involved in conserving traditional/heirloom crop varieties), PRF, along with DoA and DoF.
Rewa delta catchment	
1.1.2.6	Prepare management plan for enhanced protected (IUCN VI) LMMAs in Rewa Delta. Development of the management plan based on existing community conservation action plan to be led by FLMMMA and the respective qoliqoli committees (including Vutia and Nasoata Island), working with the Department of Fisheries and YMST, and other interested parties in Years 2-3. Management plan for enhanced Rewa Delta protected area (LMMA and seascape) implemented through a collaborative dynamic learning partnership, viz. community based adaptive management. The management plan implementation to be led by the respective qoliqolis and the local communities (with technical backstopping from Department of Fisheries, YMST/Provincial Conservation Officer and FLMMMA). R2R project resources to be provided for awareness/education, improved fisheries management, enforcement & compliance and mangrove restoration in Years 3 & 4.
Tunuloa catchment	
1.1.2.7	Comprehensive BIORAP survey of Tunuloa district (with a focus on better preserved and intact forested areas) conducted by USP IAS in Year 2.
1.1.2.8	Management plan for strengthened Natewa Peninsula PA developed by NatureFiji-MareqetiViti (NFMV) and iTaukei landowners in Year 3 (with redrawn boundaries and informed by BIORAP); including identification and development of long-term financing (conservation donors and financiers of PES, with plan to use Sovi Basin Trust Fund mechanism with initial seed money from GEF 5 STAR).
1.1.2.9	Management plan for strengthened Natewa Peninsula Forest PA implemented through a collaborative partnership led by landowners with communities, and technical backstopping and support of Provincial Conservation Officer/YMST and NFMV in year 4. Plan to include replanting of selected, adapted threatened Fiji tree species in degraded portions and in buffer zones.
1.1.2.10	Prepare management plan for enhanced protected (IUCN VI) LMMA with local community management and governance body. Development of the management plan based on existing community conservation action plan and to be led by USP IAS/FLMMMA and the Cakaudrove Tunuloa qoliqoli committee, working with the Department of Fisheries and YMST in Year 2. Management plan for enhanced Tunuloa LMMA implemented through a collaborative learning partnership, viz. community based adaptive management, led by the Cakaudrove Tunuloa qoliqoli and the local communities (with technical backstopping and assistance from the

	Department of Fisheries, YMST/Provincial Conservation Officer and FLMMMA). R2R project resources to be provided for awareness/education, improved fisheries management, enforcement & compliance and mangrove restoration in Years 3 & 4
Tuva catchment	
1.1.2.11	Comprehensive BIORAP survey of site for a new Tuva PA (located in upper Tuva catchment and adjacent part of upper Nadi catchment, Vunamoli mataqali), to be conducted by USP IAS in Year 1.
1.1.2.12	Management plan developed for new Tuva PA, including fire protection measures and compatible livelihood/income generating activities in buffer areas; identification and development of long-term financing (conservation donors and financiers of PES – REDD+ and biodiversity conservation - and using Sovi Basin Trust Fund mechanism with initial seed money from GEF 5 STAR). Plan to include replanting of selected, adapted threatened Fiji tree species in degraded portions and in buffer zones.
1.1.2.13	Prepare management plan for new protected (IUCN VI) LMMA with local community management and governance body. Development of the management plan based on existing community conservation action plan and to be led by FLMMMA and the Vanua o Cuvu and Tuva qoliqoli committee, working with the Department of Fisheries and YMST, and other interested parties in Year 2. The latter will endeavor to include key private sector stakeholders (notably Intercontinental Fiji Golf Resort and Spa/Natadola and Robinson Crusoe Island Resort/Likuri Island to assess opportunities for inclusion of user fees). Management plan for new Tuva LMMA implemented through a collaborative learning partnership, viz. community based adaptive management, led by the Vanua o Cuvu and Tuva qoliqoli and the local communities (with technical backstopping and assistance from the Department of Fisheries, YMST/Provincial Conservation Officer and FLMMMA). R2R project resources to be provided for awareness/education, improved fisheries management, enforcement & compliance and mangrove restoration in Years 3 & 4.
Vunivia catchment	
1.1.2.14	Management plan developed for new Vunivia terrestrial PA – with its relationship to Dogotuki REDD+/permanent forest estate clarified - including identification and development of long-term financing (conservation donors and financiers of PES and using Sovi Basin Trust Fund with initial seed money from GEF 5 STAR). Plan to include replanting of selected, adapted threatened Fiji tree species in degraded portions and in buffer zones.
1.1.2.15	Prepare management plan for enhanced protected (IUCN VI) LMMA with local community management and governance body. Development of the management plan based on existing community conservation action plan and to be led by USP IAS/FLMMMA and the Vanua o Namuka and Dogotuki qoliqoli committee, working with the Department of Fisheries and YMST, and other interested parties in Year 2. The latter will endeavor to include key private sector stakeholders (notably Bedara and Also Islands). Management plan for enhanced Dogotuki LMMA implemented through a collaborative learning partnership, viz. community based adaptive management, led by the Vanua o Namuka and Dogotuki qoliqoli and the local communities (with technical backstopping and assistance from the Department of Fisheries, YMST/Provincial Conservation Officer and FLMMMA). R2R project resources to be provided for awareness/education, improved fisheries management, enforcement & compliance and mangrove restoration in Years 3 & 4. Note: for management efficiency the area covered by the enhanced LMMA would cover the entire Vanua o Namuka and Dogotuki qoliqoli (rather than only that portion most closely connected with the Vunivia river outflow, which includes 355 ha mangrove)

## **Outcome 1.2: Improved financial sustainability for terrestrial and marine protected area systems**

(Total cost: USD 4,153,558; GEF USD 421,554; Co-financing: USD 3,732,004)

*Output 1.2.1: Valuation of biodiversity conservation and other ecosystem services completed in at least two sites as basis for sustainable conservation finance approaches*

An effective approach to increasing financing for PAs is through having careful and thorough economic valuation of the ecosystem services which such PAs are providing, including for biodiversity conservation, water catchment, coastal protection and carbon sequestration. The proponents/champions of these PAs, including the traditional owners, are then in better position to use this information to approach potential financing sources to generate funding streams for their ongoing, long-term protection and management. Furthermore, given the current paucity of such information on valuation of ecosystem services in for Fiji, such studies would contribute to the literature, complement other work planned in Fiji such as in IUCN/MACBIO and complete the IUCN/MESCAL study for Rewa mangroves, and help to develop a wider appreciation of the values of PAs, especially at higher levels of Government, including in planning and economic ministries.

Accordingly the R2R project will engage a natural resource economist(s) to undertake valuations of the biodiversity conservation, carbon sequestration, water catchment and other ecosystem services of native forested portions of the Waidina sub-catchment; and for the Rewa Delta mangroves and seascape PA (and building on IUCN/MESCAL socio-economic study and other data).

The project will engage NatureFiji-MareqetiViti to conduct rapid assessments of the value of ecosystem services in other terrestrial protected areas and LMMAs/MPAs using the Toolkit for Ecosystem Service Site-based Assessment (TESSA) which has recently been developed by Birdlife International. This information will also be useful in quantifying the benefits provided by the different protected areas, and may highlight aspects warranting a more comprehensive analysis.

The following activities will be undertaken:

Activity	Description
Rewa – Waidina sub-catchment	
1.2.1.1	Valuation of biodiversity conservation, carbon sequestration, water catchment and other ecosystem services of native forested portions of the Waidina sub-catchment (including Sovi Basin PA and Wainavadu) by natural resource economist (consultant) in Year 1. Results are used in the preparation of management plans and during consideration of alternative uses.
Rewa delta catchment	
1.2.1.2	Valuation of biodiversity conservation, carbon sequestration, harvested wild goods (subsistence and artisanal fisheries) and other ecosystem services of Rewa Delta mangroves and seascape PA by resource economist (consultant) in Year 1, following up and working with IUCN who initiated this work and has had socio-economic study concluded and available as an input. Results are used in the preparation of management plans and during consideration of alternative uses.
Ba, Labasa, Tunuloa, Tuva and Vunivia catchments	
1.2.1.3	Assessment of the forest carbon stock and fisheries biodiversity/sustainable livelihoods values in mangrove ecosystems connected with the R2R priority catchments. The artisanal and subsistence fisheries study to be modelled on the 1993 fisheries catch study (Rawlinson et al. 1995), including gender-disaggregated data, and involving the Women in Fisheries NGO, as well as their values as nurseries for ocean-going species such as hammerhead sharks and mackerel/wahloo.
Labasa, Tuva, Vunivia catchments	
1.2.1.4	Rapid valuation of ecosystem services provided by LMMAs including carbon sequestration (i.e. blue carbon including mangroves), harvested wild goods and nature based recreation. To be conducted by NFMV using Toolkit for Ecosystem Service Site-based Assessment (TESSA) in Years 1 & 2.
Tunuloa, Tuva, Vunivia catchments	
1.2.1.5	Rapid valuation of ecosystem services provided by the planned new terrestrial protected areas in Tunuloa, Tuva and Vunivia - To be conducted by NFMV using TESSA in Years 2 and 3.

*Output 1.2.2: Review of user fee system and options for LMMA in Fiji, including development and implementation of user fee system for Tuva/Natadola*

User fee systems provide a potential sustainable financing mechanism for protected areas to ensure their natural resources and biodiversity are properly and sustainably managed. In this project, the work on user fee systems will focus on LMMAs which provide the greatest potential from tourism. Those involved in the coastal tourism/fisheries sector consider that national user fee system for LMMAs in Fiji would likely be cumbersome and difficult to implement – viz. which users pay, how will funds be collected and disbursed. Local user fee systems have been recently introduced and are being trialed in Fiji by a few organisations, tourist operators and communities, and appear promising.

It is noted that user fee systems for LMMAs are likely to be highly geographic/context specific and dependent on such tourist activities such as snorkeling, diving and game fishing. Accordingly the project to commission a review of the various user-fee systems currently operating in Fiji, by CORAL, tourist businesses and communities to better identify and document prerequisites for likely success and develop guidelines for local user-fee systems. Quite remarkably, in the Fiji context, the marine seascapes and coastlines of the six R2R catchments are relatively devoid of seaside resorts reliant on marine activities. Accordingly the project will pilot one user-pay system in the Natadola/Tuva area which has three coastal resorts, including the major Natadola Intercontinental, and potential for further coastal tourist development given proximity to Nadi International Airport.

The following activities will be undertaken:

Activity	Description
All Fiji	
1.2.1.1	Review of user fee system and options for LMMA in Fiji by Coral Reef Alliance/FLMMA in Year 1; implement recommended improvements, as applicable in Year 2 onwards.
Tuva catchment	
1.2.1.2	Trust fund established Tuva-Natadola LMMA/MPA, with trust fund management committee established to identify long-term sources of funding, including exploration qoliqoli user fee system (e.g. InterContinental Fiji Golf Resort and Spa, Natadola Beach Resort and Robinson Crusoe Island Resort/Likuri Island) – and to oversee use of trust funds (Years 3 & 4). Initial seed money to trust fund provided by GEF 5 STAR.

## **2.2.2 COMPONENT 2: CONSERVATION, RESTORATION AND ENHANCEMENT OF CARBON STOCKS THROUGH SUSTAINABLE FORESTRY**

(Total Cost: USD 7,433,034; GEF grant: USD 2,613,869; Co-financing: USD 4,819,165)

This component of the project focuses on reforestation of grasslands and rehabilitation of degraded forest lands, commencing with model, demonstration plots in all catchments. Additionally, this component will implement innovative REDD+ methodologies as well as payment for environmental services schemes, including forest certification. This will be accompanied by utilizing mitigation measures focused on maintaining forest carbon stocks and increasing sequestration of carbon through forest conservation, reforestation, afforestation and enrichment planting will also contribute to biodiversity conservation, improved watershed management and improved food security. Within the watershed, field-level interventions will be undertaken in all six priority catchments. In Waidina (including Sovi and Wainavada) and Vunivia catchments, the existence and maintenance of relatively large areas of intact forests will also positively impact on ecosystem services downstream in protected marine areas/LMMAs. Reforestation of highly degraded grasslands using native tree species in the Tuva catchment will improve the ecological integrity of the coral reefs downstream in the Natadola Bay and Likuri Island thereby promoting eco-tourism activities. Planting stock will be produced in nurseries with demonstrated capability to produce high

quality stock of appropriate native species and seed sources, including especially Department of Forestry, private sector, NGO partnerships such as Conservation International's (CI) network of community nurseries and through DoA-initiated Landcare groups. Local people will be trained in seed collection and processing for the species desired and required for reforestation. They will also be involved in planting and in the critical early maintenance phase – wherever possible and desirable the tree seedlings will be established together with intercrops. In some places, activities may also include trial removal of invasive alien species (e.g. African tulip, *Cordia alliodora* and *Maesopsis eminii*) that have colonized degraded areas. Major plantation growers such as Fiji Pine Group and Fiji Hardwood Limited will be assisted in their efforts to obtain FSC certification, including especially through protection and enhancement of high priority conservation areas within their leases and reforestation of riparian buffers with native trees that would not be available for logging.

## **Outcome 2.1: Carbon stocks restored and enhanced in priority catchments**

(Total cost: USD 3,692,593; GEF: 1,707,850; Co-financing: USD 1,984,743)

### *Output 2.1.1: Restoration and enhancement of carbon stocks in degraded forests in six priority water catchments using native tree species commencing with demonstration plots in each catchment*

The objective of this output is to sustainably increase the stores of carbon in forest biomass and soils in the six R2R catchments. Forest and tree-related R2R interventions will be undertaken in such a manner as to achieve substantial carbon sequestration whilst at the same time providing other catchment and ecosystem co-benefits, e.g. replanting and restoration of mangroves, riparian buffers and degraded eroding sloping sites in the upper catchments; utilizing threatened and endangered tree species in mixed plantings to enhance biodiversity conservation; planting multipurpose, indigenous fruit and nut trees and species which will promote apiculture/honey production to improve environmentally-benign livelihood options and engender local support.. It is also absolutely essential that early in the first year of the project, steps are undertaken for DoF and other project partners (SPC, private sector and communities) to collect the seed and assemble the germplasm of the tree species required for plantings to commence in the second year. In some areas of secondary forest, it is planned that once-off stand improvement activities be undertaken: these may including removal/cutting of invasive tree species, enrichment planting and direct seeding with native framework tree species and cutting of overtopping vines – notably *wadamu* (*Merremia peltata*). An important value-add to this component will be involve R&D partners, such as Department of Forestry, Pacific Reforestation (Fiji) Ltd, USP and University of Southern Cross/ACIAR to establish sample plots to measure growth and survival of reforestation programs and impacts of enrichment plantings and stand improvement: such collaborations with maximize knowledge to be used in future reforestation activities in the catchments and throughout Fiji (and indeed internationally) and to aid Fiji's REDD+ strategy, and work in pilot sites such as Emalu on Viti Levu.

The baseline forest carbon stocks (CO<sub>2</sub> equiv.) in each catchment, according to forest/vegetation type is provided in Table 8 with a total of 49,550,444 MT CO<sub>2</sub> equivalents. The carbon stocks (direct lifetime) to be sequestered and conserved through the project is 2,730,213 MT CO<sub>2</sub> equivalents (or 5.5% of baseline): the quantities for each catchment are indicated in the SFM/REDD+ tracking tool and in Table 10. The computations used follow the SMF/REDD+ TT guidelines and applied in other GEF-approved projects: only the additional avoided emissions and enhanced sequestration attributable to the project are accounted and the lifetime length is defined as 20 years.



Table 10. Carbon stocks (direct lifetime in MT CO<sub>2</sub> equiv) to be sequestered and conserved in each priority R2R catchment through project interventions

	Measures to increase forest carbon stocks (avoided emissions and enhanced sequestration)						
	Protected mangroves	Protected forests (PAs)	New planted forests	Rehabilitated native forests	New agroforests	Reforested grasslands (assisted natural regeneration)	Total additional carbon sequestered
Ba	137,820		39,636		2,753	403,700	583,908
Labasa	90,000		39,636	8,258	2,753	48,517	189,163
Tunuloa		541,200	13,212	8,258	2,753		565,422
Tuva	21,300	159,900	52,848		2,753	146,800	383,601
Vunivia		430,500	11,010	8,258	2,753		452,520
Waidina & Rewa delta	518,160		26,424	8,258	2,753		555,595
All catchments	767,280	1,131,600	182,766	33,032	16,518	599,017	2,730,213

#### Ba – 583,908 MT CO<sub>2</sub> equiv

- Mangrove protection - 750 MT (estimated) x 4,594 ha x 4% = 137,820 MT CO<sub>2</sub> equiv
- 270 ha new planted forests growing @ 4 MT of wood, including large roots (50% carbon x 3.67) per ha per year x 20 years = 39,636 MT CO<sub>2</sub> equiv
- New agroforests – 50 ha growing @ additional 1.5 tonne of wood (50% carbon x 3.67) per ha per year x 20 years = 2,753 MT CO<sub>2</sub> equiv
- 11,000 ha grassland with native tree recruitment @ additional 1 MT of wood (50% carbon x 3.67) per ha per year x 20 years = 403,700 MT CO<sub>2</sub> equiv

#### Labasa – 189,163 MT CO<sub>2</sub> equiv

- Mangrove protection - 750 MT (estimated) x 3,000 ha x 4% = 90,000 MT MT CO<sub>2</sub> equiv
- 270 ha new planted forests growing @ 4 MT of wood, including large roots (50% carbon x 3.67) per ha per year x 20 years = 39,636 MT CO<sub>2</sub> equiv
- 150 ha rehabilitated native forest growing @ additional 1.5 tonne of wood (50% carbon x 3.67) per ha per year x 20 years = 8,258 MT CO<sub>2</sub> equiv
- New agroforests – 50 ha growing @ additional 1.5 tonne of wood (50% carbon x 3.67) per ha per year x 20 years = 2,753 MT CO<sub>2</sub> equiv
- 1,322 ha grassland with native tree recruitment @ additional 1 MT of wood (50% carbon x 3.67) per ha per year x 20 years = 48,517 MT CO<sub>2</sub> equiv

#### Tunuloa – 565,422 MT CO<sub>2</sub> equiv

- Tunuloa Forest PA – Avoided emissions through forest protection calculated at 50% of the PA (totaling 4,400 ha) with current forest carbon stock estimated at 246 MT CO<sub>2</sub> equiv per ha (national average for indigenous forest) = 541,200 MT CO<sub>2</sub> equiv

- 90 ha new planted forests growing @ 4 MT of wood, including large roots (50% carbon x 3.67) per ha per year x 20 years = 13,212 MT CO<sub>2</sub> equiv
- 150 ha rehabilitated native forest growing @ additional 1.5 tonne of wood (50% carbon x 3.67) per ha per year x 20 years = 8,258 MT CO<sub>2</sub> equiv
- New agroforests – 50 ha growing @ additional 1.5 tonne of wood (50% carbon x 3.67) per ha per year x 20 years = 2,753 MT CO<sub>2</sub> equiv

#### **Tuva – 383,600.5 MT CO<sub>2</sub> equiv**

- Mangrove protection - 750 MT (estimated) x 710 ha x 4% = 21,300 MT CO<sub>2</sub> equiv
- Tuva Forest PA - Avoided emissions through forest protection calculated at 50% of the PA (totaling 1,300 ha) with current forest carbon stock estimated at 246 MT CO<sub>2</sub> equiv per ha (national average for indigenous forest) = 159,900 CO<sub>2</sub> equiv
- 360 ha new planted forests growing @ 4 MT of wood, including large roots (50% carbon x 3.67) per ha per year x 20 years = 52,848 MT CO<sub>2</sub> equiv
- New agroforests – 50 ha growing @ additional 1.5 tonne of wood (50% carbon x 3.67) per ha per year x 20 years = 2,753 MT CO<sub>2</sub> equiv
- 4,000 ha grassland with native tree recruitment @ additional 1 MT of wood (50% carbon x 3.67) per ha per year x 20 years = 146,800 MT CO<sub>2</sub> equiv

#### **Vuniviva – 452,520 MT CO<sub>2</sub> equiv**

- Vuniviva Forest PA – Avoided emissions through forest protection calculated at 50% of the PA (totaling 3,500 ha) with current forest carbon stock estimated at 246 MT CO<sub>2</sub> equiv per ha (national average for indigenous forest) = 430,500 MT CO<sub>2</sub> equiv
- 75 ha new planted forests growing @ 4 MT of wood, including large roots (50% carbon x 3.67) per ha per year x 20 years = 11,010 MT CO<sub>2</sub> equiv
- 150 ha rehabilitated native forest growing @ additional 1.5 tonne of wood (50% carbon x 3.67) per ha per year x 20 years = 8,258 MT CO<sub>2</sub> equiv
- New agroforests – 50 ha growing @ additional 1.5 tonne of wood (50% carbon x 3.67) per ha per year x 20 years = 2,753 MT CO<sub>2</sub> equiv

#### **Waidina & Rewa Delta – 555,595 MT CO<sub>2</sub> equiv**

- Mangrove protection - 1,500 MT x 8,636 ha x 4% = 518,160 MT CO<sub>2</sub> equiv
- 180 ha new planted forest growing @ 4 MT of wood, including large roots (50% carbon x 3.67) per ha per year x 20 years = 26,424 MT CO<sub>2</sub> equiv
- 150 ha rehabilitated native forest growing @ additional 1.5 tonne of wood (50% carbon x 3.67) per ha per year x 20 years = 8,253 MT CO<sub>2</sub> equiv
- New agroforests – 50 ha growing @ additional 1.5 tonne of wood (50% carbon x 3.67) per ha per year x 20 years = 2,753 MT CO<sub>2</sub> equiv

The following activities will be undertaken:

Activity	Description
<b>Ba catchment</b>	
2.1.1.1	Land Use Planning Unit of DoA with DoF to identify and map the highest priority sites for reforestation and restoration, including riparian zones (subject to regular flooding) and areas contributing to greatest soil erosion (viz. cleared steep areas with erodible soil types).

2.1.1.2	Reforestation plan developed by PMU/DoF in Year 1. The target area to be reforested is 90 ha in each of Years 2, 3 and 4. In the first year of planting (Year 2) the three selected areas will be in the mid and upper catchment - Marou settlement - 10 ha of dakua makadre ( <i>Agathis macrophylla</i> ), and critically endangered highlands yaka ( <i>Dacrydium nausoriense</i> ), interplanted with doi, 10 ha of indigenous honey-flora (including critically endangered <i>Cynometra falcata</i> , <i>Erythrina</i> , <i>Geiossois</i> , <i>Maniltoa</i> , <i>Meterosideros</i> , <i>Storkiella</i> and <i>Syzygium</i> spp.), 10 ha of fruit/nut trees especially breadfruit, tarawau, dawa, mango and coconut); Nanoko village – 20 ha of mixed native tree species including from dakua makadre, dakua salusalu, yaka, doi, kauvula, yasiyasi, and 10 ha of fruit/nut trees especially breadfruit, tarawau, dawa, mango and coconut); 30 ha of degraded lands in area between Navala and Bukuya villages using faster growing local pioneer and framework tree species viz. qumu ( <i>Acacia richii</i> ), velau ( <i>Gymnostoma vitiensis</i> ), doi ( <i>Alphitonia zizyphoides</i> ), makosoi ( <i>Cananga odorata</i> ), koka ( <i>Bischofia javanica</i> ), molau ( <i>Glochidion seemannii</i> ), gadoa ( <i>Macaranga</i> spp. including <i>M. graffeana</i> and <i>M. harveyana</i> ), nokonoko ( <i>Casuarina equisetifolia</i> ) and vau ( <i>Hibiscus tiliaceus</i> ). Note: Several of these species are most efficiently established by through direct seeding and branch cuttings. Riparian buffer zone plantings for bank and soil protection to include productive indigenous fruit and nut trees, especially ivi ( <i>Inocarpus fagifer</i> ) in waterlogged sites, and coconut ( <i>Cocos nucifera</i> ) and uto/breadfruit ( <i>Artocarpus altilis</i> ) in better-drained sites.
2.1.1.3	Seedlings for project plantings grown by FPL (Lololo), DoF, Conservation International and its community nursery network in neighboring Ra, and/or private nurseries on Viti Levu.
2.1.1.4	Field plantings undertaken early in the wet season (mid-November – January) by local community under supervision of DoF, with support from community coordinators
2.1.1.5	Maintain new plantings through regular ring weeding during first two years after planting and protect from fire
2.1.1.6	An analysis by a mangrove expert (local consultant) with villagers to identify sites suitable for mangrove replanting within Ba Delta during year 1. These may include degraded areas on landward edge and drier areas for replanting with sagale ( <i>Lumnitzera littorea</i> ), sinu ( <i>Excoecaria agallocha</i> ) and dabi ( <i>Xylocarpus</i> spp.) and new sediments for stabilization with tiri ( <i>Rhizophora</i> spp.). A small-scale trial planting with dogo ( <i>Bruguiera gymnorhiza</i> ) may also be attempted on deeper sediments/better sites (e.g. using planting stock from Moala/Nadi).
2.1.1.7	Establish 10 ha of mangrove demonstration stands per year in years 2, 3 and 4
Labasa catchment	
2.1.1.8	Land Use Planning Unit of DoA with DoF to identify and map the highest priority sites for reforestation and restoration, including riparian zones (subject to regular flooding), areas contributing to greatest soil erosion (viz. cleared steep areas with erodible soil types) and eroding coastlines.
2.1.1.9	Reforestation plan developed by PMU/DoF in Year 1. The target area to be reforested is 90 ha in each of Years 2, 3 and 4 mainly in the lower and mid-catchment areas (as upper catchment is being assisted through GEF 4 PAS). Species choice will be faster growing local pioneer and framework tree species viz. qumu ( <i>Acacia richii</i> ), the threatened Macuata tagitagi ( <i>Acacia mathuatensis</i> ), velau ( <i>Gymnostoma vitiensis</i> ), doi ( <i>Alphitonia zizyphoides</i> ), makosoi ( <i>Cananga odorata</i> ), koka ( <i>Bischofia javanica</i> ), molau ( <i>Glochidion seemannii</i> ), gadoa ( <i>Macaranga</i> spp. including <i>M. graffeana</i> and <i>M. harveyana</i> ), nokonoko ( <i>Casuarina equisetifolia</i> ), kauvula ( <i>Endospermum</i> spp.) and vau ( <i>Hibiscus tiliaceus</i> ) and indigenous honey-flora (including critically endangered <i>Cynometra falcata</i> , <i>Erythrina</i> , <i>Geiossois</i> , <i>Maniltoa</i> , <i>Meterosideros</i> , <i>Storkiella</i> and <i>Syzygium</i> spp.). Riparian buffer zones, degraded by illegal cropping activities, to be planted with productive indigenous fruit and nut trees, especially ivi ( <i>Inocarpus fagifer</i> ) in waterlogged sites, with coconut ( <i>Cocos nucifera</i> ), uto/breadfruit ( <i>Artocarpus altilis</i> ), jackfruit ( <i>Artocarpus heterophyllus</i> ), tamarind ( <i>Tamarindus indicus</i> ) and mango ( <i>Mangifera indica</i> ) in better-drained sites. Villages to be involved in reforestation include Korowiri, Vunimoli and Waikisi villages, FPL and FHL (viz. native species along riparian buffer zones) and Land Care groups (viz. Siberia and Korotari, noting that the latter will need to be reactivated).
2.1.1.10	Seedlings for project plantings grown by DoF and Siberia Land Care Group (to be assisted with nursery infrastructure).
2.1.1.11	Field plantings undertaken early in the wet season (mid-November – January) by local community under supervision of DoF with support from community coordinator.
2.1.1.12	Maintain new plantings through regular ring weeding during first two years after planting and protect from fire.

2.1.1.13	Undertake once-off stand improvement activities in secondary forests (at a scale of 50 ha per year in Years 2, 3 and 4), including removal of environmentally invasive tree species (especially <i>Cordia alliodora</i> and <i>Spathodea campanulata</i> ), cutting of overtopping vines ( <i>Merremia peltata</i> ) and direct seeding with makita ( <i>Atuna racemosa</i> ), ivi ( <i>Inocarpus fagifer</i> ) and dawa ( <i>Pometia pinnata</i> ). This Activity to be undertaken in the mid-upper catchment commencing with Waikisi village (in Year 2).
Rewa – Waidina sub-catchment	
2.1.1.14	Identify areas in need of reforestation notably wastelands of African tulip and degraded open secondary forests: this activity to be undertaken through collaboration of DoF and landowners in Year 1.
2.1.1.15	Reforestation plan developed by PMU/DoF in Year 1, including enrichment planting and stand improvement. The plan will entail reforestation at a rate of 60 ha per year in Years 2, 3 and 4. For new protection (REDD+) forests on open sites, and in which logging will be prohibited, then fast growing local pioneer and framework tree species will be planted viz. qumu ( <i>Acacia richii</i> ), velau ( <i>Gymnostoma vitiensis</i> ), doi ( <i>Alphitonia zizyphoides</i> ), makosoi ( <i>Cananga odorata</i> ) and koka ( <i>Bischofia javanica</i> ). In more open areas such forests are best established using agricultural intercrops such as ginger, yaqona, dalo, dalo-ni-tana, vudi, cassava and pineapple. 15 ha will be established per year in association with each of four villages located in upper/mid catchment each year. Note: In the first year of plantings, viz. project year 2, the four villages/mataqali would be from Delailasekau, Nasevou, Nadakuni, and either Nabukaluka or Navurevure). In subsequent years (3 & 4) there will be an opportunity to include and work with other villages based on expressed interests and extent to which previous tree plantings have been maintained
2.1.1.16	Seedlings for R2R project plantings are to be grown by DoF (Colo-I-Suva Nursery) and/or private nurseries in Naitasiri.
2.1.1.17	Field plantings will be undertaken by local communities/landowners under supervision of DoF and Provincial Conservation Officer (if appointed) with support from community coordinators.
2.1.1.18	New plantings are to be maintained through regular ring weeding and release from vines during first two years after planting.
2.1.1.19	Undertake once-off stand improvement activities in secondary forests (at a rate of 50 ha per year in Years 2, 3 and 4), including removal/cutting of African tulip and cutting of overtopping vines – wadamu ( <i>Merremia peltata</i> ). The selected forests will be those which are in reasonably good condition and preferably located in buffer zones for Sovi Basin Protected Area (within 5-10 km), with the stand improvement to be undertaken by Nadakuni villagers.
Rewa delta catchment	
2.1.1.20	Conservation Officer (Rewa Province) with villagers to identify sites suitable for mangrove replanting within Rewa Delta during year 1. These may include degraded areas on landward edge for replanting with sagale ( <i>Lumnitzera littorea</i> ) and dabi ( <i>Xylocarpus</i> spp.), open areas in the central portions for planting with dogo ( <i>Bruguiera gymnorrhiza</i> ) and new sediments for stabilization with tiri ( <i>Rhizophora</i> spp.).
2.1.1.21	Establish 10 ha of mangrove demonstration stands per year in years 2, 3 and 4.
Tunuloa catchment	
2.1.1.22	Identify areas in need of reforestation, notably grasslands/gasau ( <i>Miscanthus</i> ) and degraded open secondary forests with areas of active soil erosion: this activity to be undertaken through collaboration of DOF and landowners in Year 1
2.1.1.23	Reforestation plan developed by PMU/DoF in Year 1, including enrichment planting and stand improvement. The plan will include reforestation (at a rate of 30 ha per year in Years 2, 3 and 4). In more open areas such forests should be established using agricultural intercrops such as ginger, kava, dalo, dalo-ni-tana, vudi, cassava and pineapple. For new protection (REDD+) forests on open sites, and in which logging will be prohibited, then fast growing local pioneer and framework tree species will be planted viz. qumu ( <i>Acacia richii</i> ), velau ( <i>Gymnostoma vitiensis</i> ), doi ( <i>Alphitonia zizyphoides</i> ), makosoi ( <i>Cananga odorata</i> ), koka ( <i>Bischofia javanica</i> ), dawa ( <i>Pometia pinnata</i> ) and kauvula ( <i>Endospermum macrophyllum</i> and the threatened <i>E. robbieannum</i> ). One area to be established with 10 ha of indigenous honey-flora (including from critically endangered <i>Cynometra falcata</i> , <i>Erythrina</i> spp., <i>Geiossois</i> spp., <i>Maniltoa</i> spp., <i>Meterosideros</i> spp., threatened <i>Storkiella vitiensis</i> and <i>Syzygium</i> spp.).
2.1.1.24	Seedlings for project plantings grown by DoF and/or private/NGO nurseries in Cakaudrove Province
2.1.1.25	Field plantings undertaken by local community under supervision of DoF with support from

	community coordinators.
2.1.1.26	Maintain new plantings through regular ring weedings and release from vines during first two years after planting.
2.1.1.27	Undertake once-off stand improvement activities in secondary forests (also 50 ha per year in Years 2, 3 and 4), including removal of environmentally invasive tree species (especially <i>Cordia alliodora</i> and <i>Maesopsis eminii</i> ), cutting of overtopping vines (especially <i>Merremia peltata</i> ) and direct seeding with makita ( <i>Atuna racemosa</i> ), ivi ( <i>Inocarpus fagifer</i> ) and dawa ( <i>Pometia pinnata</i> )
Tuva catchment	
2.1.1.28	Land Use Planning Unit of DoA with DoF and landowners (especially in Vunamoli and Uto villages) to identify and map the highest priority sites for reforestation and restoration, including especially riparian zones (subject to regular flooding), a buffer zone around the planned protected area and areas contributing to greatest soil erosion (viz. cleared steep areas with erodible soil types in Upper Tuva catchment, including landslips in pine planted areas).
2.1.1.29	Reforestation plan developed by PMU/DoF in Year 1. The target area to be reforested is 120 ha in each of Years 2, 3 and 4. Species choice will be faster growing local pioneer and framework tree species viz. qumu ( <i>Acacia richii</i> ), velau ( <i>Gymnostoma vitiensis</i> ), doi ( <i>Alphitonia zizyphoides</i> ), makosoi ( <i>Cananga odorata</i> ), koka ( <i>Bischofia javanica</i> ), molau ( <i>Glochidion seemannii</i> ), gadoa ( <i>Macaranga</i> spp. including <i>M. graffeana</i> and <i>M. harveyana</i> ), nokonoko ( <i>Casuarina equisetifolia</i> ) and vau ( <i>Hibiscus tiliaceus</i> ), with one area of indigenous honey-flora (including from critically endangered <i>Cynometra falcata</i> , <i>Erythrina</i> spp., <i>Geiossois</i> spp., <i>Maniltoa</i> spp., <i>Meterosideros</i> spp., threatened <i>Storkiella vitiensis</i> and <i>Syzygium</i> spp.). Riparian buffer zones can include productive indigenous fruit and nut trees, especially ivi ( <i>Inocarpus fagifer</i> ) in waterlogged sites, coconut ( <i>Cocos nucifera</i> ) and uto/breadfruit ( <i>Artocarpus altilis</i> ) in better-drained sites.
2.1.1.30	Seedlings for project plantings grown by FPL, DoF and/or private nurseries on Viti Levu.
2.1.1.31	Field plantings undertaken early in the wet season (mid-November – January) by local community under supervision of DoF, FPL, with support from community coordinators (and preferably involving members of all eight villages in Tuva catchment in years 3 & 4 )
2.1.1.32	Maintain new plantings through regular ring weeding during first two years after planting and protect from fire.
Vunivia catchment	
2.1.1.33	Land Use Planning Unit of DoA with DoF to identify and map the highest priority sites for reforestation and restoration, including riparian zones (subject to regular flooding), areas contributing to greatest soil erosion (viz. cleared steep areas with erodible soil types and including unused/abandoned road in northern part of catchment) and eroding coastlines.
2.1.1.34	Reforestation plan developed by PMU/DoF in Year 1. The target area to be reforested is 25 ha in Years 2, 3 and 4. Species choice will be faster growing local pioneer and framework tree species viz. qumu ( <i>Acacia richii</i> ), threatened Macuata tagitagi ( <i>Acacia mathuatensis</i> ), velau ( <i>Gymnostoma vitiensis</i> ), doi ( <i>Alphitonia zizyphoides</i> ), makosoi ( <i>Cananga odorata</i> ), koka ( <i>Bischofia javanica</i> ), molau ( <i>Glochidion seemannii</i> ), gadoa ( <i>Macaranga</i> spp. including <i>M. graffeana</i> and <i>M. harveyana</i> ), nokonoko ( <i>Casuarina equisetifolia</i> ) and vau ( <i>Hibiscus tiliaceus</i> ). Riparian buffer zones can include productive indigenous fruit and nut trees, especially ivi ( <i>Inocarpus fagifer</i> ) in waterlogged sites, coconut ( <i>Cocos nucifera</i> ) and uto/breadfruit ( <i>Artocarpus altilis</i> ) in better-drained sites. Coastal zones to be protected by mix of local coastal species including mainly coconut and dilo ( <i>Calophyllum inophyllum</i> ), and also nokonoko ( <i>Casuarina equisetifolia</i> ), vesi ( <i>Intsia bijuga</i> ), cibicibi ( <i>Maniltoa floribunda</i> ), vau ( <i>Hibiscus tiliaceus</i> ), tagitagi ( <i>Acacia simplicifolia</i> ), tavola ( <i>Terminalia catappa</i> ) and nawanawa ( <i>Cordia subcordata</i> ).
2.1.1.35	Seedlings for project plantings grown by DoF or private nurseries in Labasa-Seqaqa area.
2.1.1.36	Field plantings undertaken early in the wet season (mid-November – January) by local community under supervision of DoF, with support from community coordinators
2.1.1.37	Maintain new plantings through regular ring weeding during first two years after planting and protect from fire.
2.1.1.38	Undertake once-off stand improvement activities in secondary forests (on a scale of 50 ha per year in Years 2, 3 and 4), including planting of native tree species in open areas, e.g. velau ( <i>Gymnostoma vitiense</i> ), cibicibi ( <i>Maniltoa floribunda</i> ) and in gaps, e.g. vesi ( <i>Intsia bijuga</i> ), kauvula ( <i>Endospermum</i> spp.) and dakua makadre ( <i>Agathis macrophylla</i> ), cutting of overtopping vines ( <i>Merremia peltata</i> ) and direct seeding with makita ( <i>Atuna racemosa</i> ), ivi ( <i>Inocarpus fagifer</i> ) and dawa ( <i>Pometia pinnata</i> ).

**Outcome 2.2: Sustainable forest management achieved through innovative market-based schemes**

(Total cost: USD 3,758,026; GEF: USD 906,019; Co-financing: USD 2,834,422)

*Output 2.2.1: Completed forest certification and verification of timber supply chains for plantation forests (pine and potentially mahogany) covering 15,000 hectares to reduce pressure on forest resources, building on ongoing efforts*

The ultimate objective of this output would be for most if not all forestry operations in the six target catchments to be covered under an internationally well-recognized forest certification system, notably FSC. This would ensure that adverse environmental impacts of forest utilization are minimized. Under FSC certification, all areas of high conservation value forests would be identified and protected and riparian buffer zones are maintained with native tree species. The immediate output (15,000 ha pine plantation FSC certified) will be achieved through the respective, planned Catchment Management Committees in Ba, Labasa and Tuva liaising and working with Fiji Pine Ltd (FPL) to assist with the company to obtain and retaining its FSC certification. Key activities would involve the identification (comp 1) and protection of high conservation and remnant native forest, and restoration of native vegetation on landslips and in riparian zones on FPL leased estate which will have major catchment benefits in terms of soil conservation and water flows. This will be a major achievement and benefit to both Fiji Pine Ltd, the environment and the communities living in these catchments which often lay the blame for soil erosion, sedimentation and flooding at the poor logging practices of pine plantations, and failure or tardiness to replant.

The R2R project will plan for a similar approach and activities with the Fiji Hardwood Corporation in the Ba and Labasa catchments. The longer term objective would be for commercial logging operations in native forests in the six catchments to be FSC certified. The R2R project, through DoF, SPC and other collaborators, will initiate this process with Fiji Forest Industries (FFI) in Labasa, assisting FFI and its logging contractors/operators with training in SFM, forest harvest planning and reduced impact logging.

The following activities will be undertaken:

Activity	Description
Ba, Labasa and Tuva catchments	
2.2.1.1	Liaison by R2R PMU and respective CMC with Fiji Pine Ltd to assist with the company obtaining and retaining its FSC certification, including through identification and protection of high conservation and remnant native forest, restoration of native vegetation on landslips and in riparian zones on FPL leased estate.
Ba and Labasa catchments	
2.2.1.2	Liaison by R2R PMU and respective CMC with Fiji Hardwood Corporation assist with the company obtaining and retaining its FSC certification, including through restoration of native vegetation in riparian zones. NB – this may involve once-only, carefully planned and executed harvesting of mahogany trees near to minor streams as in some catchments the mahogany trees are allegedly contributing to reduced water quality during the dry season (following complete leaf drop/ brief deciduous period around September).
All catchments	
2.2.1.3	Liaison by R2R PMU, DoF and respective CMC with FFI and their logging contractors/operators to better inform them on FSC certification (including SFM and RIL) with objective to progressively have all native forest logging operations in the six catchments undertaken with FSC certification, commencing with FFI in Labasa.

*Output 2.2.2: Forest policy and related legal and regulatory frameworks reviewed and appropriately reformulated with alignment to SFM/REDD+ methodologies*

Currently in Fiji there are 26 different forestry-related legislations which make this a legally complex and sometimes confusing regulatory environment. The FAO-executed GEF PAS 4 project is assisting the Fiji Government with developing overarching forestry legislation while GIZ/SPC is assisting with Fiji's REDD+ strategy and implementation. The target completion of the FAO and GIZ/SPC initiatives are June 2016 and December 2015 (but with possibility of extension), respectively. Accordingly the R2R project limit itself to providing input into development of Fiji's forest and related legislation and regulations, especially in relation to SFM, REDD+ strategy and PES, through its SFM and CC Thematic working groups.

The following activities will be undertaken:

Activity	Description
National level	
2.2.2.1	R2R's SFM and CC Thematic working groups provide input into development of Fiji's forest and related legislation and regulations, especially in relation to SFM, REDD+ strategy and PES. Note: draft forestry legislation has been prepared and is with AG's office but there is likely to be opportunity for input/revision prior to its enactment in 2015.
2.2.2.2	Forest fire policy and legislation developed. This has been recognized by the Department of Forestry, Fiji Pine Ltd and other stakeholders as a major gap that needs to be addressed at the earliest opportunity to prevent another horrendous wildfire season as occurred during 2014.

*Output 2.2.3: Existing carbon monitoring, reporting and verification (MRV) systems reviewed and adapted to forests in Fiji*

The level of carbon presently stored in Fiji's forests has been estimated through a comprehensive national carbon stock assessment (above and below ground living biomass) by the DoF in 2010-11 and is currently being re-assessed through re-measurement of permanent sample plots and addition of new plots to fill gaps. These national assessments are required in order that Fiji may be eligible for funding support under REDD+ and through the World Bank's Forest Carbon Partnership. The planned activities under this output include R2R's SFM and CC Thematic working groups providing input and support to development of Fiji's MRV system; additional data from new forest carbon permanent sample plots (PSPs) in the R2R project sites gathered by and using the same protocols as the DoF (and thereby supplementing Fiji's forest carbon MRV system), and establishing additional PSPs prior to R2R reforestation activities and assessing the carbon sequestration impacts of the different reforestation and forest restoration/ enhancement interventions.

The following activities will be undertaken:

Activity	Description
National level	
2.2.3.1	R2R's SFM and CC Thematic working groups provide input and support to development of Fiji's MRV system, including through liaison with DoF (and also FAO Forestry Department and SPC LRD Forest and Trees)
All Catchments	
2.2.3.2	Data from new permanent forest carbon sample plots in the R2R project sites gathered using the same protocols as the DoF (and thereby providing opportunity to supplement Fiji's forest carbon MRV system)

2.2.3.3	Additional permanent forest carbon plots established in R2R project reforestation and forest restoration/enhancement sites prior to reforestation activities and measured again at the end of the project (Year 4)
Ba, Rewa – Waidina sub-catchment, Tuva catchments	
2.2.3.4	DoF in association with research partners (including Southern Cross University/ACIAR, SPC) establish sample plots, annually measure and reports on growth, survival and carbon sequestration in reforestation plantings of enrichment plantings, and impact of stand improvement activities.
Labasa, Tunulua and Vunivua catchments	
2.2.3.5	DoF establish sample plots to measure growth, survival and carbon sequestration of enrichment plantings and impact of stand improvement.

*Output 2.2.4: Capacity building for REDD+ for 50 staff in the Forestry and Environment Departments and about 60 community leaders in subject areas relevant for each group (e.g. carbon inventory, surveys, MRV, risk management/ mitigation)*

The rationale for this output is that awareness and capacity needs to be built amongst across a diverse range of Government, NGO and community stakeholders to fully and effectively implement Fiji's national REDD+ strategy and policy. The activities for this output will entail training and awareness programs in REDD+ for key staff in Department of Environment, Department of Forestry, TLTB, Foreign Affairs and International Cooperation (Climate Change), Provincial Conservation Officers, NGO and community representatives. Trained Government officers and community representatives will then hold meetings with staff and communities to ensure they are well informed on REDD+, especially Fiji's REDD+ strategy and progress, and important issues such as the requirement for Free, Prior and Informed Consent (FPIC) in UN-REDD Programs.

The following activities will be undertaken:

Activity	Description
All catchments	
2.2.4.1	Training and awareness programs in REDD+ for staff in DoE, DoF, TAB, TLTB, Foreign Affairs and International Cooperation (Climate Change), Provincial Conservation Officers, NGO and community representatives (to better ensure sustainability of R2R project objectives and activities) (Year 1)
2.2.4.2	Trained Government officers and community representatives hold meetings broader communities, including mataqalis, to ensure they are well informed on REDD+, especially Fiji's REDD+ strategy and progress and FPIC (Year 2)
Ba, Labasa and Tuva catchments	
2.2.4.3	Education and awareness campaigns to reduce wild fires in the areas where project-sponsored plantings are undertaken. Undertake assisted natural regeneration, including direct seeding of framework species into any inadvertently burnt areas and/or landslips. These activities are to be conducted with R2R project support to DoF, FPL and/or NGOs (CI and Live and Learn) with the aim of reducing the incidence and extent of human-related fires.

### **2.2.3 COMPONENT 3: INTEGRATED NATURAL RESOURCES MANAGEMENT**

(Total Cost: USD 18,963,646; GEF grant: USD 1,151,918; Co-financing: USD 17,811,728)

**Outcome 3.1: Integrated catchment management plans integrating conservation of biodiversity, forests, land and water formulated and implemented in priority sites**  
(Total cost: USD 12,937,686; GEF: 727,342; Co-financing: USD 12,201,344)

**Output 3.1.1** Biophysical, demographic and socioeconomic assessments conducted in six priority water catchments to inform integrated natural resources management



The R2R project will contribute to this output with the provision of biophysical, demographic and socio-economic data and assessments of the priority catchment sites as baseline information required for INRM. Data on demographic and socioeconomic of catchment sites are available as baseline information from the Fiji Bureau of Statistics (FBOS) but may require further verification and updating.

The following activities will be undertaken:

Activity	Description
All catchments	
3.1.1.1	Land Use Planning (DoA) to review of already collated and available biophysical data for catchments, based on a common methodology, and then undertake surveys to address and fill any gaps in information that may be needed for input into catchment management plans – (2nd Quarter, Year 1)
3.1.1.2	Demographic and socioeconomic data for the R2R catchments reviewed and refined by Ministry of Strategic Planning/ Bureau of Statistics as input into catchment management plans – (2nd Quarter, Year 1)
3.1.1.3	Survey outcomes and biophysical and demographic studies is made available to communities /stakeholders for information and to assist with formulation of management plans (Year 1)

Output 3.1.2 Catchment-wide integrated management plans with emphasis on interconnectivities of land, water, coasts, forests, and biodiversity developed, refined or strengthened in four priority catchments (Ba, Labasa, Tuva, and Vunivua)

For this output the R2R project, through the respective Catchment Management Committee (CMC), will initiate INRM at the community/provincial catchment level. R2R will provide empowerment and training to the community project leaders and participants to undertake catchment wide integrated management plans. The rapport and respect of the *Vanua* (see footnote in Annex 2) and understanding of the socio-political system is vital and full involvement and agreement of the *Vanua* will be required. Land Use Planning (DoA) to lead development of catchment management plans based on land use capability, socio-economic conditions, economic/livelihood options and environmental sustainability. Different sector plans, rationales for INRM and interconnectivities of the different sectors will be discussed in a hands-on learning environment. The training will be assisted and facilitated by relevant government officers who are also members of the divisional catchment management committee and appropriate NGOs. Much of the training will be practical sessions by the different Ministry/sector representatives who will also benefit with sector development plans knowledge and skills. Preparing catchment-wide management plans will create community solidarity, commitment and ownership of the R2R project as it will reflect their needs and priorities. The R2R project will assist in the community understanding of their catchment wide management plans by having the plans in easy to understand format in the community language.

The following activities will be undertaken:

Activity	Description
National	
3.1.2.1	Document catchment management plan process for Fiji context and with regards to Nadi River Basin Integrated Water Resources Management Demonstration Project, Land Use Planning study for Tuva and other catchments, Ra/CRISP research studies and Sovi (Waidina) cases
Ba, Labasa, Rewa-Waidina, Tuva and Vunivua catchment	
1.1.1.2	<ul style="list-style-type: none"> <li>Land Use Planning (DoA) to lead development of catchment management plans (based on land use capability, socio-economic conditions, economic/livelihood options and</li> </ul>

	<p>environmental sustainability).</p> <ul style="list-style-type: none"> <li>• Relevant government agencies and NGOs to facilitate capacity building and community participation in integrated catchment management plans</li> <li>• Consultations and networking mechanisms for coastal, mid-catchment and upper catchment communities be facilitated by the Catchment manager to exchange information and enhance knowledge especially of water, land ,forestry, coast to develop a fuller appreciation of the interconnectivities</li> <li>• Integrated Catchment Management Plans for each of Ba, Labasa, Tuva and Vunivia in order of sequence be developed in the first two years of the project, followed by Waidina sub-catchment and extended to whole of Rewa catchment (resources permitting/forthcoming)</li> </ul>
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**Output 3.1.3 Multi-stakeholder Catchment Management Committees (including community organizations) formed and strengthened to implement integrated catchment management plans in four catchments (Ba, Labasa, Tuva and Vunivia)**

Under this output the R2R project will focus on fulfilling the governance principle on stakeholder and people inclusive participation for awareness and capacity to be built across a wide and diverse range of government, NGO, community stakeholders all working together collectively to implement the catchment-wide management plans and the R2R/INRM Project. In the Fiji context the membership of the Multi-stakeholder Catchment Management Committee (CMC) for the priority sites will include the community/village, social professional and economic groups such as women, youth, farmers, fisherman, hotels, industry, education, tertiary institutions, private sector institutions, church, school, policeman, municipal councils, all government members of the divisional development committees, NGO etc. The respective R2R Catchments Coordinators, one for Viti Levu and one for Vanua Levu, will ensure that CMCs have their Constitution, rules and procedures which will involve election of Chair and office bearers, organization of works and SC/WG and regular meetings organized to strengthen their governance and commitment. R2R will support CMC awareness programmes including a focus on integrated catchment management and its wide benefits. During the life of the R2R project the CMC will function in an advisory and co-ordination role, with scope to move into a more formal and legislated management oversight role, e.g. if recommended as part of a new integrated natural resources/catchment management policy by the GoF.

The following activities will be undertaken:

Activity	Description
Ba, Labasa, Rewa – Waidina, Tuva catchments	
3.1.3.1	<ul style="list-style-type: none"> <li>• Establish Catchment Management Committees ensuring membership be made up of all multi-stakeholders including community organizations, women and youth sequentially starting</li> <li>• Establish CMC for Ba and Labasa in Year 1, and building on Nadi Basin Catchment Committee Model</li> <li>• Establish Catchment Management Committees for Tuva and Waidina in Year 2</li> <li>• Resources forthcoming/permitting then build on Waidina Management Committee, and progressively widen and extend to cover the whole Rewa Catchment in Years 3 (e.g. Rewa downstream from Waidina junction and Wainimala River) &amp; 4 (Rewa upstream of Waidina junction including Wainibuka River)</li> </ul>

**Outcome 3.2: Strengthened governance for integrated natural resources (land, water, biodiversity, forests) management**  
(Total cost: USD 6,025,960; GEF: USD 424,576; Co-financing: USD 5,601,384)

Output 3.2.1 National sectoral policies strengthened with INRM (covering land, water, forests, biodiversity) in the following sectors: forestry, agriculture, lands, fisheries, *i-Taukei*, tourism- especially eco- tourism and education

The R2R overarching objective is to provide the enabling environment for the introduction/ adoption of INRM and its integration into national sectoral policies. At the sector level, there are complex challenges with legislation which will require legislative reviews and amendments. There are also policy and governance issues. The R2R project will act as a catalyst: the GoF will take the lead role in accordance with its contractual obligations as a partner under co-financing arrangement with UNDP and GEF to manage these issues. This is considered crucial and will require strong government commitment at the earliest opportunity. Constraints that have been raised include overlapping and inappropriate legislations, unclear mandates between Ministries and contradictions in portfolio e.g. soil conservation is between EMA (DoE) and Improvement Act under Agriculture. In other cases, one sector could be under too many legislations e.g. Forestry currently has about 26 different related legislations creating a complex regulatory environment. It has also been determined that existing legislation is based on single issue e.g. land use, drainage, factories, pesticides, irrigation, rivers and streams and needs to be revised on ecosystem basis. R2R will appreciate that legislation concerning one particular environmental matter cannot be conducted in isolation of other environmental aspects, because they are interconnected (e.g. logging affects rivers and land use; quarrying affects rivers, land and riparian vegetation; increased sedimentation from logging, poor farming practices, and poorly planned human settlements affect the coastal environment). In addition, previous studies have identified 13 existing legislations governing the R2R specified sectors as inadequate and requiring amendment including:

- Agriculture Landlords and Tennant Act (ALTA) – amend to address limits to use of farmland, retaining remnant vegetation, preserving groundwater quality, soil compaction, enrichment of surface water, and especially environment sustainability;
- Environment Management Act (EMA) - improve application of EIA, carbon trading, natural resources inventory, adequate biodiversity conservation, broaden ICM to INRM;
- Forest Decree 1992 and Forest Policy 2007 - forest decree reviewed. SLM policy in Forest Policy to be implemented, mangrove protection and commercial mangrove harvesting ban identified in Fiji Forest Policy;
- Irrigation Act (Act No. 32 of 1973) - environment needs not considered - uncontrolled removal of vegetation can contribute to massive land degradation;
- Land Conservation and Improvement Act - being reviewed – needs to be expanded to include water resource planning management (as well as land); SLM practices need to be observed, implemented and properly monitored; and
- Fisheries Act- being reviewed and currently on-hold. Recognizing fishing rights holder's roles in *qoliqoli* management, review of maturity length, roles and power of honorary fish warden, fines for illegal practices and enforcement component.
- Rivers and Streams Act - established in 1880 and amended by ordinances since then - which defines public rights in rivers and streams (and the riparian zone of bank of 20 feet or 6 m from waterline during wet season) is in need of overhaul, to provide regulations to control land use, cultivation and vegetation management in this critically important zone.

Under this output the R2R project will address legislative reviews and amendments through its thematic working groups. Some issues of governance with regards to natural resources include weak institutional linkages, fragmented policy and/or overlapping areas of interest resulting in duplication or confusion. Decentralized participatory approaches have been limited and there is frequently a lack of capacity for monitoring, follow up and awareness. These are governance issues which the R2R project will endeavor to address through its INRM framework and participatory consultation process which will include multistakeholder, whole of government, society, partnership, civil society

and social groups. Awareness matters are to be addressed by R2R through its training and empowerment programme.

With respect to the economically vital tourism sector, the GoF plans to 'green' the tourism sector under GGF. In this context the R2R project will facilitate consideration of the eco-tourism and culture/heritage tourism, options which are both more environmentally sustainable and inclusive of local people. Education is also a vital sector for R2R for knowledge and awareness. The integration of INRM into the education sector can be facilitated through the CMCs at the divisional level and also at the community/school levels. The injection of INRM into the formal education sector either as curriculum or vocational subjects will encourage socio-cultural education of responsible environment stewardship and civic responsibility.

For INRM policy coherence with the different sectors and for sustainability, the different concerned Ministries will need to introduce INRM into its Strategic Plans and Budgets. The enabling environment for the adoption of INRM nationally as a policy will also be supported by the Green Growth Framework which the GoF has only recently launched. Its sustainable development agenda is synonymous and complementary to INRM under R2R. The MiTA has existing infrastructure and policy in place to assist in the replication/sustainability of INRM nationally and R2R can assist with specific capacity building measures.

The following activities will be undertaken:

Activity	Description
National	
3.2.1.1	DoE, with National Planning Office, and DoA, DoFish and DoF, and Lands & Mineral Resources, to lead development of a national policy on Integrated Natural Resources and Catchment Management Policy (INRCM) – its relationship to the new Green Growth Framework (GGF) and existing Integrated Coastal Management Framework will need to be established – the preferred option would be to have a single integrated natural resources policy which includes both catchments and coastal zones (Year 1 & 2)
All catchments	
3.2.1.2	R2R PMU to work with GoF to develop the most appropriate governance structure, institutional housing and resourcing to continue with catchment management programmes after project conclusion, and that this be achieved before year 4 and extended to other priority catchments in Fiji (such as Sigatoka and Navua Rivers)

Output 3.2.2 National and local government relevant agency staff (at least 30) trained for INRM through leadership and/or participation in project activities

Under this output the R2R project will introduce INRM into the respective priority catchments by implementing projects identified by the respective CMC as meeting important community needs and priorities while reducing pressures for unsustainable and degrading land uses. R2R partner Ministries will provide the necessary training for their staff (at least 30) as well as project participants from within the community. Such training is necessary for sustainability of R2R/INRM and also in view of it being a new concept and therefore requiring training and awareness. The training syllabus content will include leadership, project management, report writing and awareness of INRM. The R2R PMU will structure and employ the appropriate medium of learning which may include informal participatory workshops, structured/classroom lessons. The PMU will consult widely the services of the members of the divisional catchment committee (including e.g. environment officer (DoE), provincial conservation officer (TAB), DO, Roko, local agriculture officer, fishery officer, forestry officer, the school principal/head teacher, the policeman, the church Minister, industry representatives, the women groups, *Turaga ni koro*, farmer association, the fishermen, tertiary

institution and youths) to be either leaders and/or participants and can also be resource personnel to assist with training where appropriate. The PMU will work closely with training/academic institutions and other providers for any technical/scientific training required such as REDD+ and other payment for ecosystem services. The PMU will involve existing institutions and programmes to benchmark for best practice especially ones where practical lessons may be provided. R2R will provide familiarization visits to address the practical training aspects. The R2R project in providing such training opportunities is inculcating not only project awareness, empowerment but also commitment, ownership and leadership.

As part of the Pacific R2R program, the project (staff and counterparts) will participate in regional project activities organized by the Regional R2R project.

The following activities will be undertaken:

Activity	Description
<b>National</b>	
3.2.2.1	That R2R PMU in consultation with iTaukei/ITAB aim to have INRM included in existing capacity building and leadership programmes at Nadave Training Centre (Year 3)
3.2.2.2	Project staff and counterparts to participate in regional trainings that are organized by the Regional R2R Projects on themes that are relevant to the national Fiji R2R project.
<b>All catchments</b>	
3.2.2.3	Training of Roko Tuis, Assistant Rokos, community and village leaders in natural resource management and conservation, including leadership training, community participation, planning and negotiation skills. Note: Short term practical training on INRM for provincial/district/village has very high priority.
3.2.2.4	MoU with government agencies, tertiary institutions and NGOs for instructors/consultants to provide courses at village level in priority areas such as INRM, protected area management and reforestation technologies.

**Output 3.2.3 Empowered communities as a result of participation in:** 1) formulation of PA management plans and catchment management plans; 2) alignment of community livelihoods with local priorities; 3) development of market-based instruments by the project, including ecosystem services and 4) monitoring and reporting on progress and status of project to CMC.

To achieve its target to expand terrestrial and marine PA system and introduce PA and catchment management, the R2R project under Output 3.2.3 will focus on accelerating the process by empowering catchment communities to formulate their own conservation and catchment management plans through training and empowerment programmes to be undertaken by Community Catchments Coordinators, NGOs and provincial environment/conservation officers in collaboration with USP-IAS, IUCN and other NGOs. Training will involve workshops, consultation meetings and visits to communities, existing PAs and NGOs. The R2R project will improve community understanding on natural resources management, noting that there are currently only a few formal PA management plans in existence.

R2R will focus on empowering communities through awareness training and capacity building to enable communities consider and decide on development of market based instruments and ecosystem services for conservation and INRM development programmes in the catchment areas. A pre-requisite to this output is for the R2R project to provide awareness to communities on the inventory and value of their natural assets in the catchment sites. Thus the respective R2R catchments officer, in accordance with his TOR and R2R Training Plan will, given the technical nature outsource and engage tertiary institutions, NGOs and experts to provide the services. Through its development of market based instruments and PES, the project recognizes the need to provide a

sustainable income source to resource owners, the sustainability of the project and significance of local input and knowledge in the consideration of this aspect of the project. Awareness and training will cover and review of ongoing efforts such as REDD+, Sovi Basin Trust Fund, CORAL marine user-fee systems and other user pay mechanisms as well as forest certification.

The R2R project will facilitate empowering communities to monitor and report on progress and status of projects to the R2R PMU, including through training and mentoring of community leaders and provision of simple formats and stationery materials. The objective of this output is to establish an appropriate performance and reporting mechanism. The R2R required consultation and training/workshop will also provide opportunity for peer group learning, networking and sharing of reporting issues by participants should be one of the initial training needs to be met. Training will be undertaken by R2R project staff, especially the Communities Conservation Co-ordinators, including through regular visits and consultations to the community to monitor/gauge performance and provide practical lessons where appropriate – sit, listen and discuss with local people and undertake visit sites.

The following activities will be undertaken:

Activity	Description
All catchments	
3.2.3.1	Communities, especially resource owners and rights holders are involved, participate and contribute to management plans for PAs (MPAs/LMMAs and Terrestrial) and catchments (Years 1,2,3,4) and with representation on Catchment Management Committees
3.2.3.2	Educate and train R2R communities and link them with relevant agencies and organizations that can help them to develop new incomes sources and increase their economic and environmental sustainability, including relevant Government Ministries and departments (Industry and Trade for branding/marketing/incentives, Tourism for ecotourism/nature-base tourism development, Primary industries/Forestry and Fisheries for REDD+ and conservation farming, aquaculture/aquaponics and mariculture), SPC/Pacific Organic and Ethical Trade Community (POETCom) for fair trade and niche marketing, conservation NGOs (for PES opportunities), women's groups (through NCWF and SVT) and private sector (especially agricultural processors and exporters) (continuous)

## **2.2.4 COMPONENT 4: KNOWLEDGE MANAGEMENT**

(Total Cost: USD 982,654; GEF grant: USD 275,000; Co-financing: USD 707,654)

The main aim of this outcome is to improve data and information systems on biodiversity, forests and climate change, and land and coastal and marine management. The expected results include: a) the development of an information portal for easily accessible data and information sharing on biodiversity, forests and climate change and sustainable land and water management practices; and b) development of knowledge products and best practices for BD, LD, CC, IW, and SFM-REDD+ focal areas disseminated through various media.

This component will improve awareness, communications, and education and ensure that the experiences and results of this project are properly captured and disseminated to in-country stakeholders as well as project partners, including UNDP and GEF. The proper management of knowledge will require transparent and timely sharing of data, and other information through proper communication means, including IW:LEARN (GEF's International Waters Learning Exchange and Resource Network). The Fiji R2R project, especially through Component 4, will also link and work closely to the planned multi-focal PaciW:LEARN for the region. This will help the Pacific SIDS to

better address complex and common threats involving different disciplines and improve project sustainability.

**Outcome 4.1: Improved data and information systems on biodiversity; land, forests, coastal and marine management; climate change and best practices**

(Total Cost: USD 982,654; GEF grant: USD 275,000; Co-financing: USD 707,654)

**Output 4.1.1** Information portal established for easily accessible data and information on biodiversity, forests, coasts, land and water management practices, including climate change

This output will support the establishment of an information portal through the DoE website. The information portal will need to be readily accessible and includes all relevant information on R2R project, lessons learnt and with links to other relevant websites (including IW:LEARN, other Government Departments, CROP agencies and Conservation NGOs) other R2R projects in the Pacific Islands and elsewhere – key documents will be available in PDF format and readily downloadable. A knowledge management/ communications (KM) officer will be recruited for this component while IT/website development will be outsourced. The KM officer will gather baseline information on the current DoE website to determine how it will link to the project website and online portal. The KM Officer will also populate the information portal as well as to develop the portal policy and its communications/ visibility strategy.

The following activities will be undertaken:

Activity	Description
<b>National</b>	
4.1.1.1	A knowledge management/communications officer is recruited to gather baseline information on the current DoE website to determine how it will be used or link to the project website and online portal. The role of the KM officer is also to populate the information portal as well as to develop the portal policy and its communications/ visibility strategy
4.1.1.2	IT supports services contracted for design of the portal, its components and updating
4.1.1.3	A knowledge management advisory committee made up of representatives from the partner organizations involved with the project is set up to determine the direction of the portal and they can also act as champions for the project portal and serve the KM component of other related and relevant GEF/UNDP projects. The KM officer will act as the secretariat for this committee.
4.1.1.4	R2R project site developed on DoE website and information/ stories/ reports and publications regularly uploaded, with appropriate and functional links (including to/from other Government departments, conservation NGOs and other UNDP and/or GEF R2R projects).
4.1.1.5	Website periodically updated and internet traffic to DoE/R2R site monitored and analyzed to help improve the functioning and effectiveness of site
4.1.1.6	Link up with the regional KM platform in terms of providing content; provide information necessary for reporting progress of the national R2R project for overall R2R program reporting.

**Output 4.1.2** Overarching communications strategy, including selection and creation of appropriate knowledge products (brochures, flyers, videos) on all thematic/focal areas and best practices developed and disseminated through appropriate channels, including community meetings, site exchanges, and local and international print and broadcast media outlets

One of the first activities to be undertaken for this component and output will be to recruit a communications consultant: this person will then develop the branding, communications and visibility strategy for the project. Local experts and volunteers will be involved, trained and utilized to work with the communications consultant and project team to develop a communication strategy of the awareness programs and to design, produce, and maintain learning and communication materials for the target audiences. Briefings, short training and focused meetings will be conducted

to plan and implement the strategy as well as to build the team capacity. This strategy will then guide and inform the public communications elements of the project which are expected to involve and include preparation of information and awareness materials (brochures, flyers, videos) on R2R thematic/focal areas and best practices, and dissemination to specific target audiences. A key aspect is to maximize opportunities to promote R2R concepts and conservation practices in popular media and press (notably Fiji TV news and other programs, and Fiji newspapers and magazines).

The following activities will be undertaken:

Activity	Description
National	
4.1.2.1	Recruit a communications consultant to develop a communications and visibility strategy for the project
4.1.2.2	Prepare publicity and publications (brochures, flyers, videos) on R2R thematic/focal areas and best practices and disseminate to specific target audiences
4.1.2.3	Maximize opportunities to promote R2R concepts and conservation practices through direct engagement and in popular media and press

**Output 4.1.3** Community leaders, resource owners, farmers, educators and students better informed of best R2R land-use practices through program of knowledge exchange visits within catchments and, to and from neighboring catchments

The manner in which information is traditionally exchanged and information learnt in the Pacific Islands and Fiji, is somewhat different to many other parts of the globe. There is a great need for community leaders, resource owners and farmers to experience and observe things first-hand (rather than, e.g. through reading or accessing internet resources, information portals and alike). One of the best ways to educate, inform and energize local people in Fiji is to show them new and best practices in the field, and have these explained in local language and dialects by similar people, and/or aided by experienced field practitioners. The R2R project will have a large field component (especially through Component 2 and some of Component 3) and will be developing and demonstrating best practices in integrated catchment management, farming on sloping lands, reforestation, agroforestry, biodiverse multipurpose tree plantings and alike. These sites will provide ideal model, demonstration and education sites – in the first instance this output will use these sites for field and information exchange visits for local people living nearby and within the same catchment. These same sites would be available later on for visits from further afield, neighbouring catchments and indeed other islands, especially whether environmental conditions are similar and particularly exemplary model sites are involved.

The following activities will be undertaken:

Activity	Description
All catchments	
4.1.3.1	Organized field and information exchange visits to observe best R2R land use practices for community leaders, resource owners, famers, educators and students within the six priority catchments
4.1.3.2	Organized field and information exchange visits to observe best R2R land use practices for community leaders, resource owners, famers, educators and students from within the six priority catchments to other locations within Viti Levu and Vanua Levu
4.1.3.3	Organized field and information exchange visits to observe best R2R land use practices for community leaders, resource owners, famers, educators and students from areas and catchments adjacent to the six priority catchments



## 2.4 PROJECT INDICATORS

The key performance indicators for assessing the achievement of the project objective and outcomes are identified as follows. These indicators, along with their baseline values, targets and means of verification, and those of the output level are described in more detail in Section II Part I of this Project Document.

**Table 11. Project indicators and end-of-project targets**

Indicator	End-of-Project Target
<b>At Objective Level</b>	
Status of completion and implementation of the Fiji R2R Project Work plan	At six catchments have sound catchment management plans which promote better integrated natural resources management and which have been adopted and being implemented by Government agencies, private sector, NGOs and resource owners and users. Multi-stakeholder catchment management committees successfully operating in at least four catchments (Ba, Labasa, Tuva and Waidina)
Tracking Tool BD 1: Improved management effectiveness of existing and new protected areas	Improved management of existing PAs and LMMAs. Expansion of PA system including in Tunulua district (4,400 ha), Tuva catchment (1,300 ha) and Vunivia catchment (3,500 ha).
Tracking Tool BD 2: Increase in sustainably managed landscapes and seascapes that integrate biodiversity conservation	Rationalization of existing FLMMMA system including enhanced management and protection of LMMAs in in Ba (153,180 ha), Labasa (142,300 ha), Rewa (15,510 ha), Tunulua (70,940 ha), Tuva (970 ha) and Vunivia (13,200 ha) and totaling 396,100 ha (covering mangroves, seagrass meadows and coral reefs) which directly and indirectly contribute to biodiversity conservation, fisheries enhancement and sustainable use of other mangrove ecosystem services
Tracking Tool LD 1: Sustained flow of services in agro-ecosystems	Over the six R2R catchments: up to 20% of degraded grasslands (16,322 ha) recovering through reduction in fire; perennial vegetation established with no cultivation in riparian buffer zones - 15 m from major waterways and 5 m from streams. Agrobiodiversity documented and maintained in at least two priority catchments.
Tracking Tool LD 3: Integrated landscape management practices adopted by local communities	Integrated landscape management practiced by local communities across the whole of the six R2R catchments (approx. 240,000 ha), including their participation and inputs into sound catchment management plans and multistakeholder catchment management committees.
Tracking Tool SFM/REDD+. Sustainable Forest Management Objective 1: Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services	Key stress reduction measures are: 17,295 ha mangroves better managed, protected and restored; and 239,334 ha in six catchments under catchment management plans. The amount of CO <sub>2</sub> equivalents from emissions avoided and additional carbon sequestered (direct project lifetime) is 2,580,117 tonnes
Tracking Tool CC 5. Promote conservation and enhancement of carbon stocks through sustainable management of land use, land-use change, and forestry	The number of hectares restored and enhanced is 18,527 ha and the amount of CO <sub>2</sub> equivalents avoided (direct project lifetime) is 1,739,980 tonnes
Tracking Tool IW 3. Capacity Building: Support foundational capacity building, portfolio learning, and targeted research needs for joint, ecosystem-based management of trans-boundary water systems	Mangroves connected to R2R catchments better managed, protected and restored, with a stable (17,295 ha) or increased area and in better condition.
<b>At Outcome Level</b>	
1.1 Improved management effectiveness of existing and new protected areas	Three new terrestrial protected areas (9,200 ha) and six enhanced MPA/LMMAs (IUCN Category VI) (387,200 ha) and one new LMMMA of 9,700 ha. Two additional comprehensive BIORAP assessments Management plans developed and implemented for each PA. Comprehensive valuation of biodiversity conservation and ecosystem services undertaken for Waidina (viz. Sovi basin PA, Wainavadu catchment) and Rewa Delta mangroves and seascape PAs.

Indicator	End-of-Project Target
1.2 Improved financial sustainability for terrestrial and marine protected area systems	Rapid Assessment of Ecosystem Services for new/enhanced marine and terrestrial PAs in Ba, Labasa, Tunulua, Tuva and Vunivia catchments.
2.1 Carbon stocks restored and enhanced in priority catchments	The target for reforestation and forest rehabilitation established during and by the project is: New plantings: 1,305 ha and Forest rehabilitation: 600 ha. A substantial area (up to 20% of grasslands) totaling approx. 16,322 ha in fire-prone catchments (Ba, Labasa, Tuva) to spontaneously regenerate to scrub/ woodland/ forest following education and awareness campaigns to reduce burning and promotion of assisted natural regeneration
2.2 Sustainable forest management achieved through innovative market-based schemes	Updated forestry legislation, with Fiji's key forest assets permanently protected and gazetted and providing an optimal range of services and products for resource owners, the general population, forest industry and Government.
3.1 Integrated catchment management plans covering conservation of biodiversity, forests, land and water formulated and implemented in priority sites	Land use planning and related decisions are well-informed, technically and scientifically sound (including by Government, landowners, private sector). Approved developments increasingly based on land use capability assessments; taking into account interconnectivity of landscape elements and hydrological system, and downstream impacts. National development consultation forums e.g. NEDC convened on regular basis for information and input of all stakeholders. Catchment management plans developed for Ba, Labasa and Tuva River catchments. Catchment management plan developed for the Waidina River and progressively extended to entire Rewa River catchment during the second half of project.
3.2 Strengthened governance for integrated natural resources (land, water, biodiversity, forests) management	Pending establishment of an integrated natural resources policy, as an interim measure strengthen DoE/NEC with new/ additional NBSAP type model to encapsulate land, water, forest and fisheries conservation under its structure. Empowerment to TAB with additional resources. It has mainstreamed environment into its provincial operation e.g. Provincial Conservation officers and YMST
2.4 Improved data and information systems on biodiversity; land, forests, coastal and marine management; climate change and best practices	Key decision makers in Fiji Government, relevant professionals in concerned Departments, NGOs and private sector are progressively better, and well informed by project end, on approaches, needs and benefits for integrated catchment management, biodiversity conservation and development of forest and blue carbon stocks through the R&D activities of the project, and through a well-formulated and implemented KM protocol and communications strategy

## 2.4 RISK ANALYSIS AND KEY ASSUMPTIONS

**Threats to Biodiversity and Ecosystems Services:** The major threats in Fiji are similar to those encountered on many other Pacific Island developing states including

- **Invasive species:** Invasive species constitute the most insidious threat to Fiji's biodiversity – the list of disastrous introductions of alien invasive species is too large to mention, but includes mammals - mongoose (*Herpestes* spp.) and introduced rats (*Rattus* spp.) which have had a devastating impacts on Fiji's native birds; cane toads, tilapia (*Oreochromis* spp.) which have devastated native fish populations; environmentally highly invasive trees and palms which can transform ecosystems, viz. African tulip (*Spathodea campanulata*), ivory cane palm (*Pinanga coronata*), *Maesopsis eminii*, *Cordia alliodora* and *Leucaena leucocephala*; low growing herbs, grasses, shrubs and creepers which colonize and take-over disturbed sites and smoother regeneration of native species, examples include wedelia daisy

(*Sphagneticola trilobata*), mile-a-minute (*Mikania micrantha*), guava (*Psidium guajava*), lantana (*Lantana camara*), bullocks heart (*Annona glabra*), mission grass (*Pennisetum polystachion*), giant thatching grass (*Hyparrhenia rufa*), giant reed (*Arundo donax*) with the latter two being especially damaging due to their increasing the flammability of the communities they invade. Invasive species may sometimes be specific in the damage they cause, e.g. *Erythrina* gall wasp (*Quadrastichus erythrinae*) kills only coral trees (*Erythrina* spp.) but this can have impacts on nectar-feeding birds such as the critically endangered red-cheeked lorikeet or *kulawai*. Several nitrogen-fixing trees including mangium (*Acacia mangium*), Moluccan albizzia (*Falcataria moluccana*) and raintree (*Samanea saman*) are also invasive, but mainly regenerate in disturbed and degraded landscapes and are generally having positive impacts on soil fertility, organic matter, carbon sequestration, biodiversity and acting as green firebreaks.

- **Habitat Destruction and Fragmentation:** up until recently the most severe threat to Fiji's terrestrial biodiversity was from poorly planned and executed logging of native forests. There is a low level insidious threat to native forest communities arising from shifting agriculture coupled with colonization by invasive species, notably African tulip tree, once the land is left to fallow. The current major threat to Fiji's biodiversity comes from mining in two of the priority catchments, viz. NJV copper mine in Waidina and Amex magnetite sand mine in Ba Delta, and also the proposed water supply/hydro power dam on the Sovi River which will inundate the entire lower portions of the basin. Habitat fragmentation is a major medium in the dry and intermediate rainfall zones of both the large islands and constitutes a major medium-long term threat to biodiversity, as it reduces the movement of species and gene flow between isolated patches of forest with greatly increased risks of local population extinction and inbreeding.
- **Degradation of Land and Water Resources and Ecosystem Services:** As discussed elsewhere in this document there has been major land degradation over a long period of time, mainly through clearing, deforestation, and in dry zones frequent burning and the creation of a self-perpetuating cycle of fire-dependent highly flammable grasses. These land use and vegetation changes coupled with cultivation in riparian zones and gravel extraction have resulted in increased incidence of highly destructive flash floods, extensive sedimentation and reduction in stream and river levels and flows especially during the dry season. Fiji's ecosystems, especially coastal and marine ecosystems, still retain vast, for most part unquantified ecosystem service values, but terrestrial systems have been degraded as a result of human and economic activities, notably loss of biodiversity, reduction in carbon stocks, diminished water catchment values, and loss of arable soils/degradation of agro-ecosystems. Mining poses new threats to endangered biodiversity in Ba, Labasa, Waidina and Vunivia.
- **Climate Change Impacts and Tsunamis:** Climate change presents a major threat to humans, the economy and biodiversity alike in Fiji. The effects are discussed elsewhere in this document, but include more extreme/intense rainfall events with associated localised and wide-spread flooding, landslips and increased soil erosion and sedimentation; sea-level rise causing damage to coastal plant communities and infrastructure and ocean acidification which could quite dramatically and unpredictably lead to collapse of ocean food webs and ecosystems. Tsunamis are an ever-present threat to Fiji coastal communities, and greater efforts need to be taken to curb sea-side development including conversion of mangroves.

**Table 12. Project risks assessment and mitigation measures**

<b>Risks</b>	<b>Rating</b>	<b>Risk Mitigating Measures</b>
Pressure on the environment and natural resources due to poverty, increase in population, urbanization and economic development.	Medium	The project aims to continue to bring about transformational change in the mindset of the respective communities through raising awareness on the consequences of unsustainable use of the environmental resources, with actual examples from Fiji, the Pacific and other parts of the world. At the same time, the community will be made aware of best practices (e.g. SLM, INRM, ecotourism) that help ensure economic livelihoods and also protect the environment.
Systematic approach and mechanisms lacking for biodiversity conservation and sustainable land use	Low	The project will introduce Ridge-to-Reef training and implementation for sustainable land use and biodiversity conservation with the relevant sectors of government in cooperation with NGOs and community organizations. Involvement of the traditional landowners and fishing rights holders will be essential as they own 88% of the land (and 90% of forests) and manage inshore fisheries. A more systematic approach to forest and biodiversity conservation will be developed by all stakeholders and incorporated into national policy. Capacity building in INRM will be emphasized with government and NGO staff, and community representatives.
Lack of political support and community buy-in for biodiversity conservation and sustainable land management	Low-Medium	The R2R project fits very well into the Fiji Government's new green growth framework and other relevant sector policies on environment/ NBSAP, forestry, REDD+, rural land use, integrated coastal management and climate change, so high level political support is expected. Likewise the connection of Fijian people to their land and natural resources has a deep spiritual dimension and increasingly rural Fijians are proactive in local conservation and yaubula initiatives. There is a risk of conflict/clash between some departments (notably Lands and Mineral Resources) who promote short-term 'development' at the expense of long term economic progress and environmental protection. Government might review primacy of mining act and return responsibility for mangrove protection and management to Forestry and Fisheries.
<i>ITaukei</i> land ownership will hamper centralized/ Government rationale land use planning	Low	<i>ITaukei</i> land ownership very strongly held and both enshrined in law and custom. Possibility that rationale and reasonable land use policies, plans and restrictions of Government will be ignored by land owners. Also there is concern sometimes expressed that <i>ITaukei</i> land can be leased for development if not being 'used', and/or overridden for mining developments. Discussions with landowners and ITAB during PPG were positive but there is a need for ongoing education, awareness and extension programs with landowners and farmers.
Lack of capacity in government staff, NGOs, community groups and farmers to undertake project activities.	Low	This is a risk given capacity constraints in Environment Department, and heavy reliance on consultants, and that outside of forestry and agriculture (LUP), there is limited experience in Government with integrated planning for natural resources. NGOs have considerable experience in implementing projects with communities, but sometimes lack capacity and resources to follow-up leading to communities becoming disillusioned. R2R project has capacity building to address these issues during the life of the project and beyond.
Lack of capacity for legal enforcement of environmental policies/ legislation and community based environmental tabu	Medium	Community members trained to monitor changes by recognizing indicators of changes in environment. Use of community wardens to monitor and enforce at community based conservation/project sites, especially LMMAs
Lack of collaboration between and amongst GoF departments and NGOs	Low	Project design will include participation of Government departments and NGOs. Planning and implementation phases working through existing formal and informal collaborative networks amongst government and NGOs.
Climate change, fire and tsunami threats to terrestrial and marine resources.	Medium	Climate change poses major long-term risks to all resources in Fiji with potentially stronger cyclones, changes in rainfall, sea level rise and coral bleaching plus ocean acidification. A key objective of the R2R project is to build resilience in the islands, the forests, agricultural production systems, corals reefs and people to deal with such threats in the longer term. El-Nino connected droughts pose a risk, both from desiccation of newly planted trees and through contributing to greatly increased wildfire hazard. In dry zones, tree planting should be undertaken early in the wet

		season and after the soil has become moistened (usually late November/early December). The project will undertake major fire education and awareness campaigns in the priority catchments and at national level support development of a forest fire policy and legislation.
Political conflicts could delay or disrupt project activities.	Low	Fiji has had a stable Government since 2006, and is proceeding along a smooth path to democracy with elections planned from September 2014.

## 2.5 INCREMENTAL REASONING AND EXPECTED GLOBAL, NATIONAL AND LOCAL BENEFITS

The Fiji R2R project will build on the recent efforts of the Fiji Government to adopt a whole integrated, holistic and environmentally-sympathetic approach through the Green Growth Framework. The project will also build on the lessons and experiences generated during the recently concluded Nadi River Basin IWRM Demonstration project in terms of community engagement; the GEF-funded Sustainable Land Management project, of the Department of Agriculture LUP section, which included a baseline biophysical data survey to assess the present land use, soils, land use capability, tenure system in the catchment and evaluated indicators of land degradation in the catchment; the EBM approaches of the Wildlife Conservation Society in Kubulau, Vanua Levu, especially participatory redesign of MPAs/LMMA; the REDD+ readiness and forest carbon assessment work of Department of Forestry, GIZ, SPC, IUCN and other stakeholders; the reforestation experiences with native tree species by Conservation International, Department of Forestry and Pacific Reforestation (Fiji) Ltd; the work of WWF to build community based capacities to monitor and enforce compliance in tabu areas in LMMAs; the work of IUCN and MACBIO for valuation of ecosystems services; development of sustainable funding models for PAs notably Sovi Basin Trust Fund by CI, USP, NTF and a number of other initiatives indicated elsewhere in this project document.

In summary the main project benefits at different levels are:

Global:

1. Protection of biodiversity, both terrestrial and marine, including threatened ecosystems, endangered species; agrobiodiversity and the biodiversity/genetic diversity that is needed for the resilience, productivity and on-going adaptation and provision of ecosystem services in wild-harvested natural production systems (multiple use forests and managed fisheries). This includes three new terrestrial protected areas (totaling 9,200 ha) and seven MPAs/LMMA with strengthened conservation status (totaling approx. 390,000 ha).
2. Climate change mitigation - reduced carbon emissions and increased carbon sequestration through protection of forests, including mangroves, and reforestation (with direct and indirect lifetime of 2.58 million Tonnes of CO<sub>2</sub> equivalents and 2.75 million Tonnes of CO<sub>2</sub> equivalents, respectively).
3. Improved water quality entering into the Pacific Ocean from Fiji's river systems - as a consequence of 239,334 ha in six catchments under catchment management plans and improved land and water management.
4. Increase in forage fishes, fish larvae, zooplankton and phytoplankton entering into ocean ecosystems/pelagic fish food chains from Fiji's coastal waters - as a consequence of 17,295 ha mangroves better managed, protected and restored.
5. Increased production of sustainably produced food, lessening need for food imports into Fiji and increasing Fiji's ability to supply food to an increasingly over-populated and malnourished world and thereby reducing pressures on agro-ecosystems in other parts of

the globe - as a consequence of more sustainable and improved food production (agricultural, pastoral and agroforestry) systems in the six catchments.

National: (and noting some benefits overlap those at global level)

1. Improved legislation on integrated natural resources management (catchments, land, water, forests, fisheries, mangroves, coral reefs)
2. Improved catchment management with economic benefits especially reduced flooding of croplands, vulnerable settlements, villages and commercial centres, and need for expensive, periodic dredging operations.
3. Villagers have more livelihood options reducing urban drift and associated social, economic and infrastructure problems.
4. Sustainable production of economically important species such as yasi/sandalwood, ivi/Polynesian chestnut, numerous fin fish including parrot fish and groupers, *qari*/mangrove crabs, *ura*/prawns and *kai*/freshwater mussels etc.
5. Increase in national and Government capacity for integrated natural resources management
6. R2R catchments and project activities generate important information and R&D which can be useful in other parts of Fiji.

Local: (and noting some benefits overlap those at national level)

1. Improved local environment – providing valued goods and services such as potable water and wild-harvested foods and plants used *wai ni mati*/traditional medicines
2. Increased and diversified livelihood and income-generating opportunities, including from eco-tourism; appropriate local value adding.
3. Increased local ecosystem and community resilience to climate change – especially reduced risk of flooding in vulnerable areas
4. Greater sustainability of local food production/agro-ecosystems – through better soil conservation farming practices and agroforestry.
5. Increased self-sufficiency and improved health, resulting in less need for expensive and often unaffordable travel to markets and medical centres.
6. Improved social cohesion through facilitated cooperation within and among communities in different parts of the project catchments, including a reduction in urban drift and associated loss of economically important members.

Implementation of this project will be co-financed (USD 30,242,012) by UNDP in-kind (USD 450,000) as well as from relevant projects that are being undertaken by the Government of Fiji (USD26,713,803 from seven departments in six ministries), the private sector (USD 1,210,000 from Fiji Pine Ltd) with additional co-financing (USD 1,868,209) coming from NGOS (WWF, NFMV, Wildlife Conservation Society) and the USP Institute of Applied Science.

## 2.6 PROJECT CONSISTENCY WITH NATIONAL PRIORITIES OR PLANS

The R2R project is fully consistent with Fiji's national priorities and plans as described in:

**Fiji's Strategic Development Plans (Source: [www.planning.gov.fj](http://www.planning.gov.fj))**

***National Strategic Development Plan - 2007 to 2011***

The NSDP has Environmental Sustainability (MDG7) as one of its key guiding principles with the goal to sustainable use and development of Fiji's natural resources and ecological processes. Two strategies for this goal are especially pertinent to the R2R project:

- Promote awareness of environmental management at all levels and mobilize communities to manage their own environment as a priority over outside intervention, and

- Continue the implementation of the Biodiversity Strategy and Action Plan and Endangered and Protected Species Act.

Other important goals and strategies in the NSDP to which the R2R project will contribute include:

- Effective and coordinated land management to support economic development including strategies to strengthen resource management and awareness on appropriate land use and watershed management practices from the community level, and strengthen coordination between agencies involved in land development to ensure land is put to its most productive use.
- Development of stronger, more competitive natural resource sectors (agriculture especially sugar, fisheries and forestry), with a strategy to build the capacity of rural communities to diversify agriculture to higher value crops and commercial agriculture to improve on and off farm livelihoods and opportunities for processing and value adding.
- Sustainable management and development of forest resources including strategies to increase involvement of landowners in community based forestry projects, and review the status of forest reserves with the aim of safeguarding biodiversity of areas under threat.
- Pursuing growth through sustainable marine resource management including a strategy to undertake community awareness on management of inshore fisheries and coral reef management
- Reducing vulnerability to disasters and risks and promoting sustainable development, including a strategy of effective risk reduction projects identified and implemented (within R2R this applies to flooding and crop production systems).
- Increasing access to continual safe drinking water and appropriate sanitary waste disposal systems.

### Green Growth Framework (GGF)

Current development plans and strategies are governed by policies adopted under the 2009 Peoples Charter for Change, Peace and Progress, the 2010-2014 Roadmap for Democracy and Sustainable Socio-Economic Development, the 2013 Constitution/Bill of Rights and other national development documents. All of these instruments advocated sustainable development as a national requirement. However economic development has disturbed the social environment and damaged and destroyed the natural environment. Global shocks from financial, food and fuel crisis have also had their adverse impacts. A further challenge is the adverse impact of climate change. In March 2014 Fiji became the 21st country member to join the Global Green Growth Institute (GGGI). Fiji is now in the process of developing its green growth strategy and policy to better ensure environmental and economic sustainability. This will require establishing sound legislation, regulation and a standardization framework, with technical support from the GGGI. A major focus of the GG strategy is to develop a low carbon initiatives leading to sustainable, climate resilient and low-carbon economic development.

The pillars of GGF have been identified to stimulate the development and strengthening of an integrated and enabling environment for sustainable development. This contrasts with the traditional sector focus approach and provides an opportunity for innovative thinking and alternative business models and approaches. This comes amidst changing international development strategy from human/social focus under MDG to Sustainable Development Goals. The three pillars of GGF are **Environment Pillar** (Building Resilience to Climate Change and Disaster; Waste Management; Sustainable Island and Ocean Resources), **Social Pillar** (Inclusive Social Development, Food Security, Freshwater Resources and Sanitation Management), **Economic Pillar** (Energy Security,



Sustainable Transportation; Technology Innovation and Development; Greening Tourism and Manufacturing Industries).

The GGF Pillars have similarities and broad overlap R2R strategies e.g. R2R major focus on terrestrial and marine conservation is similar to the GGF environment pillar on sustainable island and ocean resources. The prescribed R2R catchment-wide integrated management plans to emphasize interconnectivities of the natural resources and 3.2.1 on the need for INRM to strengthen the national sectoral policies in the following sectors - Lands, water, biodiversity, agriculture, fisheries, *iTaukei*, Tourism are also in the GGF Pillars. Similarly climate change resilience is also a shared priority. The Inclusive Social Development Pillar under GGF is also integral to the R2R focus on community and multi-stakeholder involvement and the bottoms up approach with project identification. Generally, the R2R livelihood programmes, terrestrial and marine protection and strengthening agriculture, fisheries and forests sectors to rehabilitate catchment sites or to improve agriculture efficiency in the catchments are opportunities for R2R to ignite entry points into the GGF Pillars identified above. The R2R project will fit into GGF for example by promoting use of renewable energy sources, including development of sustainable fuelwood supplies (through climate-resilient agroforestry and multipurpose tree plantations with native species in Components 2 and 3). Given similarities care needs to be taken, especially in the early project implementation phase, to avoid duplication and maximize synergies. It will also be necessary to establish priorities and project timelines that will not be compromised as the same implementing agencies may be involved.

### **National Biodiversity Strategy and Action Plan (NBSAP)**

Fiji's NBSAP was completed in October 1999, but due to political events it was only endorsed by Cabinet in 2003, and subsequently updated in 2006/7. The current 2007 version of the NBSAP does not include a number of elements of the CBD Strategic Plan's Aichi Targets and newer COP guidance. The new CBD Strategic Plan, adopted at CoP-10 in 2010 in Nagoya, addresses the need for updating NBSAPs, stating in Target 17 that "By 2015, each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan." The strategic plan also covers a range of issues that will need to be incorporated into the revised NBSAPs. Accordingly Fiji's NBSAP is currently being reviewed with consultations initiated. This review is being undertaken with the support of the UNDP/GEF project "National Biodiversity Planning to Support the implementation of the CBD 2011-2020 Strategic Plan in Fiji". The R2R project will be a major contribution towards Fiji addressing its NBSAP objectives, in all six focal areas, viz. Community Support – Awareness, Involvement and Ownership; Improving Our Knowledge; Developing Protected Areas; Species Conservation; Control of Invasive Species; and Capacity Building and Strengthening.

### **Protected Areas Strategy**

The Fiji National Protected Area Committee (PAC) was established in 2008 under section 8(2) of Fiji's Environment Management Act 2005 as a technical advisory arm to the National Environmental Council (NEC). The PAC is chaired by the National Trust of Fiji and includes representatives from: Department of Environment; Ministry of Primary Industries (Fisheries and Forests); Department of Heritage, Culture and Arts; TLTB, NGOs, academia and private sector. The main goal of the PAC is to advance Fiji's commitments under the Convention on Biological Diversity (CBD), as ratified by the Fiji Government in 2001. The specific functions of the PAC are to: (1) advise the NEC on protected area policies and priorities; (2) support the establishment of an adequate and representative national protected area system; (3) facilitate consensus on national priority areas for conservation; (4) identify gaps in the existing protected area system; (5) identify actions for the establishment and effective management of protected areas; (6) source options for sustainable financing of protected area management; and (7) facilitate the exchange of information and data among stakeholders. The PAC was funded by an early action GEF/UNDP grant to carry out actions under the Programme of Work on Protected Areas (PoWPA) through the CBD (from Jupiter *et al.* 2011). The identified priority

terrestrial areas for protection in Fiji are indicated in Figure 1. The R2R project will work in the on-going and new protection of two of these priority terrestrial PAs, viz. Sovi Basin PA and Tunuloa PA. Furthermore the R2R project will seek to protect and enhance PAs of endangered and vulnerable ecosystems in the Upper Tuva and Vunivia catchments, which appear to have been missed by the PAC. This further underscores the point recently made by Keppel (2014) concerning the importance of utilizing expert knowledge in conservation planning.

### **REDD+ strategy** (updated from Trenorden 2013)

REDD stands for Reduced Emissions from Deforestation and forest Degradation while the plus (+) includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks. Fiji has now completed Phase 1 of its REDD+ readiness which includes the development of policy and institutional frameworks for the implementation of REDD+. The key policy developed to date is the Fiji REDD+ Policy, formally adopted by Cabinet in January 2011.

Fiji's REDD+ Policy aims to provide a framework to facilitate access to all available financing instruments for REDD+ from both market and fund-based sources. Fiji is therefore taking a 'hybrid' approach to REDD+ financing which will enable both national and sub-national or project-scale activities to be adopted. The adoption of a 'hybrid' scale approach means that Fiji is likely to engage in carbon markets:

- National scale through participation in the international UNFCCC REDD+ mechanism, if it is decided to adopt a market-based approach to REDD+ financing, and
- Local scale through participation in voluntary carbon markets.
- Fiji's REDD-Plus Policy states that the following activities are eligible for inclusion under Fiji's national REDD+ programme:
  - Reducing emissions from deforestation via forest protection and improved forest management
  - Reducing emissions from degradation via forest protection and improved forest management
  - Afforestation/reforestation
  - Forest/energy sector linkages (biomass electricity generation)
  - Forest/agriculture linkages (biomass residue/biochar)

Fiji has established a REDD+ National Steering Committee whose overarching function is to 'coordinate and facilitate the implementation of the Fiji REDD+ programme' in a transparent and effective multi-stakeholder governance process. The REDD+ Steering Committee is responsible for developing Fiji's REDD+ Strategy and preparing a set of National REDD+ Guidelines on governance; activity; financing; MRV; safeguards; legal and regulatory; distribution; education, training and research; and international engagement. The Fiji REDD+ Steering Committee reports to the Forestry Board, and also provides progress reports to the National Environment Council. It should be noted that while the architecture for the UNFCCC REDD+ mechanism is evolving and not yet fully functional, funds are already flowing for individual forest carbon projects through both compliance and voluntary markets. The R2R Project will make a major contribution to Fiji's REDD+ programs (and increased forest carbon stock) in all six catchments, through components 1, 2 and 3, and nationally through its awareness campaigns, and development of agroforestry and reforestation technologies using native tree species.

### **Climate change**

Fiji has developed a comprehensive National Climate Change Policy (Anon/GoF 2012). This policy assist's Fiji in international commitments to the United Nations Framework Convention on Climate Change (UNFCCC; ratified by Fiji in 1997), as well as the United Nations Convention to Combat Desertification (UNCCD; ratified by Fiji in 1998) and CBD. The R2R project substantially contributes

to Fiji's climate change policy objectives. It does this through both mitigation measures focused on maintaining and increasing forest carbon stocks including in mangroves and through holistic adaptation responses. Adaptation responses include improved land use planning and management; diversified and more resilient food production systems; mitigating damage from extreme climatic events notably intense rainfall episodes and associated flooding; and through reducing other stresses on coral reef and marine ecosystems.

### **Integrated Coastal Management**

Fiji has developed a national framework for integrated coastal management (Dumaru 2011) which is part of its response to the UNFCCC requiring parties to develop plans for coastal zone management. The R2R project will contribute and build on Fiji's plans for integrated coastal management by explicitly developing mangrove management plans and extending holistic natural resources management to include the entire water catchment, i.e. and way beyond 30 m from the shoreline, for the six priority catchments. Further it is planned that the integrated coastal management plan be expanded to an integrated catchment and coastal management plan, i.e. ridge-to-reef.

### **Land degradation**

The United Nations Convention to Combat Desertification provides a framework for the sustainable development and management of land resources; and founded on the principle that the solutions for the problems of land degradation and drought should emanate from affected populations. One of Fiji's responses has been to develop a National action plan to combat desertification / land degradation and to mitigate against drought (Anon 2007). The R2R project is highly supportive of Fiji's National action plan and the UNCCD, through both process – central role of affected communities in planning integrated catchment wide responses to land degradation – and through its activities, especially those to be undertaken in Component 3 for three highly degraded catchments (viz. Ba, Labasa and Tuva).

The regional Pacific Islands R2R IWRM project includes a component on mainstreaming of Ridge to Reef ICM/IWRM approaches into national development planning. This will include coastal policy, legal and institutional reforms for ICM, including options for harmonization of sectoral policies and legislation and national and local level governance frameworks in Fiji.

### **Water and Sanitation**

In April 2012, Fiji launched its Rural Water and Sanitation Policy to promote safe drinking water and proper sanitation in rural areas, while a National Water Sanitation Policy has been drafted. Several activities of the Fiji R2R project will, both directly and indirectly, contribute to implementation of these policies in the project catchments, through proper planning, as well land use and village improvements.

## **2.7 COUNTRY OWNERSHIP: COUNTRY ELIGIBILITY AND COUNTRY DRIVENNESS**

Fiji is eligible to receive grants from the GEF in the various focal areas covered by this project as it has ratified the following Conventions: UN C-B-D in (date – month/year); UN F-C-C-C in (date) and UN C-C-D in (date). The project is also consistent with national policies as indicated in the preceding section.

In April 2012, the Ministry of the Local Government, Urban Development, Housing and Environment formally requested the UNDP Fiji Multi-Country Office (MCO) to assist Fiji formulate its proposal under the GEF STAR 5 allocations. UNDP through its MCO and regional technical adviser supported government facilitate national consultations with stakeholders that helped identify national priorities. Government Departments, NGOs, regional institutions and statutory bodies were involved in discussions. In addition, field visits were conducted to project sites in Viti Levu and Vanua Levu. National objectives were then aligned with strategies of the GEF, in the compilation of a Project Identification Form (PIF). The development of the PIF involved a substantial collective effort of relevant Government agencies (including especially from the Departments of Environment, Agriculture, Forestry and Fisheries) with inputs from technical experts in the University of the South Pacific, Secretariat of the Pacific Community, GIZ and others. Upon endorsement by government through the GEF National Operation Focal Point, the PIF was submitted to the GEF Council. On 26th April 2013, the PIF was approved. This included resulting in the approval of a Project Preparatory Grant (PPG).

A highly participatory approach was used for the design this project through involving key stakeholders in the process at all stages. The detailed project design during the PPG involved thematic/component specific meetings with a broad range of stakeholders, including co-financing partners, from across Government Departments, NGOs and CBOs, research and training institutes, regional and international organizations during the period from November 2013-January 2014. The PPG inception meeting was held in Suva over two days (5-6<sup>th</sup> February, 2014) involving 65 participants from Government, NGOs, CSOs and private sector. The six catchments were visited during the period from 11th March to 9th May, 2014. The catchment site visits were made following presentations to and detailed discussions with the respective Divisional Commissioners and their Heads of Departments. The approach followed was to visit key locations within each catchment and familiarize the R2R team with the catchment, its environment and land use, and major issues. The visitations team comprised the R2R PPG consultant team, representatives of UNDP, DoE, DoA, DoF, DoFish, TAB and iTaukei Conservation Officers. The visiting team variously comprised the respective Roko Tui, Assistant Roko Tui, Divisional Planning Officers and District Officers. Community and village meetings followed Fijian protocol involving traditional greeting and *sevusevu* followed by an outline of the R2R project, and then by a *talanoa* session involving detailed discussions of catchment matters, environmental issues and challenges, and livelihood matters. Meetings were held with 23 villages and settlements in the six catchments as well as individuals and private sector. Involvement of the communities in the planning process to its implementation will give the people sense of ownership and the incentive to drive the project in the direction they feel will be more beneficial to them to improve their standard of living in the medium and long term.

## **2.8 SUSTAINABILITY, REPLICABILITY AND POTENTIAL FOR SCALING UP**

Sustainability and replicability are inherent to the project design. The approach has been to, wherever possible, integrate with and utilize existing Government structures, processes and personnel. An exception is the development of new multistakeholder Catchment Management Committees: these will be partly modelled on the Nadi Basin Catchment Committee (NBCC), the governance structure established under the IWRM project supported by UNDP/GEF and implemented by SPC, and build on the experiences and lesson learnt. The NBCC benefits from being a multisectoral body at management level, which represents the strength, capacity, policies and enforcement powers of the departments, statutory bodies and organizations involved with membership (about 25 members) as well as drawing in and on community representatives, academia, NGOs and regional organizations. One lesson was that whilst it was envisaged that, post project, the NBCC would continue to function as the body authorised to plan and co-ordinate the monitoring of IWRM, there was inadequate Government (or other) resources allocated to enable

this to happen. The CMCs will only be developed for those catchments, like Nadi River, where there are compelling reasons for catchment-wide approach to address major economic and environmental issues. In the case of Fiji, and especially in a climate-changing environment of increased flash flooding, the need is most pressing for those catchments in which downstream (and sometimes localized upstream) flooding is occurring more frequently and with greater consequences due to inappropriate development within the flood plains. This includes the R2R catchments of Ba, Labasa, Tuva and Rewa (Waidina and delta). The approaches developed during the R2R project can also be extended to other catchments in Viti Levu where flooding is a serious issue such as Navua River (Navua town and surrounds), Penang River (Rakiraki town), Sigatoka River (town and valley) and smaller systems such as the Sabeto River (near Nadi).

The reforestation, agroforestry and sustainable farming technologies developed during the project will be applicable in similar environments and given the soils/climates covered would apply to almost the whole of Viti Levu and Vanua Levu. For example the work on vegetation of degraded catchments and talasiga lands will be appropriate in Ra Province (Viti Levu) and Bua Province (Vanua Levu). Likewise the community participatory work, especially in LMMA and building on the work of the Fisheries Department, WCS, WFF and others, will be widely applicable throughout Fiji and indeed other parts of Pacific Islands and the LMMA network in Asia-Pacific.

## **2.9 PUBLIC AWARENESS, COMMUNICATIONS, AND MAINSTREAMING STRATEGY**

One of the key areas for successful implementation of a project is to have an appropriate and effective public awareness, communication and mainstreaming strategy that will deliver the message to the people in order to achieve the project objectives. The will be undertaken through the knowledge management component and include hiring of a communications consultant early in the project. The modes of communication and type of public awareness will depend on the target audience, but build on the highly successful, remarkably innovative and novel, and well-executed approaches developed by the Nadi River Basin IWRM project. There will be a need for ongoing awareness throughout the project duration, in order to influence behavioural change and gain support from all target groups for the implementation of the project and the continuous management of the catchments beyond the R2R project life.

For effective land use planning and management of water catchments in Fiji, there will be a need to mainstream environmental issues that contribute to conservation and sustainable development into the national strategic development plans, especially the new Fiji Green Growth Framework. The lessons and outputs of the Fiji R2R project will also be vital for informing future national planning and policies, including national development and sector plans for integrated land, water and catchment management; sustainable forest management and REDD+; wildfire control and management; sustainable fisheries and National Protected Areas Strategy and biodiversity conservation. It is important that interim lessons from Fiji R2R are taken into account, to improve subsequent project implementation, and equally importantly for mainstreaming into Fiji's policies, laws and regulations.

## **2.10 ENVIRONMENTAL AND SOCIAL SAFEGUARDS**

Environmental and social safeguards and associated policies and procedures are a cornerstone of technical and financial support that the Fiji R2R project will strengthen to achieve sustainable poverty reduction, enhance the livelihoods of communities and protect their environment. The objective of these safeguards and associated policies and procedures is to prevent and mitigate

undue harm to people and their environment and strive to develop benefits in the development process. More specifically, safeguard policies and procedures are designed to avoid, mitigate, or minimize adverse environmental and social impacts of projects and strategies, and to implement projects and strategies that produce positive outcomes for people and the environment.

Under the mandate of the MLGUDH&E, the following key legislation and strategies will ensure environmental safeguards: Environment Management Act 2005 (EMA); National Biodiversity Strategy and Action Plan 2010 (NBSAP), the 2011 Integrated Coastal Management Framework, the 2012 National Climate Change Policy. The project will have major local environmental benefits, with a key component of the project being biodiversity conservation – this will include replanting and assisted natural regeneration only using indigenous or native trees and shrubs, and the control/removal of invasive alien weed trees.

In Fiji social safeguards are provided through under the 2009 Peoples Charter for Change, Peace and Progress, the 2010-2014 Roadmap for Democracy and Sustainable Socio-Economic Development, the 2013 Constitution/Bill of Rights. Additional social safeguards will be promoted in the R2R project through actively involve communities, women and youth and their representative associations, such as SVT in design and implementation of project activities. Land to be set aside or leased for PAs and/or REDD+ will follow the UN REDD Guidelines on free, prior informed consent (FPIC).

## **PART III:PROJECT IMPLEMENTATION ARRANGEMENTS**

### **3.1 IMPLEMENTATION AND INSTITUTIONAL FRAMEWORK**

The Project will be implemented through UNDP's National Implementation Modality (NIM), with the Ministry of Local Government, Housing and Environment, Government of Fiji serving as the designated national executing agency ("Implementing Partner") of the project. MLGHE will have the technical and administrative responsibility for applying inputs in order to reach the expected Outcomes/Outputs as defined in this project document. MLGHE, together with the R2R Project Management Unit is responsible for the timely delivery of project inputs and outputs, allocating resources in an effective and efficient manner, and in this context, for the coordination of all other responsible parties, including other line ministries, local government authorities, NGOs, contractors and others. The UNDP Fiji MCO will provide support for agreed procurement and recruitment of consultants to facilitate and streamline such processes.

The Project Management Structure is shown in Figure 6.

#### ***R2R Project Steering Committee (PSC)***

The PSC is responsible for making overarching management decisions for the project, based principally on information provided by the R2R Project Management Unit (RPMU) and its four thematic working groups. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems with external bodies. In addition, it approves the appointment and responsibilities of the RPMU and any delegation of its project assurance responsibilities to the RPMU. The Executing Agency is the individual (Director, DoE) representing project ownership and acts as the PSC chair. The senior supplier (UNDP representative on the PSC) represents the interests of GEF, which is providing major funding to the project. The senior supplier's primary function on the PSC is to provide guidance regarding the technical feasibility of the project. The senior beneficiary (MLGHE) represents the interests of those who will ultimately benefit from the project, viz. the communities living in the target catchments as well as the global community. The senior beneficiary's primary function within the PSC is to ensure the realization of project results from the perspective of project beneficiaries.

The PSC is expected to meet annually and its deliberations will consider recommendations put forward by the RPMU. In the event that PSC members are not able to be present in-person at annual meetings (or ad hoc exceptional meetings), then other alternatives could be considered such as teleconferences and Skype. The PSC will be comprised of nine persons - one person from each of the key Ministries involved in implementation and/or co-financing viz. MLGHE (PS), Ministry of Agriculture (PS), Ministry of Fisheries and Forests (PS), Ministry of Provincial Development and National Disaster Management (PS), Ministry of iTaukei Affairs, Ministry of Infrastructure and Transport (PS), Ministry of Strategic Planning, National Development and Statistics (PS) together with the DoE (Director and NPD) and the UNDP Fiji MCO (Environment Team Leader) and a co-financing Environmental NGO. The PSC will meet at the start of the project and annually thereafter to consider and review progress and annual work plans. In order to ensure UNDP's ultimate accountability for the project results, PSC decisions will be made in accordance to standards that shall ensure management for development results, best value for money, fairness, integrity, transparency and effective international competition. In the unusual event that consensus cannot be reached within the PSC, the final decision shall rest with the UNDP representative on the PSC.

#### ***R2R Project Management Unit and thematic working groups***

The RPMU supports the PSC by through its ongoing project planning, management and monitoring functions. The RPMU is responsible for advising the PSC on key management decisions of the project. It plays critical roles in assuring the technical quality, financial transparency and overall development impact of the project, and will be established as soon as this project is approved and meet on a regular basis (quarterly). Through the RPMU the PSC will receive inputs from four thematic working groups which parallel the four project components (biodiversity conservation, sustainable forest management/REDD+, integrated coastal management and knowledge management). The first three thematic groups will comprise existing committees of Fiji's NBSAP, while the KM group will be a new committed formed to address KM in current and future projects (notably GEF & UNDP) and meet on an ad hoc basis as needs arise. The ToR for the KM committee are given in Annex 7.

MLGHE will hire the R2R Project Manager (R2R PM) who will be responsible for ensuring the overall smooth implementation of the project in line with planned project objectives and outcomes as identified in this project document. The R2R PM has the authority to run the project on a day-to-day basis on behalf of the Implementing Partner within the constraints laid down by the PSC. The R2R RPM's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost. The RPM will provide strategic support as needed to the project, particularly to ensure strong engagement from key national and local stakeholders and ensure that members of National Environment Council (NEC), comprised of CEOs of line Ministries, are fully informed of the high-level policy objectives of the project. The RPM will be a dedicated professional designated for the duration of the project and report to the NPD and PSC. The RPM will be supported by a Project Support (M&E) Officer (and 2-OIC within PMU) as well as a Finance Officer, Procurement Officer and an Administration Assistant, forming a five-member Project Management Unit (PMU). The PMU will be physically located within the DoE (Suva) – it will execute project activities, including day-to-day operations of the project, and the overall operational and financial management, monitoring and reporting.

### ***R2R Project support personnel***

Four professionals will be recruited to support the activities of the project. In the Divisions/Province, the project will be supported by two new Catchments coordinators – one for Western Viti Levu (based in Commissioner Western office in Lautoka), and with prime oversight responsibility for R2R project work in Ba and Tuva catchments, and one for the three Vanua Levu catchments (based in Commissioner Northern Office). The RPM will have prime oversight responsibility for R2R project work in the Rewa catchment, including Waidina sub-catchment and Rewa Delta, and in development of a greater Rewa CMC over the life of the project. Also supporting the project will be a R2R Forestry Officer (based in DoF, Colo-i-Suva) fully dedicated to project work. Short-duration consultants hired in the course of project implementation for specific tasks.

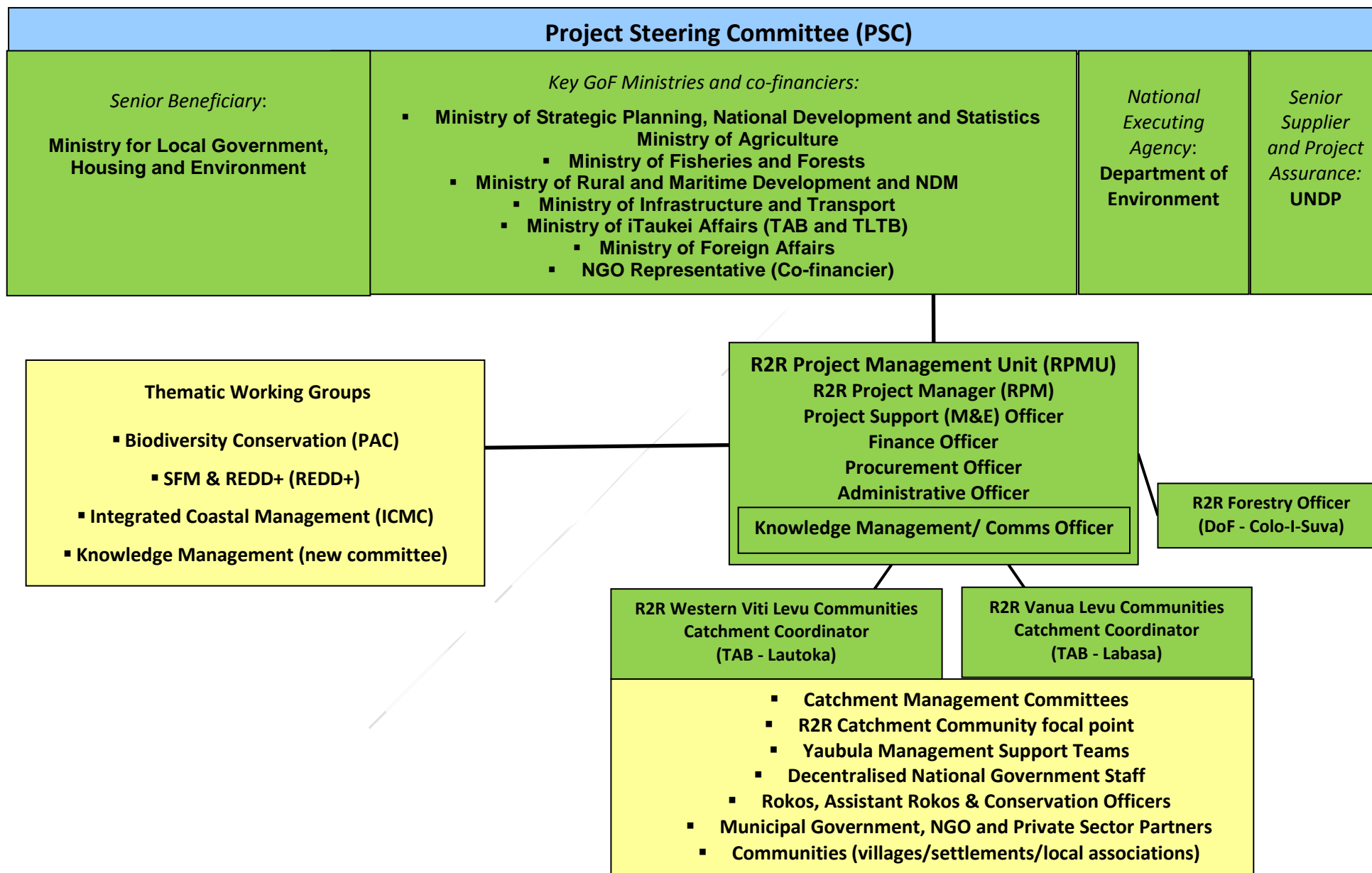
### ***UNDP***

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, subcontracting project consultancy services and procuring equipment at the request of the MLGHE. On the technical side, the PSC 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



support services. Technical oversight will be provided by the Regional Technical Advisor for Coastal, Marine and Island Ecosystems from UNDP APRC.

**Figure 6. GEF 5 STAR FIJI Ridge to Reef Project Organization**



## 3.2 STAKEHOLDER INVOLVEMENT

Key stakeholders and their involvement in the Project are listed in Table 13 and discussed below. A more detailed compilation of project stakeholders is given in Annex 4 with a stakeholder mapping and analysis provided in Section 3.3. The key groups of project stakeholders are:

- a) **Relevant government agencies:** the Department of Environment within the Ministry of Local Government, Housing & Environment which functions as the GEF Focal Point and hosts and chairs the National Environment Council, as well as representation from the planning and implementing sectoral departments, specifically Agriculture, Fisheries, Forestry; Foreign Affairs/climate change; Rural and Maritime Development and Natural Disaster Management; *iTaukei* Affairs; Tourism; Works, Public Transport and Utilities; and NGOs. These agencies were all involved in developing the project, along with the Ministry of Strategic Planning, National Development and Statistics. At Divisional and Provincial levels the Divisional Commissioners, Provincial Councils, Tui Rokos, Rokos, DAs and DPO and IT Provincial Conservation Officers will provide essential local administrative links and into the communities – in Fiji such relationships are especially critical to ensure that proper consultative processes are followed with the appropriate communities, leaders and local associations.
- b) **Local people, their leaders and associations:** this includes a diverse group of stakeholders, but foremost amount these is meeting with the *Turaga iTaukei*, *Turaga ni koros* and heads of respective *mataqalis* and *iqoliqolis* to discuss and seek permission for any planned project activities. Other vital local groups for the R2R project/CMCs to engage with and work through include village women's groups (affiliated with SVT), village youth groups, farmer association, land care groups and schools, both primary and secondary.
- c) **Non-Government Organizations:** A number of conservation NGOs, CSOs and networks including WWF, WCS and NFMV/Birdlife International, IUCN (& MACBIO project), CI, CORAL, SeaWeb and NTF will have key roles in the project, notably in Component 1, through co-financing, and as implementing, collaborating and R& D partners. CSOs and Networks such as FLMMA, NCWF, SVT, WIF-Fiji and PCDF will have vital roles ensure that the voices of communities, especially women, are heard in project activity development and in participation to gain benefits from the project. Several of the NGOs and networks will be involved in working with communities on aspects of this project, including with education, extension and awareness through Live and Learn and POETCom.
- d) **International and regional organizations:** UNDP, the GEF Implementing Agency, is strengthening regional governance of coastal and integrated natural resources management through its support for Pacific countries. The UNDP role is to ensure that the GEF Secretariat is continually informed of activities and progress through M&E via an Annual Monitoring Report. The UNDP coordinates with UNEP and FAO for the implementation of the Ridge-to-Reef and IWRM projects in all 14 Pacific countries. FAO will be consulted on fisheries aspects, especially in the implementation of alternative fishing industries to reduce pressure on coastal fisheries and also fisheries where it has the critical key MRV role in REDD+. UNDP will involve key NGOs and CROP agencies (SPC including SOPAC, LRD and FAME; SPREP and USP) during the negotiation phase and then later during implementation in some aspects of the design of the project and in implementing specific themes.
- f) **The business community/corporate sector:** where appropriate the PMU and respective Catchment Management Committees will request the assistance of the private sector in conducting development/livelihoods and flood mitigation projects (including through CSU) and also in those aspects where there are mutually beneficial dimensions, such as in flood mitigation measures and in maintenance of natural values of MPAs/seascapes, or those requiring special expertise, such as in appropriate reforestation technologies or certification.

g) **Other major donors:** major donors, including EU, GIZ, ACIAR (for R&D), Governments of Australia, China, Japan, NZ and USA, involved in supporting and implementing parallel projects of relevance to R2R in Fiji will be consulted regularly to maximize synergies.

A summary of the key R2R Stakeholders and their involvement in the project, derived from Annex 4, is given below in Table 13:

**Table 13. Summary of R2R Stakeholders and their involvement in the project**

Stakeholders	Involvement in the Project
<b>A. Government Agencies</b>	
Ministry of Local Government, Housing and Environment esp. Depart. of Environment	Designated national executing agency ("Implementing Partner") of the project and also a major R2R co-financier and PSC member. The DoE will house the R2R Project Management Unit in Suva, host the R2R project website, and provide secretariat for the PSC.
Ministry of Agriculture (including Department of Agriculture)	Critical extension roles with farmers in the respective project catchments, and through its Land Use Planning Section to ensure better soil conservation farming practices, notably on sloping land and to develop its work with Land Care Groups.
Ministry of Fisheries and Forests (including Departments of Fisheries and Forestry)	The R2R Forestry Officer will be based within the DoF and act as the focal point for implementation and monitoring of component 2 activities. DoF is a vital partner for progressing and implementing Fiji's REDD+ strategy and readiness. The DoF Extension Division will be a major provider of technical information and nursery stock of native tree species to the project, including through its nurseries on Viti Levu and Vanua Levu. The DoFish is critical partner for R2R project work on MPAs and LMMAs, aquaculture and mariculture developments. R2R will partner with DoFish to support its Reef Enrichment Initiative. Both DoF and DoFish are major R2R co-financiers, and the MFF will be represented by its PS on the R2R PSC.
Ministry of Infrastructure and Transport	R2R project will work with MIT, WAF and FEA to ensure adoption and implementation of the most economic and environmentally acceptable sources of water and energy in the six catchments. MIT is a major R2R co-financier and will be represented by its PS on the R2R PSC.
Ministry of Rural and Maritime Development and National Disaster Management	The respective District Commissioners, their HoDs, POs and DAs have been closely involved in the development of the R2R project and in selection and liaison with communities, and will be critically important for successful implementation of project activities, including through their designated roles in committees associated with management and monitoring of the R2R project. MRMDNDM is major R2R co-financier and will be represented by its PS on R2R PSC.
Ministry of iTaukei Affairs	The R2R Community Conservation Coordinators will be based within the MiTA and the focal point for comp 1 activities, and helping to ensure optimum involvement and participation of resource owners. The MiTA Provincial Conservation Officers will be key Government staff assisting with design, planning, implementation and monitoring of local R2R project interventions and proposed to chair Village/Community Yaubula Subcommittees. MiTA will be represented by its PS on the R2R PSC.
Ministry of Foreign Affairs	MoFA is an R2R co-financier and will be involved in those components of the project which aim to make communities in the respective catchments more resilient to climate change and updated on project contributions to climate change mitigation. MoFA will be represented by its PS on the R2R PSC.
Ministry of Strategic Planning, National Development and Statistics (MSPNDS)	R2R will work with MSPNDS in several areas, including building a better baseline and monitoring of socio-economic statistics in the six catchments, and with its Integrated Human Resource Development Programme for development of human capacity and new livelihood options, especially in more remote upper and inland villages. MSPNDS is a major R2R co-financier and will be represented by its PS on the R2R PSC.
iTaukei Land Trust Board (TLTB)	The critical agency for leasing arrangements of iTaukei land in the R2R catchments, e.g. development of new terrestrial PAs.
<b>B. Civil Society Organizations and NGOs</b>	
Conservation International (CI)	Key partner for implementing the R2R project, especially for comps 1 and 2, including forest restoration in upland parts of Ba, Labasa and Tuva catchments, and agrobiodiversity conservation in Waidina catchment.
Coral Reef Alliance (CORAL)	Key partner for developing sustainable business models for marine protected areas/ LMMAs and for conducting review of user-pay systems for MPAs/LMMAs (comp 1)
Fiji Locally Managed Marine Area (FLMMA)	FLMMA is an essential partner (for research and extension) for R2R work on LMMA/MPAs (comp 1).
International Union for Conservation of Nature (IUCN)	Key partner for assessing and conserving endangered species, especially valuation of ecosystem services (comp 1), conserving mangroves including assessments of their ecosystem services and carbon sequestration e.g. in Ba, Labasa and Tuva (comp 2) water catchment values (comp 3).
Live and Learn (L&L)	Essential partner for R2R education and awareness programs, especially in comps 3 & 4 with opportunity to follow-up on its work in Ba and Labasa.

**Table 13. Summary of R2R Stakeholders and their involvement in the project**

Stakeholders	Involvement in the Project
National Council of Women Fiji (NCWF); Soqosoqo Vakamarama iTaukei (SVT)	NCWF and SVT are key partners for project activities involving capacity development, training and development of income generating opportunities for iTaukei women across all project components and in all catchments.
National Trust of Fiji (NTF)	A key partner for Comp 1 activities including the development of new terrestrial PAs in Tunulua, Tuva and Vunivia, and associated plans to utilize and contribute to long-term financing for these PAs using the Sovi Basin Trust fund.
NatureFiji-MareqetiViti (NFMV)	Vital partner for Comp 1 activities, and the key implementing partner for the planned new terrestrial PA in Tunulua, and for rapid assessments of ecosystem services using TESSA. NFMV is an R2R co-financier.
Organization for the Industrial, Spiritual and Cultural Advancement (OISCA)	OISCA is an important collaborating and implementing partner in the R2R project e.g. training of selected youths from water catchments in sustainable/organic farming. OISCA has also indicated its interest in supporting the project through mangrove and coral replanting in Tuva and Ba catchment.
Partners in Community Development Fiji (PCDF)	Useful partner for community-based, rural development and environmental protection elements of project, notably in Comp 3.
SeaWeb	Seaweb is a key partner for implementation of several activities in comp 4.
Wildlife Conservation Society (WCS)	WCS-Fiji is a key implementing partner for the R2R project, especially for comp 1 and 3 in the three Vanua Levu catchments. WCS-Fiji is an R2R co-financier.
Women in Fisheries Network – Fiji (WIF)	Key partner for implementing the R2R project and ensuring strong participation of women. Assistance with information dissemination on the role of women in fisheries, sustainable fisheries methods and approaches through lessons learnt. WIF will also assist in policy development and advocacy campaign to promote women's engagement in sustainable fisheries management.
World Wide Fund for Nature (WWF)	WWF will be a major collaborating and implementing partner in the R2R project, especially in comps 1, 3 and 4, marine protected areas/LMMAs, e.g. building on its work with Macuata Cokovata qoliqoli. Opportunity to work with WWF and Labasa Sugar Mill to minimize its outflow of waste into the Qawa River that drains directly into and negatively impacts the marine area adjacent to the mouth of the Labasa River. WWF is an R2R co-financier.
<b>C. Private Sector</b>	
Fiji Pine Ltd	Support and identify opportunities for Forest Stewardship Council certification and REDD+ activities for pine plantations (Comp 2) in Ba, Labasa and Tuva catchments. The planned reforestation projects along the Tuva catchment will assist FPL in complying the FSC Principle #6 & #9. R2R project team to collaborate with FPL on developing a new PA in upper Tuva catchment (which is partly covered in FPL lease area; Comp 1). Major R2R co-financier.
Fiji Hardwood Corporation	Support and identify opportunities for Forest Stewardship Council certification and REDD+ activities for mahogany/hardwood plantations (Comp 2) in Ba and Labasa catchments.
Fiji Tourism and Hoteliers Association FTHA (incl. Natadola Intercontinental, Natadola Beach Resort; ManFriday Resort, Likuri Island)	Liaise with FTHA and link with coastal tourist and eco-tourism resorts to develop tourism opportunities in the Tuva catchment hinterland. R2R to linked to tourism industry CSR and organized tourist volunteer activities to improve land use in the catchment and improve water quality (comp 3) and reseed corals.
Ba and Labasa Chambers of Commerce	Support operations and activities of the respective Catchment Management Committees to implement sustainable flood reduction measures (comp 3 in Ba and Labasa).
<b>D. Resource owners and local groups</b>	
Mataqali (land owning clans)	Activities undertaken on iTaukei land require permission and support of mataqali (> 75% of members).
Qoliqoli (fishing ground rights holders)	Essential project partners and beneficiaries for development, enhancement and enforcement of LMMAs/MPAs.
Local people and associations (including Women, Youth, Faith-based and Village organizations)	Essential project partners, implementers and beneficiaries for all R2R project components and catchments.
<b>E. Others</b>	
University of South Pacific (USP)	USP's Institute of Applied Science has a major role in undertaking biodiversity assessments (BIORAPs) in Upper Tuva and Tunulua (comp 1). Also a key partner for work in LMMAs in Ba, Tunulua and Vunivia. IAS managed LMMAs sites include Vanua o Votua and Vanua o Namuka & Dogotuki qoliqolis connected with Ba and Vunivia catchments, respectively. USP's Pacific Centre for Environment and Sustainable Development is a key partner for implementing comp 4.
Secretariat of the Pacific Community (SPC)	SPC is key collaborating partner through its LRD – forestry, agriculture and land use; FAME – fisheries management and SOPAC – implementing partner for Pacific Is Regional R2R project

### 3.3 STAKEHOLDER MAPPING AND ANALYSIS

A description of the diverse and considerable number of R2R project stakeholders, including their interests and activities in Fiji, potential/planned roles and relationship to the R2R project is given below (Annex 5). For the purposes of stakeholder mapping and analysis they have been grouped into six broad categories, viz. Fiji Government Ministries and Statutory Boards, Local peoples and associations; NGO/CSO and networks; Private sector; Education, Research & Technical and Regional Organizations; and International Organizations, Donors and Funding Mechanisms. It is emphasized that this list, while reasonably comprehensive, may have missed or left-out minor stakeholders.

The primary level stakeholder in the implementation/execution of the R2R project is the NIM (MLGH&E), notably the Department of Environment (DoE). As the government agency responsible for environmental planning, policy and legislation, including biodiversity conservation and sustainable management of ecosystem services, and through its Chair of the NEC, the DoE will play a key role of bridging and ensuring the collaboration and close communication between Ministries, conservation NGOs (especially for Component 1) and other project partners.

Some of the key roles for DoE will be: a) consultation with relevant stakeholders, as well as seeking financial assistance through appropriate co-financing arrangements, b) project implementation, management, monitoring and evaluation including housing the project manager and consultants, and providing secretariat as required c) information sharing and collaboration with Ministries, relevant national committees and authorities on mangroves, fisheries, forestry, agriculture, land use, water quality and pollution, eco-tourism, natural resources conservation and management, either directly or through the project advisory body and committees; and, d) exchanging best practices and lessons learned with other projects under the Pacific Island R2R Program at appropriate occasions as well as with other stakeholders at regional, national and local levels.

The other key Government Ministries whose close and active collaboration is needed for the successful project delivery and many of whom are providing co-finance are: Ministry of Agriculture, Ministry of Fisheries and Forests; Ministry of Infrastructure and Transport (water and energy); Ministry of Strategic Planning, National Development and Statistics; Ministry of Rural and Maritime Development and National Disaster Management; Ministry of Foreign Affairs; and the Ministry of iTaukei Affairs. The Department of Agriculture will have a major role in catchment/land use planning, awareness and extension, including driving change in practices and behavior of farmers towards more sustainable practices, especially soil conservation; and more efficient flood mitigation. The Department of Forestry will be the vital Government partner for all catchment activities in Component 2, and nationally to progress Fiji's REDD+ strategy. The Department of Fisheries will be the key Government partner for LMMA work in Component 1 and aquaculture/fisheries planning elements of Component 3. Both Forestry and Fisheries Departments will be vital to promote greater awareness of the economic and environmental importance of mangroves and their protection in both Government and the general public. The Ministries of Rural and Maritime Development and iTaukei, along with the respective Divisional Commissioners and their HoDs will be essential for effective liaison with local communities and for successful field implementation of project activities. The Ministry of Foreign Affairs needs to be involved and kept abreast of those parts of project dealing with climate change mitigation and adaptation, including building resilience in coastal communities and in production and natural systems. The R2R project will also need to work with the Departments of Planning and Tourism to maximize and synergise opportunities within the new Green Growth Strategy framework, as well as Ministries responsible for major developments in the catchments such as new water supply, renewable energy, mining and/or mangrove development projects which have potential to damage natural resources and ecosystems services if not carefully managed and implemented with appropriate environmental considerations and safeguards.

The local stakeholders, including villagers, village and community leader, resource owners (*mataqali* and *qoliqoli*), farmers and fishers are key to successful project implementation and sustainability of action and efforts, including sustainable management of natural resources. The project needs to effectively connect with this most vital group through both Government (MoA extension officers, Yaubula Management Support Teams and Provincial conservation officers), and also through the different conservation NGOs, many of whom have established processes to work effectively at the local, field level. The R2R project will greatly benefit from the wide involvement of conservation NGOs in project implementation including especially in Component 1 and noting that several are providing substantial co-finance, viz. WWF, Birdlife International and WCS. Planned multi-stakeholder Catchment Management Committees will provide the key local framework for bringing together different stakeholders to discuss, plan, coordinate and implement R2R activities for the larger catchments of Ba, Labasa, Tuva and Waidina/Rewa. Diverse private sector entities include stakeholders, which many have widely differing perspectives and rationales for involvement and engagement, some in the commercial retails and tourism sectors may want to participate for developing their corporate social responsibility (CSR) profile and/or promoting eco-tourism. Others, such as Chambers of Commerce may seek to be involved to enhance flood mitigation measures or develop business opportunities. The land-use and other practices of rural resource-based industries and employers such as Fiji Sugar Corporation, Fiji Pine Group and Fiji Hardwood Corporation and other agricultural exporters and processors can be positively influenced through the R2R project and in turn these companies can benefit through fair-trade and eco-certification (FSC). The group of stakeholders encompassed by Education, Research & Technical and Regional Organizations are major sources of knowledge whom can be engaged to collaborate in project activities and produce vital R&D which major spin-offs in terms of improved natural resources planning and management in other catchments, and indeed other countries. Likewise coordination of work in the R2R project with that of other international donors engaged in complementary and overlapping fields will have major synergies and reduce the risk of duplication.

### **3.4 LINKAGES WITH OTHER GEF AND NON-GEF INTERVENTIONS**

This project builds on the Pacific Islands Ridge-to-Reef approach and conceptual framework of the GEF-supported "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". The Fiji R2R project will run in tandem and have very close linkages and synergies with the planned GEF/UNDP/SPC-SOPAC project entitled "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". As part a 'child' of the 'parent' Pacific R2R program, the Fiji R2R project will be implemented closely with other national R2R projects in Cook Islands, FS Micronesia, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

The planning of the Fiji R2R project has also benefited from a number of completed and existing initiatives/processes related to biodiversity conservation and adaptive management. The Fiji R2R project is highly complementary to and will build strong linkages with ongoing GEF interventions in Fiji including:

- Regional R2R - 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 (CEO – PIF clearance).
- National Biodiversity Strategy & Action Plan and Country Report to the COP – GEF/UNDP Biodiversity (under implementation). Enabling Activity provides for preparation of the BSAP as

well as a national report to the COP – mainstreaming of Multilateral Environmental Agreements (MEAs).

- National Biodiversity Planning to Support the Implementation of the CBD 2011-2020 Strategic Plan – GEF/UNDP Biodiversity. (GEF Council Approved). Integrates Fiji's CBD obligations into its national development and sectoral planning frameworks in line with the CBD's Strategic Plan for 2011-2020.
- National Capacity Self-Assessment for Global Environmental Management (under implementation).
- Additional Funding of Biodiversity Enabling Activity in Fiji (CEO approved).
- GEF 4 PAS – 1. Forestry and Protected Area Management in Fiji, Samoa, Vanuatu and Niue project. Opportunities to collaborate on sustainable financing of PAs and SFM/REDD+, including linkages to GEF PAS 4 activities in Upper Labasa catchment. 2. Renewable Energy Power Project (FREPP) –GEF/UNDP. Climate Change (under implementation). Involved in removal of barriers to the cost-effective use of renewable energy supply – collaboration in better use of renewable energy sources in upper catchment areas.
- GEF-SGP OP5 Fiji Country Programme Strategy. Opportunities to collaborate in the three Vanua Levu catchments, especially through linkages with COMDEKS in Tunuloa district.
- Capacity building for mainstreaming Multilateral Environmental Agreement Objectives into Inter-Ministerial Structures and Mechanisms (CEO approved) and the related Building National and Regional Capacity to Implement MEAs by Strengthening Planning, and State of Environment Assessment and Reporting in the Pacific Islands (Council approved). Collaborations include valuation of ecosystem services and development of financial mechanisms to sustain environmental conservation initiatives.
- Ba Adaptation Project - Enhancing Resilience of Rural Communities to Flood and Drought-Related Climate Change and Disaster Risks in the Ba Catchment Area of Fiji. Project resubmitted. Opportunity to capture, analyze and disseminate climate change adaptation good practices and lessons learned in the setting of integrated village development processes in a more systematic way through Component 4.
- PACIW:LEARN (International Waters Learning Exchange and Resource Network) – in planning stage and with strong linkage to Component 4.
- Discovering Nature-based Products and Build National Capacities for the Application of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing - Nagoya Protocol Implementation Fund/UNDP Biodiversity (CEO Approved). The project relates to discovery of nature-based products and building national capacities that facilitate technology transfer on mutually agreed terms, private sector engagement, and investments in the conservation and sustainable use of genetic resources. Potential opportunities for income generation, including from R2R supported PAs/MPA.
- Pacific Islands Climate Change Assistance Project (PICCAP) and Pacific Adaptation to Climate Change Project (PACC) – both under implementation.



- Strengthening Coastal and Marine Resources Management in the Coral Triangle of the Pacific - under the Pacific Alliance for Sustainability Program and the related Coral Triangle Initiative – including implementation in Fiji by USP/IAS
- Implementing Sustainable Integrated Water Resource and Wastewater Management in the Pacific Island Countries - under the GEF Pacific Alliance for Sustainability – under implementation.
- Implementation of Global and Regional Oceanic Fisheries Conventions and Related Instruments in the Pacific Small Island Developing States (CEO endorsed).

The project will substantially build on and extend the diverse and numerous baseline work (plans, strategies and activities) of the Government of Fiji (as discussed above and in more detail elsewhere in this document):

- Green growth policy/infrastructure (Ministry of Strategic Planning and whole of Government)
- Land use planning (DoA) and Integrated Coastal Management Framework (DoE)
- Rural and Outer Islands Agriculture Development Programme (DoA) – including Vanua Levu
- Forest Policy, REDD+ pilots and promotion of replanting of native trees (MFF/DoF)
- Commitment to the implementation of the CBD, including PoWPA (PAC/NEC/DoE)
- National Climate Change Policy - mitigation, adaptation and resilience (MoFA)
- LMMA and Marine Protected Areas (MFF/Department of Fisheries or DoFish)
- Flood mitigation (DoA/LWRM and DoF)
- Improved supplies of potable water, including for Suva and Labasa (Ministry of Infrastructure and Transport/WAF)
- Development of ecotourism opportunities (DoT).

The project will also build on allied research and development initiatives including:

- Asian Development Bank – Support to Coral Triangle Initiative
- IUCN – MACBIO which will focus efforts on ecosystem services and/or geographical areas of interest and relevance to policies and initiatives of Fiji government ministries.
- Australian Government assistance, including the new ACIAR project “Promoting sustainable agriculture and agroforestry to replace unproductive land-use in Fiji and Vanuatu”.
- NZ Aid
- OISCA
- Pacific Center’s PRRP
-

The project will also build on NGO baseline activities in Fiji as tabulated in the project stakeholder analysis (Annex 4).

## PART IV: MONITORING AND EVALUATION PLAN

The monitoring and evaluation (M&E) scheme will be applied in accordance with the established UNDP procedures throughout the project lifetime. As an implementing partner, DoE/MLGUDH&E, together with the UNDP Multi-Country office in Fiji will ensure the timeliness and quality of the project implementation. The M&E plan, with budget, will be implemented as described in Table 14. Technical guidance and oversight will be also provided from the UNDP's Regional Bureau for Asia Pacific, as well as the NBSAP and other technical committees. The project will be monitored through the M&E activities outlined in the following sections.

### 4.1 MONITORING AND REPORTING

**Project Start:** During the PPG phase the respective and concerned Ministries were kept involved and informed, however there will be a need for pre-project discussions (e.g. amongst national government departments based in Suva as well as offices based in districts/provinces where the catchments and project demonstration sites will be located). There is also a need for awareness raising amongst senior government officials (e.g. Directors) as several Departments will provide technical support (e.g. Environment, Fisheries, Forests, Agriculture, and Lands). During this period the DoE may also want to discuss and develop MOUs/ Agreements with other Departments.

A Project Inception Workshop will be held within the first three months of project start with those with assigned roles in the project management, administration and finance, UNDP Fiji MCO and where appropriate/feasible, regional technical advisors as well as other key stakeholders. The Inception Workshop is crucial to building ownership for the project results and to review/revise the first year annual work plan. The Inception Workshop will address project issues including:

- Assist partners to understand and embrace ownership of the project. Detail the roles, support services and complementary responsibilities of PMU/DoE project team and UNDP MCO. 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 and revised if necessary.
- Based on the project results framework and the relevant GEF Tracking Tools finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget needs to be agreed.
- Discuss financial reporting procedures and obligations, and arrangements for annual audits.
- Plan and schedule Project Steering Committee (PSC) meetings. Roles and responsibilities of all project organisation structures will be clarified and meetings planned for Year 1. The first PSC meeting should be held shortly after (within two months) of the inception workshop.

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

An induction workshop will be held at the commencement of the project for the R2R project management team, as well as accounts officers of the Ministry of Environment and Ministry of Finance to ensure a complete level of understanding of UNDP financial and procurement procedures & reporting requirements.

**Quarterly:** The following tasks will be undertaken:

- Monitoring of the progress made in the UNDP Enhanced Results Based Management Platform.

- Regular updating of the risk log based on the initial risk analysis submitted, in ATLAS (UNDP corporate management system). 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).
- Project Progress Reports (PPR) based on the information in ATLAS, and generated in the Executive Snapshot. Progress to be summarized in tabular form based on SRF (and prepared by RPL)
- Monitoring issues, lessons learnt, etc. through the use of other ATLAS logs. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

**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 annual 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 are used by most focal areas on an annual basis as well.

**Project Steering Committee:** The PSC plays a critical role in project monitoring and evaluation by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning.

**Periodic Monitoring through Site Visits:** UNDP Fiji MCO 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 PSC may also join these visits. A Field Visit Report (back-to-office report) will be prepared by MCO and will be circulated no less than one month after the visit to the project team and PSC members. The UNDP RTA may participate in some of these site visits.

**Mid-term of Project Cycle:** The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation. 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 MCO based on guidance from the UNDP Asia-Pacific Regional Centre. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Resource Centre (ERC).

**Project Terminal Report:** During the last four 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.

The budgeted M&E plan is given below in Table 14.

**Table 14. M&E activities, responsibilities, budget and timeframe**

Type of M&E activity	Responsible Parties	Budget USD	Time frame
Inception Workshop (IW)	▪ PMU/DoE	7,500	Within first three months of project start up
Inception Report	▪ PMU	None	Within one month from IW
Measurement and Means of Verification for Project Progress on output and implementation	▪ Oversight by RPM and Project team	Included in RPMU budget	Annually prior to ARR/PIR and to the definition of annual work plans
Annual Project Review/PIR Two-day review meeting to rotate amongst Divisions/catchments (Nausori, Labasa, Lautoka and Savusavu)	▪ RPMU - RPM and team ▪ Communities Conservation Coordinators ▪ CMCs ▪ UNDP MCO ▪ UNDP APRC	Included in RPMU budget	Annually immediately prior to Project Steering Committee Meeting
Project Steering Committee Meeting	▪ DoE ▪ UNDP Fiji MCO	Included in RPMU budget	Annually
Periodic status/ project progress reports	▪ RPM and Project team	None	Quarterly/ Annually
Mid-term Evaluation	▪ Project team, ▪ UNDP Fiji MCO ▪ Independent Consultant	20,000	
Final Evaluation	▪ Project team, ▪ UNDP Fiji MCO ▪ Independent Consultant	24,000	At least two months before the end of project implementation
Project Audits	▪ UNDP Fiji MCO ▪ RPM and Project team	18,000	Following UNDP finance regulations and rules
Visits to R2R project field sites	▪ Project staff ▪ UNDP Fiji MCO ▪ Government reps	Included in operational costs	At all stages of project implementation
<b>Total Indicative cost</b>		<b>USD 69,500</b>	

Note: The costs indicated here do not include the costs associated with UNDP staff. Those UNDP related costs are covered by the MIE fee.

Note: Baseline and monitoring studies of key environmental indicators including terrestrial and marine biodiversity assessments (sometimes rapid assessments and sometimes comprehensive BIORAPs depending on needs), vegetation cover and forest carbon stocks are an integral part of the project. Forest carbon plots, both existing and new PSPs, will be assessed by the DoF every two years. Funding is not available for monitoring of water quality and flows but it is envisaged that some relevant monitoring will be undertaken by the WAF for some catchments, especially Rewa, Ba

and Labasa, and or through subsequent partnerships developed through, with and by the respective CMCs.

## **4.2 INDEPENDENT EVALUATIONS, AUDITS AND FINANCIAL REPORTING**

**Mid-term and Terminal Evaluation and Project Closure:** Independent Mid-term and Final Evaluations will take place at midpoint and three months prior to the final PSC meeting, respectively. The final evaluation will focus on the delivery of the project's results as initially planned. 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 these evaluations will be prepared by the UNDP Fiji MCO based on guidance from the Regional Coordination Unit and UNDP-GEF. The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC). The relevant GEF Focal Area Tracking Tools (BD, CC, IW, LD, SFM/REDD+) will also be completed during the final evaluation.

**Project Audits:** The project will be audited in accordance with UNDP Financial Regulations and Rules and Audit policies.

## **4.3 LEARNING AND KNOWLEDGE SHARING**

Results from the project will be disseminated within and beyond the project intervention zone through the DoE/R2R project website and existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation through lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Finally, there will be a two-way flow of information between this project and other projects of a similar focus, especially other Pacific R2R projects, and facilitated through PACIW: LEARN. The results will be shared globally through IW:LEARN and other platforms.

## **4.4 COMMUNICATIONS AND VISIBILITY REQUIREMENTS**

Full compliance is required with UNDP's branding guidelines. These are accessible 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](http://www.thegef.org/gef/GEF_logo).

The UNDP logo can be accessed at <http://intra.undp.org/coa/branding.shtml>.

Full compliance is also required with the GEF's Communication and Visibility Guidelines (the "GEF Guidelines"). The GEF Guidelines can be accessed at: [http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08\\_Branding\\_the\\_GEF%20final\\_0.pdf](http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf). Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications,

vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items. Where other agencies and project partners have provided support through co-financing, their branding policies and requirements should be similarly applied.

## **4.5 LEGAL CONTEXT**

This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA [or other appropriate governing agreement] and all CPAP provisions apply to this document.

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

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.

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.

## SECTION II: STRATEGIC RESULTS FRAMEWORK (SRF) AND GEF INCREMENT

### PART I: STRATEGIC RESULTS FRAMEWORK

#### *LIST OF OUTPUTS PER OUTCOME AS PART OF THE SRF:*

**Project's Development Goal:** To maintain and enhance Pacific Island countries' (PICs) (i.e. Fiji's) 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.

**Project's Immediate Objective:** To preserve biodiversity, ecosystem services, sequester carbon, improve climate resilience and sustain livelihoods through a ridge-to-reef management of priority water catchments in the two main islands of Fiji

Outcomes:	Outputs:
Improved management effectiveness of existing and new protected areas	<ul style="list-style-type: none"> <li>Expanded terrestrial and marine PA system: Three new terrestrial protected areas (Tunulua, Tuva and Vunivia) delineated and formally established to conserve biodiversity, especially unprotected ecosystems and threatened species, and maintain ecosystem goods and services in an R2R context. One new MPA (Tuva) develop and incorporated into FLMMMA.</li> <li>Improved Management of PA System: One existing terrestrial protected area (Sovi Basin) and six existing LMMA/MPAs strengthened through development and/or implementation of management plans following the Community Conserved Areas (CCA)/LMMA approach to conserve biodiversity and maintain ecosystem goods and services in a R2R context.</li> </ul>
Improved financial sustainability for terrestrial and marine protected area systems	<ul style="list-style-type: none"> <li>Valuation of biodiversity and other ecosystem services completed in at least two sites as basis for sustainable conservation finance approaches.</li> <li>Review of user fee system and options for LMMA in Fiji, including development and implementation of user fee system for Tuva/Natadola.</li> <li>Assessment completed on the existing Trust Fund for Sovi basin and potential for its utilization by planned new R2R PAs; guidelines for fund management and utilization reviewed and recommendations formulated.</li> </ul>
Carbon stocks restored and enhanced in priority catchments	<ul style="list-style-type: none"> <li>Restoration and enhancement of carbon stocks in degraded forests in six priority water catchments using native tree species commencing with demonstration/research plots in each catchment.</li> </ul>

Outcomes:	Outputs:
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Strengthened governance for integrated natural resources (land, water, biodiversity, forests) management	<ul style="list-style-type: none"> <li>National sectoral policies strengthened with INRM (covering land, water, forests, biodiversity) in the following sectors: forestry, agriculture, lands, fisheries, <i>iTaukei</i>, tourism, and health.</li> <li>National and Provincial government - relevant agency staff including <i>RokoTuis</i>, Assistant <i>Rokos</i> and Conservation Officers, trained for INRM through leadership and/or participation in project activities.</li> <li>Empowered communities as a result of participation in: 1) formulation of PA management plans and catchment management plans; 2) alignment of community livelihoods with local priorities; 3) development of market-based instruments within the project, including ecosystem services.</li> </ul>
Improved data and information systems on biodiversity; land, forests, coastal and marine management; climate change and best practices	<ul style="list-style-type: none"> <li>Information portal established for easily accessible data and information on project outcomes based on biodiversity, forests, coasts, land and water management practices, including climate change.</li> <li>A knowledge management component is integrated into the ToR of all project staff to streamline information management process.</li> <li>A portal policy developed to guide the structure of the data and information received.</li> <li>A knowledge management officer is recruited to ensure that the data and information captured from project activities are catalogued, archived and maintained in a meaningful way.</li> <li>Discoverability and accessibility of the projects information portal is ascertained and addressed.</li> <li>Facilitate linkages with other relevant information portals in the region such as the Pacific Climate Change Portal, Disaster Net, University of the South Pacific Research Portal and the USP-EU GCCA knowledge center.</li> <li>A communications strategy of the project Portal is designed and implemented so relevant partners are aware and can access information of the project from the portal.</li> <li>Knowledge products (brochures, flyers, videos) on all thematic/focal areas and best practices developed and disseminated through various print and broadcast media.</li> <li>Exchange visits by community leaders, resource owners and farmers to observe catchment use and management (including best, good and bad practices).</li> </ul>

### **INDICATOR FRAMEWORK AS PART OF THE SRF**

The performance indicators contained in the SRF below are all 'SMART' (Specific, Measurable, Achievable, Relevant and Time-bound). The choice of indicators is based on their pertinence to the underlying assumptions in the analysis of project objective and outcomes, while reflecting GEF's Tracking Tools and UNDP's IRRF indicators. Some process-oriented indicators have been selected from the IWRM Guidelines for SIDS and international guidelines for ICM.

**Goal:** To maintain and enhance Pacific Island countries' (PICs) (i.e. Fiji's) 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.

Project Activity	Objectively verifiable Indicators	Means of verification	Risks and Assumptions
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	Indicator	Baseline	Target		
<p><b>Objective:</b> To preserve biodiversity, ecosystem services, sequester carbon, improve climate resilience and sustain livelihoods through a ridge-to-reef management of priority water catchments in the two main islands of Fiji</p>	<p>Fiji R2R Project Work plan being implemented on time and budget.</p>	<p>Increasing human pressures on natural resources (aggravated by climate change and environmentally invasive species), are resulting in ongoing forest and land degradation in many parts of Fiji, with associated increased soil erosion, flash flooding, chemical and nutrient runoff, water pollution and deterioration of associated riverine, estuarine and marine resources.</p>	<p>Identified key interventions, including improved land use planning and catchment management, new and better managed protected terrestrial and marine areas, reforestation, agroforestry, sustainable financing mechanisms for PAs including from donors and market-based sources, progressively implemented in the six priority, representative catchments as per the Fiji R2R Project work plan.</p> <p><b>By End of Project:</b> All six catchments have sound catchment management plans which promote more integrated natural resources management and which are being implemented by Government agencies, private sector, NGOs and resource owners and users. Multi-stakeholder catchment management committees successfully operating in at least four catchments (Ba, Labasa, Tuva and Waidina).</p>	<p>Project Reports and publications (including annual reporting by PMU of DoE to UNDP).</p> <p>Government and NGO publications and communication materials and publicly accessible website (Comp 4).</p> <p>Mid- and end of project survey of activities and impacts to be conducted by DoE in partnership with Provincial Offices.</p>	<p>Pressures on natural resources and the environment will increase due to increases in population and/or increases in consumption.</p> <p>Implementation of field activities such as reforestation and coastal protection will be adversely impacted by extreme climatic events (severe cyclones, flash flooding, ENSO (droughts) and tsunami).</p> <p>Lack of capacity for legal enforcement of environmental and forestry legislation and policies and community-based environmental taboos.</p> <p>The Government of Fiji, UNDP and other NGO partners are able to provide the promised co-financing, or that alternative sources can be identified.</p> <p>Inadequate collaboration among concerned Government agencies and other stakeholders needed to create a national policy and legal environment conducive for REDD+, integrated sustainable natural resources management on <i>iTaukei</i> lands, including protected areas and FLMMAs.</p>

Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
<b>Outcome 1.1 <i>Improved management effectiveness of existing and new protected areas</i></b>	Important biodiversity conserved in the six catchments, including terrestrial, riparian and marine ecosystems, endemic and rare species and genetic diversity (especially in keystone species, agrobiodiversity, forest genetic resources)	One viable, formal existing terrestrial PA (Sovi Basin 16,344 ha) and five extensive 'quasi protected' mangrove stands (6,785 ha), as part of a vast coastal area of LMMA (387,200 ha). Limited local management and protection. Variable knowledge of status of biodiversity conserved in PAs.	Three new terrestrial protected areas (Tunuloa – 4,400 ha; Tuva - 1,300 ha and Vunivia – 3,500 ha) and six enhanced MPA/LMMAs (3,872 km <sup>2</sup> - IUCN Category VI) and one new LMMA of 9.7 km <sup>2</sup> (Tuva). Two additional comprehensive BIORAP assessments (new Tuva PA in Year 1 and Natewa/Tunuloa IBA in Year 2). Management plans developed based on existing community conservation action plans and implemented for each PA.	Reports of project activities (quarterly, annual, M&E) PA trust fund reports GEF BD Tracking Tool reports	<i>Mataqali</i> ( <i>iTaukei</i> land-owning units) and <i>iqoligoli</i> (fishing grounds) customary fishing rights owners will agree to review, reconfigurations and/or confirmation, and actively support new PAs and help monitor and prevent illegal activities  Tuva PA can be protected from wildfire, including through green and agroforestry buffer zones  Environmentally invasive species, especially African tulip can be prevented from entering and spreading in PAs
<b>Output 1.1.1: Expanded terrestrial and marine PA System</b>	Status of protected areas (terrestrial and marine) in terms of biodiversity conserved, size and number in the six catchments and their connected marine habitats	Terrestrial: Sovi basin (16,344 ha); Natewa/ Tunuloa IBA (6,625 ha, with 4437 ha in Tunuloa district) – insecure protection status; Vunivia Catchment: (34 ha). Coastal: Tuva mangroves (710 ha); Rewa delta mangroves (8,636 ha); Labasa mangroves (approx. 3,000 ha), Ba mangroves (4,594 ha); Vunivia mangroves (355 ha). Mangroves are mainly located on state land, inadequately	Three new terrestrial protected areas (Natewa Peninsula 4,400 ha, Tuva - 1,300 ha, and Vunivia – 3,500 ha) delineated and formally established, and seven MPAs/LMMA with strengthened conservation status (IUCN VI) in Ba (Vanua o Votua <i>qoligoli</i> - 1531.8 km <sup>2</sup> ), Labasa (Macuata Cokovata <i>qoligoli</i> - 1344 km <sup>2</sup> , Vanua Labasa <i>qoligoli</i> -38 km <sup>2</sup> and Vanua	Reports of project activities (quarterly, annual, M&E) PA trust fund reports GEF BD Tracking Tool report  Forestry reports/ inventory of mangroves and forest reserves in catchment	<i>Mataqalis</i> and <i>qoligoli</i> owners will actively support planned new PAs  Financial returns to owners from PA lease will be equal to or greater than that which can be obtained through exploiting the natural resources present (especially timber and fisheries).  Tuva PA can be protected from wildfire, including through education & awareness, green

Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
		valued and protected by Department of Lands.  Note: Priority Protected Area Network identified by PAC – but yet to be formally adopted and implemented by Government	Wailevu <i>qoliqoli</i> – 41 km <sup>2</sup> ), Rewa delta (comprising Vanua o Noco <i>qoliqoli</i> 43.4 km <sup>2</sup> & Vanua o Burebasaga <i>qoliqoli</i> 111.7 km <sup>2</sup> ), Tunuloa (Cakaudrove Tunuloa <i>qoliqoli</i> comprising Yaroi 678 km <sup>2</sup> & Somosomo 31.4 km <sup>2</sup> ), Tuva (Vanua o Cuvu and Tuva <i>qoliqoli</i> 9.7 km <sup>2</sup> ) and Vunivia (Vanua o Namuka and Dogotuki <i>qoliqoli</i> 132 km <sup>2</sup> )		and agroforestry buffer zones
<b>Output 1.1.2:</b> Improved Management of PA System	Management plans developed and implemented for the protected areas (terrestrial and marine) in the six catchments and their connected marine habitats	Current protected areas generally have no formal management plans and are subjected to minimal management interventions, other than restrictions on harvesting. Information on biodiversity assets being conserved ranges from very good (Sovi) to limited (Tunuloa)	Management plans developed for at least four terrestrial and four marine protected areas in the R2R catchments and implemented through collaborative partnerships under a community governance body.	PA management plans  Reports on biodiversity surveys of each PA	Simplified PA management plans are able to be mainly implemented by local communities with minimal external resources (other than training, capacity building and some equipment/tools).
<b>Outcome 1.2:</b> <i>Improved financial sustainability for terrestrial and marine protected area systems</i>	Long term viability of PAs ensured through well-managed, viable/ adequate Trust funds financed from diverse sources including payments for ecosystem services (REDD+), user fees and philanthropic donations including from international conservation NGOs.	Sovi Basin has an established Trust Fund which used as the legal financial instrument for other PAs in Fiji (including through R2R).  User fees systems for FLMMAs are being trialed in Fiji.  Fiji is well advanced with REDD+ readiness with policy developed and being enacted, but further discussions and	Valuation of biodiversity and ecosystem services undertaken for Sovi basin and one seascape PA.  User fee system developed and pilot tested for one marine PA/LMMA (Tuva-Natadola).	Reports of project activities (quarterly, annual, M&E)  PA/Sovi Basin trust fund reports  GEF BD Tracking Tool reports	Performance of global financial systems/ developed economies is satisfactory and enables donors such as GEF and international conservation NGOs to provide funds for Fiji's PAs.  Tourist visitor numbers are maintained or increased such that user fees, ecotourism and other tourist-related income can be generated for PA

Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
		legislation is needed.			management.  PES systems continue to advance internationally, and REDD+ financing can be generated in Fiji in support of forested PAs and blue carbon (including mangroves).
<b>Output 1.2.1:</b> Valuation of biodiversity conservation and other ecosystem services completed in at least two sites as basis for sustainable conservation finance approaches	Ecosystem services of PAs, including for biodiversity conservation, water catchment, coastal protection and carbon sequestration, are properly valued and that the owners/managers of these PAs can use this information to generate funding for their ongoing protection and management	There have been very few thorough evaluations of ecosystem services in Fiji – Rao <i>et al.</i> (2013) found that the service functions of mangroves in Lami outweighed direct extractive functions by a factor of five. IUCN/MESCAL initiated a valuation of the Rewa Delta mangroves. Some analysis of ecosystem services will be undertaken in Fiji in 2014 through IUCN/MACBIO project.  Considerable work has been undertaken on valuation of ecosystem services in other tropical, developing island countries which may be relevant to Fiji	Comprehensive valuation of biodiversity conservation and ecosystem services undertaken for Waidina (viz. Sovi basin PA, Wainavadu catchment) and Rewa Delta mangroves and seascape PAs.  Assessment of carbon stocks in mangroves associated with R2R project catchments (which are yet to be assessed viz. Ba, Labasa, Tunuloa, Tuva and Vuniviva) and comprehensive fisheries biodiversity /livelihoods values (gender disaggregated) in these areas.  Rapid Assessment of Ecosystem Services for new/enhanced marine and terrestrial PAs in Ba, Labasa, Tunuloa, Tuva and Vuniviva catchments.	Reports on the Value of Ecosystem Services, including sustainable livelihoods, in R2R priority catchments	Inadequate funding available from international community and other benefactors to pay for the ecosystem services provided by PAs  Lack of appreciation/ undervaluing at international and national political levels of ecosystem services (even after economic studies undertaken)
<b>Output 1.2.2:</b> Review of user fee system and options for	User fee systems financing marine and mangrove	At least two user fees systems for FLMMAs are in operation in	User fee system developed and pilot tested for one	Report of user fee system developed and piloted for	A national user fee system for LMMAs will be cumbersome

Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
LMMA in Fiji, including development and implementation of user fee system for Tuva/Natadola	protected areas developed and functioning as intended	other parts of Fiji which can be studied and developed as model.	marine PA/LMMA (Natadola).	Natadola marine PA/ LMMA	and difficult to implement – viz. which users pay, how will funds are collected and then disbursed  User fee systems for LMMAs are likely to be highly geographic/context specific and dependent on tourist activities such as dive operations
<b>Outcome 2.1: Carbon stocks restored and enhanced in priority catchments</b>	Carbon stocks increased in living biomass in trees in six priority catchments	<p>The estimated living (above and below ground) biomass in trees (native forest including mangroves, and plantations) at the start of the project is 49.55 million tonnes CO<sub>2</sub> equivalents:</p> <p>Ba: 13.75 M tonnes  Labasa: 5.56 M tonnes  Rewa Delta 15.22 M tonnes  Tunuloa: 1.77 M tonnes  Tuva: 3.47 M tonnes  Vunivia: 1.28 M tonnes  Waidina: 8.49 M tonnes</p>	<p>The target for reforestation and forest rehabilitation established during and by the project is: New plantings: 1,305 ha and Forest rehabilitation: 600 ha. A substantial area (est. 20% of grasslands) totaling approx. 16,000 ha in fire-prone catchments (Ba, Labasa, Tuva) to spontaneously regenerate to scrub/ woodland/ forest following education and awareness campaigns to reduce burning and promotion of assisted natural regeneration.</p> <p>The long-term target for reforestation in the six R2R priority catchments is 20,000 ha.</p>	<p>Reports on assessments of carbon stocks in the six priority catchments, specifically on changes in carbon stocks in those areas where a project intervention has occurred – viz. reforestation, agroforestry and/or forest protection</p> <p>Reports of reforestation and enrichment plantings and protection activities</p>	<p>Forest carbon stocks will be incorrectly assessed due to insufficient sampling and/or inadequate stratification of vegetation into similar carbon stock classes</p> <p>Carbon stored in replanted and regenerated trees will be limited due to need to focus only on native species</p>
<b>Output 2.1.1:</b> Restoration and enhancement of carbon stocks in degraded forests in six priority water catchments using	Increased area of healthy, growing multiple use and protection forests comprised of native tree species ( and	Map of each catchment showing different vegetation classes and areas	The target for reforestation and enrichment planting is 1,905 ha during the project period as follows (with long	Assessments of satellite images of catchments, especially project intervention sites, and informed by ground	Resources are inadequate to undertake the planned forest restoration and reforestation activities

Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
native tree species commencing with demonstration plots in each catchment	secured as part of a permanent forest estate)		term target totaling 20,000 ha or approx. 25% of grasslands in brackets): Ba 300 ha (12,000 ha) Labasa 420 ha (2,000 ha) Waidina/Rewa 360 ha (1,000 ha) Tunuloa 240 ha (250 ha) Tuva 360 ha (4,500 ha) Vunivia 225 ha (250ha)	surveys of forest cover (in permanent sample plots)	The reforested areas will sooner or later regress to poorer carbon stocked and less vigorously growing forests due to lack of maintenance or fire.
<b>Outcome 2.2: Sustainable forest management achieved through innovative market-based schemes</b>	A substantial gazetted permanent forest estate, including production/ multiple use forests managed according to SFM principles and certified through an internationally recognized schemes (such as FSC) and protection forests (supported through PES such as REDD+)	Forest legal situation complicated by having relevant laws spread across multiple pieces of legislation. Legal situation with respect to REDD+ and carbon rights yet to be clarified.  FSC certification has been under consideration for many years but has yet to be adopted.	Updated forestry legislation, with Fiji's key forest assets permanently protected and gazetted and providing an optimal range of services and products for resource owners, the general population, forest industry and Government.	DoF Annual Reports  Forestry and allied legislation published in Government Gazette  FSC website and reports	Forestry sector and matters, especially environmental dimensions, become politically marginalized  Traditional landowners object to their lands being permanently gazette as forest estate  Popularity or credibility of FSC wanes as the premier international market-based timber certification system
<b>Output 2.2.1:</b> Completed forest certification and verification of timber supply chains for plantation forests (pine and potentially mahogany) covering 15,000 hectares to reduce pressure on forest resources, building on ongoing efforts	Fiji's forestry industries (notably pine and mahogany plantations and native forest logging operations) are FSC certified.	Fiji DoF has been actively working on forest certification schemes, but native forestry production operations have yet to be FSC certified.  Fiji Pine Group is well advanced with its FSC Certification process and is currently involved in undertaking corrective actions including restoration of landslips and	All forestry operations in the six target catchments are FSC certified, such that adverse environmental impacts of forest utilization are minimized. High conservation value forests are identified and protected and riparian buffer zones are maintained with native tree species in the R2R	FSC website and company documentation  Chain of custody records for timber supply chains from native and plantation forests in the six catchments	FHL and mahogany sector pursues systems of forest certification which have poor international market recognition  Fiji Pine Ltd. fails to meet required corrective actions due to lack of resources and skills to implement  For small-scale native forest logging operations the costs of

Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
		<p>riparian zones.</p> <p>The Fiji Hardwood Corporation and Sustainable Forest Industries Ltd (the major mahogany processor) has been exploring alternative private forestry certification standards but these are costly and likely to have poor recognition in international markets.</p>	priority catchments.		FSC certification outweigh the benefits unless a suitable Group Certification System can be established such as for SLIMF (Small and Low Intensity Managed Forests) and an accepted Group Manager identified.
<b>Output 2.2.2:</b> Forest policy and related legal and regulatory frameworks reviewed and appropriately reformulated with alignment to SFM/REDD+ methodologies	Fiji's forest policy, laws and regulations, & related legal and regulatory frameworks operate and function to support sustainable forest management and REDD+	<p>Currently 26 different forestry-related legislations with an FAO-executed GEF 4 project developing overarching forestry legislation.</p> <p>Ongoing policy and legal work includes:</p> <ul style="list-style-type: none"> <li>• REDD+ Readiness and Policy with draft Strategic plan</li> <li>• Policy area on establishment of comprehensive system of reserves and conservation areas, determining sufficient area as Permanent Forest Estate for sustainable forest management</li> <li>• Revision and Enforcement of the Fiji Forest Harvesting Code of Practice to enhance SFM</li> <li>• Law on the conservation of mangrove ecosystems towards sustainable management</li> </ul>	<p>Review and reformulation of relevant policies under overarching forestry legislation.</p> <p>Regulations developed and enacted arising from new forest policies and legislation in relation to SFM, REDD+ and other payments for environmental services (PES).</p> <p>Forest fire policy and legislation developed and implemented.</p>	Government Gazette giving details of relevant laws passed and regulations enacted	<p>Unanticipated delays in public consultation processes, legislative drafting such that laws are not enacted after the project concludes.</p> <p>REDD+ processes and financing stall in international fora</p>



Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
<b>Output 2.2.3:</b> Existing carbon monitoring, reporting and verification (MRV) systems reviewed and adapted to forests in Fiji	Levels of carbon stored, and its dynamics, in Fiji's forests is known and able to be ascribed geographically ( by different Province and islands) and by forest types	The level of carbon presently stored in Fiji's forests has been estimated through a comprehensive national carbon stock assessment (above and below ground living biomass) by the DoF in 2010-11 which found a total carbon stock of 262 M tonnes of CO <sub>2</sub> equivalent (comprised of 221 M tonnes in native forests, 27 M tonnes in pine plantation and 14 M tonnes in mahogany plantations), and not including mangroves. Fiji's forest carbon stock will be re-assessed by DoF in 2014.	Continuously improved national MRV assessments as part of REDD+ program  The DoF has identified measures to improve data quality of future assessments including measurement of dead wood.	DoF reports as part of FAO international coordinated MRV.	Permanent sample plots difficult to relocate due to cyclone or other major disturbance  Assumptions used to make carbon store estimates may be inaccurate (such as the equation for estimating biomass in tropical forests and the proportion of living biomass below ground)
<b>Output 2.2.4:</b> Capacity building for REDD+ for 50 staff in the DoE and DoF, and 60 community leaders in subject areas relevant for each group (e.g. carbon inventory, surveys, MRV, risk management/ mitigation)	Relevant Government staff have capacity to fully and effectively implement Fiji's national REDD+ strategy and policy	GIZ, SPC and FAO in collaboration with partners such as JICA and CIFOR have been running workshops, training programs, including field surveys and building capacity in DoF (including Senior staff, research and technical staff  DoF staff well trained in REDD+ and MRV, including carbon inventory surveys  Need for development and training in free, prior and informed consent (FPIC) processes for REDD+ for Government staff (including Forestry, Environment and TLTB)	National and local capacity built in REDD+ with training provided to an additional 110 people, in Government, communities and NGOs	Project Training and Project Progress Reports	
<b>Outcome 3.1: Integrated</b>	Integrated catchment	The soils, vegetation and land	Land use planning and	Published land use capability	Land owners and developers

Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
<i>catchment management plans integrating conservation of biodiversity, forests, land and water formulated and implemented in priority sites</i>	management plans resulting in improved land use, natural resource management and conservation, better environmental and/or economic outcomes for people living in and dependent on the natural resources in the respective catchments. Strengthened coordination of sectoral planning with mainstreaming of land care, sustainable development, green growth etc.	use capability of most of Fiji, including Viti Levu and Vanua Levu, has been mapped and studied. However, only in a few cases has this information been used to inform rational land use planning and conservation actions, e.g. Tuva catchment (Land Use Planning) and Ra Province, Viti Levu (CRISP/ CORAL project). Available policy documents and implementation structure/process at national planning level.	<p>related decisions are well-informed, technically and scientifically sound (including by Government, landowners, private sector). Approved developments increasingly based on land use capability assessments; taking into account interconnectivity of landscape elements and hydrological system, and downstream impacts. National development consultation forums e.g. NEDC convened on regular basis for information and input of all stakeholders.</p> <p>Catchment management plans developed for Ba, Labasa, Tuva and Vunivua River catchments, and periodically revised and updated.</p> <p><i>With additional resources secured and permitting then</i> - Catchment management plan developed for the Waidina River and progressively extended to entire Rewa River catchment during the second half of project</p>	<p>maps and catchment management plans by Land Use Planning and Catchment management committees.</p> <p>Ministry of Strategic Planning policy publications and consultation process.</p>	<p>will act in perceived best commercial interests and ignore technically sound advice from Government and NGOs concerning land use options, and/or fail to properly consider the impacts of their actions on those living downstream.</p> <p>EIA process for major new developments in catchments will promote environmentally appropriate outcomes – including assessment of alternatives, rejection of bad developments, monitoring of outcomes and enforcement of consent conditions</p> <p>Relevant Government authorities have capacity, resources and willpower to enforce regulations related to utilization of natural resources (e.g. mining and gravel extraction, forest harvesting, agriculture on steep slopes and near rivers etc).</p>

Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
<b>Output 3.1.1:</b> Biophysical, demographic and socioeconomic assessments conducted in six priority water catchments to inform integrated natural resources management	Biophysical, demographic and socioeconomic data available and analyzed on catchment basis (as input into Government policy and decisions making processes)	Baseline data on biophysical, demographic and socio-economic data gathered for each catchment during the PPG. This includes soil, geology and vegetation maps; demographic data for villages and settlements and socio-economic data. The Ministry of Strategic Planning with socio economic data and Population and HIES data is available with the Fiji Bureau of Statistics (FBOS)	Biophysical, demographic and socio-economic data gathered during PPG analyzed, with analysis used as input to inform land use planning and project activities in the catchments	R2R Prodoc annexes  Government published policy documents and Reports	That data obtained and provided is accurate  That Land Planning Section will have human and other resources to properly conduct assessments within planned timeframe  FBOS to breakdown national population figures by catchment, by village/community and provide updated figures.
<b>Output 3.1.2:</b> Catchment-wide integrated management plans with emphasis on interconnectivities of land, water, coasts, forests, and biodiversity developed, refined or strengthened in at least five priority catchments	Integrated catchment management plans – technically, socio-economically and environmentally sound – developed and implemented for the priority catchments	Catchment management planning well developed for Tuva catchment and Sovi Basin (tributary of Waidina), but not for other catchments	Integrated catchment management plans developed for four priority catchments (Years 1 & 2).	Published catchment management plans by Land Use Planning and Catchment management committees.	That Land Planning Section will have human and other resources to develop catchment management plans within the planned timeframe
<b>Output 3.1.3:</b> Multi-stakeholder Catchment Management Committees (CMCs), including community organizations, formed and strengthened to implement integrated catchment management plans in six priority catchments	Catchment management committees meeting on regular basis and functioning to manage, monitor, report and promote improvement management and more rationale use natural resources within catchment	The six priority catchments currently do not have catchment management committees. There is a functioning Catchment Management Committee for the Nadi River  TAB already have some structures and systems on the ground through their YMST.	Four of the priority catchments have functioning and effective multi-stakeholder Catchment Management Committees	Articles of association of Catchment Management Committees and minutes/reports of meetings	CMC process and recommendations will be taken into full account by Government Departs, Provincial Authorities, landowners, farmers, private sector, NGOs and others.  That the CMCs will be sustained after project completion – this will depend on both perceived on-going need and resources. The Waidina CMC will eventually be expanded into a Rewa CMC

Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
<b>Outcome 3.2: Strengthened governance for integrated natural resources (land, water, biodiversity, forests) management</b>	<p>Appropriate institutional and governance structures functioning at National, Provincial and Village levels (decision, policy and planning) to provide coherent management of natural resources.</p> <p>Appropriate law, policy and regulations developed and enacted for integrated natural resources management</p>	<p>The National Environment Council (NEC), established under the National Environment Act (NEA) is the appropriate functioning body with encompassing TOR and wide representation from all relevant Ministries/ Departments as members.</p> <p>Establish and assess situation with land, water and forest management.</p>	<p>Pending establishment of an integrated natural resources policy, as an interim measure strengthen DoE/NEC with new/ additional NBSAP type model to encapsulate land, water, forests and fisheries conservation under its structure. Empowerment to TAB with additional resources. It has mainstreamed environment into its provincial operation e.g. Provincial Conservation officers and YMST</p>	<p>DoE/NEC/NBSAP structure/operation.</p> <p>Land Use and Forestry Reports, organization structure, system and process. Other government Reports e.g. Ministry of Strategic Planning and National Development. TAB/<i>iTaukei</i> Reports on conservation at province, district and community levels.</p> <p>Review/analyze policy, laws and regulations</p>	<p>Government commitment and budgetary provision for implementation of MEAs it has ratified, in this case the CBD, UNFCCC, UNFCCC.</p> <p>Integration of universal values (governance) into the implementation structure of R2R</p>
<b>Output 3.2.1:</b> National sectoral policies strengthened with INRM (covering land, water, forests, biodiversity) in the following sectors: forestry, agriculture, lands, fisheries, <i>iTaukei</i> , tourism and education	<p>Regular and structured consultation between the concerned Government Departments and other stakeholders to consider natural resources policies</p> <p>Ecosystem services especially water catchment, carbon sequestration and biodiversity conservation values fully considered in new developments (infrastructure, mining, agriculture, forestry)</p>	<p>Except for NEC/BD/NBSAP/CC consultations among Government Departments occurring on ad-hoc basis.</p> <p>National Economic Development Council (NEDC) no longer functioning. Some consultative forums discontinued.</p> <p>Weak linkages between Land Use Planning (Agriculture) and other Govt Departments. No clear implementation law, policy, regulation and structure in place in some areas.</p>	<p>Strengthened role of National Planning Office in policy coordination and consultation process for integrated natural resources policy in place.</p> <p>Integrated Natural Resources and Catchment Management Policy approved by Cabinet</p>	<p>National Development Policy documents</p> <p>Status of implementation of Rio Agenda on Sustainable Development and Green Growth Framework</p>	<p>High level support for development of integrated natural resource development policy.</p>
<b>Output 3.2.2:</b> National and local government relevant agency staff trained in INRM through leadership and/or	<p>Well informed and trained staff in Integrated Natural Resources Management in relevant Government</p>	<p>DoE and TAB/<i>iTaukei</i> short term training programmes. Government and donors provide scholarship for formal</p>	<p>Organize Appropriate Curriculum and training sessions for each level.</p>	<p>Status of current operation including local committees and sites.</p>	<p>Coordination between government Ministries/ Departments for long term/ sustainability of training and</p>

Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
participation in project activities	Departments. Champions of INRM active at all governance levels.	qualification. Tertiary institutions /universities conduct training courses, both formal and informal training	DoE/TAB/ <i>iTaukei</i> to conduct short term courses as a priority. Formal training as medium to long term plan, Engage consultants/tertiary institutions.	DoE Reports from NEC/NBSAP and PA etc. <i>iTaukei</i> Reports, Forestry Reports on conservation etc.	awareness. Government to consider inclusion of environment studies/INRM in school curriculum
<b>Output 3.2.3:</b> Empowered communities arising from participation in: a) formulation of management plans; b) alignment of community livelihoods with local priorities; c) development of market-based instruments by the project, including PES d) monitoring and reporting back on local project activities to CMC	Communities actively engaged in conservation and sustainable resource based economic activities.	Catchment plans in identified sites .Current structure of <i>iTaukei</i> village community plans DoE/NBSAP Reports. Agriculture and Forestry Reports. Biophysical and Livelihood information. Micro financing information-small and medium sized enterprises	Catchment Management Plans in all sites formed with the input of communities for ownership/ commitment, relevant to their needs, creating economic opportunities.	DoE/NBSAP, Provincial/ community reports/ Land Use and Forestry and Biophysical data	Some expertise required at community level for commercial, market and economic services and finance literacy.
<b>Outcome 4.1: <i>Improved data and information systems on biodiversity; land, forests, coastal and marine management; climate change and best practices</i></b>	Information, knowledge and lessons learnt during the project is shared widely, in a timely manner, both within Fiji, in other Pacific Island countries undertaking R2R projects and globally	Information on R2R approaches, its technologies and benefits are little known and poorly understood in Government and by resource owners and user and the general populace. An exception would be the Land Use Planning Section, and recipients of its training programs. The general importance of maintaining forest cover and biodiversity, soil conservation farming practices, protection of mangroves are understood at a general level.	Key decision makers in Fiji Government, relevant professionals in concerned Departments, NGOs and private sector are progressively better, and well informed by project end, on approaches, needs and benefits for integrated catchment management, biodiversity conservation and development of forest and blue carbon stocks through the R&D activities of the project, and through a well-formulated and implemented KM protocol	Written knowledge management protocol and communications strategy.  DoE website (information portal) which is easily accessible and includes all relevant information on R2R project, lessons learnt and with links to other relevant websites (including other IW:LEARN, Government Departments, CROP agencies, Conservation NGOs) other R2R projects in the Pacific Islands and elsewhere – key documents	That vital information generated through the project including both positive and negative experiences will be properly documented and provided to web site administrator.  That sufficient resources are allocated for developing, maintaining, updating the information portal, including well beyond the life of the project.  That the target audience will have inclination, time, fast and reliable internet access to make

Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
			and communications strategy	downloadable in PDF format.  Annual progress reports documenting all project media, communications and reports.  Reports of exchange visits between communities to inspect project activities.	use of information portal
<b>Output 4.1.1:</b> Information portal established for easily accessible data and information on biodiversity, forests, coasts, land and water management practices, including climate change	DoE website (information portal) well-designed with relevant information and links, functional, regularly updated and well-used by target audiences	R2R approaches, technologies and benefits are little known and poorly understood in Government, by resource owners and users, and the general population. An exception would be the Land Use Planning Section, and recipients of its training programs. The general importance of maintaining forest cover and biodiversity, soil conservation farming practices, protection of mangroves are understood at a general level.  Information relevant to the R2R projects undertaken by partner organizations and other relevant government departments are not easily accessible and discoverable.	DoE website (information portal) which is easily accessible, well-maintained and includes relevant information on R2R project, lessons learnt and with functioning links to other relevant websites (including other Government Departments, CROP agencies, Conservation NGOs) other R2R projects in the Pacific Islands and elsewhere – key documents downloadable in PDF format.	A knowledge management protocol is developed and implemented  Discoverability and accessibility of the portal by primary users is greatly improved  Website hits will be monitored on a monthly basis using various online verification tools  DoE website.  Website statistics.	Sufficient resources are allocated for developing, maintaining, updating the information portal, including well beyond the life of the project.  A suitable person is able to recruited to the position of knowledge management officer
<b>Output 4.1.2:</b> Overarching communications strategy, including selection and creation of appropriate knowledge products (brochures, flyers, videos) on all thematic/focal	Easily accessible and discoverable information on sound natural resources management, use and conservation; including information on best	Access to technical information and best practices is limited communities. In addition, limited action-orientated information is published in newspapers and/or reported through other popular	Key decision makers, relevant professionals, resources owners and general public are provided with relevant information on (at least) monthly basis	R2R project public communications (listing and physical copies available for review	That the best field practitioners will also either have or make time to write up and communicate their lessons and findings; and that these will be in language that is readily

Project Activity	Objectively verifiable Indicators			Means of verification	Risks and Assumptions
	Indicator	Baseline	Target		
areas and best practices developed and disseminated through appropriate channels, including community meetings, site exchanges, and local and international print and broadcast media outlets	agricultural, forestry, land, water and mining practices and on matters which damage catchments (logging not following code, agriculture which leads to soil erosion, poorly practiced and regulated gravel extraction, bad mining practices notably dumping spoils directly into waterways	press (TV and radio). NB. Fiji popular press coverage on natural resources management and related conservation issues is noticeably better than many other developed and developing countries	through popular media on relevant catchment and natural resources issues, with access to more detailed reports and information through DoE website		comprehended
<b>Output 4.1.3:</b> Community leaders, YMSTs, resource owners, associations (women, youth , faith-based), farmers, educators and students better informed of best R2R land-use practices through program of learning exchange visits within catchments and, to and from neighboring catchments	Best practice R2R sites being utilized for educational and awareness purposes.  R2R lessons spread and adopted in other catchments	Few field visits undertaken, mainly by limited number of Government officials as part of international meetings and incidentally by villagers travelling for different purposes	Frequent visits being undertaken to best R2R practices field sites, especially from those in adjacent and nearby catchments to educate and raise awareness among community and association leaders, landowners, farmers, educators and students	Reports on visits undertaken, both progress reports and those of participants	Demonstrable improved and results of best practices will only start to become evident towards the end of the project, including for LMMA, forest plantings and conservation farming/agroforestry practices

## SECTION III: PROJECT BUDGET, WORKPLAN AND TIMETABLE

<b>Award ID:</b>	00083111	<b>Project ID</b>	00091748
<b>Business Unit:</b>	FJI10		
<b>PIMS :</b>	5216		
<b>Project Title:</b>	Implementing a “Ridge to Reef” approach to Preserve Ecosystem Services, Sequester Carbon, Improve Climate Resilience and Sustain Livelihoods in Fiji		
<b>Implementing Partner (Executing Agency):</b>	Ministry of Local Government, Housing and Environment		

GEF Outcome/ Atlas Activity	Responsible Party/Impleme nting Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount (USD) Year 1	Amount (USD) Year 2	Amount (USD) Year3	Amount (USD) Year4	Total (USD)	Budget Notes
Outcome 1.1 Improved management effectiveness of existing and new protected areas	MLGHE	62000	GEF	71200	Int. Consultants	0	0	0	0	0	
		62000	GEF	71300	Local Consultants	10,000	27,000	57,176	0	94,176	1
		62000	GEF	71400	Contractual Services - Individ	31,376	41,770	42,556	43,356	159,058	2
		62000	GEF	71600	Travel	10,500	9,900	16,900	16,900	54,200	3
		62000	GEF	72100	Contractual Services- Companies	276,400	319,000	102,123	112,000	809,523	4
		62000	GEF	72200	Equipment and furniture	91,700	19,000	75,500	67,500	253,700	5
		62000	GEF	72400	Communic & Audio Visual Equip	550	500	500	500	2,050	6
		62000	GEF	72500	Supplies	15,900	30,000	62,500	59,500	167,900	7
		62000	GEF	72600	Grant	0	0	380,000	411,634	791,634	8
		62000	GEF	72800	Information Technology Equipmt	3,000	0	3,000	0	6,000	9
		62000	GEF	74200	Audio Visual&Print Prod Costs	400	350	350	350	1,450	10
	62000	GEF	75700	Training, Workshops and Confer	53,000	100,400	31,400	31,400	216,200	11	
Total Outcome 1.1					492,826	547,920	772,005	743,140	2,555,891		
Outcome 1.2 Improved financial sustainability for terrestrial	MLGHE	62000	GEF	71200	Int. Consultants	0	0	0	0	0	
		62000	GEF	71300	Local Consultants	0	0	15,000	10,000	25,000	12
		62000	GEF	71400	Contractual Services - Individ	2,500	2,500	2,500	2,500	10,000	13
		62000	GEF	71600	Travel	0	0	2,000	2,000	4,000	14



and marine protected area systems		62000	GEF	72100	Contractual Services-Companies	242,000	80,000	0	0	322,000	15
		62000	GEF	72200	Equipment and furniture	0	0	4,000	0	4,000	16
		62000	GEF	72500	Supplies	0	0	8,000	8,000	16,000	16
		62000	GEF	72600	Grant	0	0	0	20,554	20,554	17
		62000	GEF	75700	Training, Workshops and Confer	10,000	10,000	0	0	20,000	18
	Total Outcome 1.2					254,500	92,500	31,500	43,054	421,554	
Total Outcome 1						747,326	640,420	803,505	786,194	2,977,445	
Outcome 2.1 Carbon stocks restored and enhanced in priority catchments	MLGHE	62000	GEF	71200	Int. Consultants	0	0	0	0	0	
		62000	GEF	71400	Contractual Services - Individ	1,500	1,500	1,500	1,500	6,000	19
		62000	GEF	71600	Travel	1,000	0	0	0	1,000	20
		62000	GEF	72100	Contractual Services-Companies	41,100	239,715	368,000	488,785	1,137,600	21
		62000	GEF	72500	Supplies	1,000	186,750	186,750	186,750	561,250	22
		62000	GEF	75700	Training, Workshops and Confer	2,000	0	0	0	2,000	23
	Total Outcome 2.1					46,600	427,965	556,250	677,035	1,707,850	
Outcome 2.2 Sustainable forest management achieved through innovative market-based schemes	MLGHE	62000	GEF	71200	Int. Consultants	18,500	18,500	0	0	37,000	24
		62000	GEF	71300	Local Consultants	5,000	5,000	0	0	10,000	24
		62000	GEF	71400	Contractual Services - Individ	15,938	21,135	21,528	21,928	80,529	25
		62000	GEF	71600	Travel	3,600	3,600	3,600	2,600	13,400	26
		62000	GEF	72100	Contractual Services-Companies	61,500	193,500	193,500	193,500	642,000	27
		62000	GEF	72200	Equipment and furniture	850	0	0	0	850	28
		62000	GEF	72400	Communic & Audio Visual Equip	2,200	1,450	450	150	4,250	29
		62000	GEF	72500	Supplies	4,150	3,700	2,700	0	10,550	30
		62000	GEF	72800	Information Technology Equipmt	1,500	0	1,500	0	3,000	31
		62000	GEF	74200	Audio Visual&Print Prod Costs	3,218	2,375	1,375	1,375	8,343	32
		62000	GEF	75700	Training, Workshops and Confer	29,897	32,400	19,400	14,400	96,097	33
	Total Outcome 2.2					146,353	281,660	244,053	233,953	906,019	

	Total Outcome 2					192,953	709,625	800,303	910,988	2,613,869	
Outcome 3.1 Integrated catchment management plans covering conservation of biodiversity, forests, land and water formulated & implemented in priority sites	MLGHE	62000	GEF	71200	Int. Consultants	17,000	0	0	0	17,000	34
		62000	GEF	71300	Local Consultants	50,000	32,500	0	0	82,500	35
		62000	GEF	71400	Contractual Services - Individ	1,500	1,500	1,500	1,500	6,000	36
		62000	GEF	71600	Travel	13,400	7,400	0	0	20,800	37
		62000	GEF	72100	Contractual Services- Companies	9,000	56,042	39,000	37,500	141,542	38
		62000	GEF	72200	Equipment and Furniture	12,900	38,400	39,000	37,500	127,800	39
		62000	GEF	72400	Communic & Audio Visual Equip	1,000	0	0	0	1,000	40
		62000	GEF	72500	Supplies	5,000	35,750	39,000	37,500	117,250	39
		62000	GEF	72800	Information Technology Equipmt	5,000	3,000	0	0	8,000	41
		62000	GEF	74200	Audio Visual&Print Prod Costs	5,250	500	0	0	5,750	42
	62000	GEF	75700	Training, Workshops and Confer	32,300	54,200	56,600	56,600	199,700	43	
Total Outcome 3.1					152,350	229,292	175,100	170,600	727,342		
Outcome 3.2 Strengthened governance for integrated natural resources (land, water, biodiversity, forests) management	MLGHE	62000	GEF	71200	Int. Consultants	0	0	0	0	0	
		62000	GEF	71300	Local Consultants	0	0	25,000	0	25,000	44
		62000	GEF	71400	Contractual Services - Individ	1,500	1,500	1,500	1,500	6,000	45
		62000	GEF	71600	Travel	6,600	7,000	6,000	6,000	25,600	46
		62000	GEF	72200	Equipment and Furniture	0	0	23,000	1,300	24,300	47
		62000	GEF	72400	Communic & Audio Visual Equip	200	0	1,000	1,000	2,200	48
		62000	GEF	72500	Supplies	2,550	4,000	13,000	10,000	29,550	49
		62000	GEF	72800	Information Technology Equipmt	0	0	0	9,000	9,000	50
		62000	GEF	74200	Audio Visual&Print Prod Costs	1,000	0	0	0	1,000	51
	62000	GEF	75700	Training, Workshops and Confer	73,369	84,519	78,519	65,519	301,926	52	
Total Outcome 3.2					85,219	97,019	148,019	94,319	424,576		
Total Outcome 3					237,569	326,311	323,119	264,919	1,151,918		
Outcome 4.1 Improved data & information	MLGHE	62000	GEF	71200	Int. Consultants	0	0	0	0	0	
		62000	GEF	71300	Local Consultants	9,000	0	0	0	9,000	53
		62000	GEF	71400	Contractual Services -	19,250	19,635	20,028	20,428	79,341	54

systems on biodiversity; land, forests, coastal & marine management; climate change and best practices					Individ						
	62000	GEF	71600		Travel	3,300	7,800	18,100	22,400	51,600	55
	62000	GEF	72100		Contractual Services-Companies	21,500	8,200	8,200	8,200	46,100	56
	62000	GEF	72200		Equipment and Furniture	43,316	1,000	0	1,000	45,316	57
	62000	GEF	72400		Communic & Audio Visual Equip	500	1,500	2,000	2,000	6,000	58
	62000	GEF	72500		Supplies	950	3,500	3,000	3,000	10,450	59
	62000	GEF	72800		Information Technology Equipmt	3,000	0	4,500	0	7,500	60
	62000	GEF	74200		Audio Visual&Print Prod Costs	818	3,225	3,225	4,225	11,493	61
	62000	GEF	75700		Training, Workshops and Confer	5,800	800	800	800	8,200	62
	Total Outcome 4.1					107,434	45,660	59,853	62,053	275,000	
Project Management	UNDP	62000	GEF	71200	Int. Consultants	0	0	0	0	0	
		62000	GEF	71400	Contractual Services - Individ	36,460	37,400	38,367	39,355	151,582	63
		62000	GEF	71600	Travel	5,000	6,000	6,000	6,000	23,000	64
		62000	GEF	72100	Contractual Services-Companies	4,500	24,500	4,500	28,500	62,000	65
		62000	GEF	72200	Equipment and Furniture	46,000	0	0	0	46,000	66
		62000	GEF	72400	Communic & Audio Visual Equip	1,200	1,200	1,200	1,200	4,800	67
		62000	GEF	72500	Supplies	1,000	1,000	1,000	1,000	4,000	67
		62000	GEF	72800	Information Technology Equipmt	4,500	0	4,500	0	9,000	68
		62000	GEF	74200	Audio Visual&Print Prod Costs	2,500	1,500	1,500	1,500	7,000	67
		62000	GEF	74500	Miscellaneous (DPC)	9,000	2,000	1,000	1,000	13,000	69
	62000	GEF	75700	Training, Workshops and Confer	17,500	10,500	10,500	10,500	49,000	70	
	Total Project Management					127,660	84,100	68,567	89,055	369,382	
PROJECT TOTAL					1,412,942	1,806,116	2,055,347	2,113,209	7,387,614		

**Budget notes:**

1	Local consultants to assist in development of protected area management plans in priority catchments (Sovi Basin - Waidina, Upper Tuva, Tunulua, Vunivia)
2	R2R communities catchment officers for Western Viti Levu and Vanua Levu (Starting annual salary of USD 19,250 indexed at 2% per year; full time appointments to commence in Q2 of Year 1); R2R Team Manager's technical inputs (USD 3000 per annum) into component 1.2
3	Travel costs for R2R communities catchment officers (fuel and maintenance costs for 4WD)
4	LMMA/MPA planning / mapping and reconfiguration in connected marine habitats – tender for conservation NGO or private company (Ba USD 32,500, Rewa USD 22,000, Labasa USD 32,500, Tunulua USD 20,000 and Vunivia USD 15,000); Comprehensive biodiversity assessments of Upper Tuva (USD 113,000) and and Tunulua (USD 160,000) by USP IAS; Specific upgrading village R2R Projects - selected livelihood projects and activities to promote R2R biodiversity conservation goals (USD 177,523) and other relevant tender/services for protected area (USD237,000)
5	4WD vehicles (x2) for R2R communities catchment officers (USD 71,700); Equipment for implementation of LMMA and protected area management plans (USD 123,000) and equipment for village upgrading projects and implementation of LMMA/MPA plans (USD 59,000)
6	Communications budgets for R2R communities catchment officers (USD 1,200) and village upgrading projects that promote biodiversity conservation (USD 800)
7	Supplies budget for communities catchment officers (USD 900), Terrestrial PA management planning and implementation (USD 82,500) and village upgrading projects (USD 84,000) that promote biodiversity conservation
8	Initial contribution grants to sustainable finance of new forest PAs through payment into Sovi Basin Trust Fund for Tuva (USD 111,862), Tunulua (USD 378,608) and Vunivia (USD 301,164) forest PAs (equating to USD 86 per ha)
9	Computers and peripherals for R2R communities catchment officers
10	Printing budget for awareness and other activities of R2R communities catchment officers
11	Training, meeting and workshop expenses for planning, meetings with resource owners and negotiations for development of LMMAs and PAs in the six catchments and connected marine habitats (Ba LMMA USD 2,000; Rewa LMMAs USD 4,000, Labasa LMMA USD 2,000, Tunulua LMMA USD 2,000, Vunivia LMMA USD 2,000; Tuva Forest PA USD 10,000, Tunulua Forest PA USD 16,000 and Vunivia Forest PA USD 7,000) ; Ba and Tuva freshwater qoliqolis - inventory and follow-up by DoFish (USD 26,000)
12	Local consultant hired for Tuva LMMA/MPA finance mechanism
13	R2R Team Manager's technical inputs into component 1.2
14	Travel budget for Tuva LMMA/MPA finance mechanism
15	Waidina - Ecosystem Services study (USD 26,000); Rewa Delta - Ecosystem services study (USD 26,000); Ba, Labasa, Tuva, Vunivia mangrove carbon assessments and local fisheries values (as part of valuation of ES USD 160,000); Labasa, Tuva, Vunivia LMMAs - TESSA ES Valuation (USD 33,000) ; Tunulua, Tuva, Vunivia Terrestrial PAs TESSA ES

	Valuation (USD 39,000); Review of user fee systems for LMMAs in Fiji (USD 38,000) – contracted services to local environment NGOs/universities.
<b>16</b>	Equipment and supplies for Tuva LMMA/MPA
<b>17</b>	Start-up contribution towards Tuva LMMA/MPA finance mechanism
<b>18</b>	Workshops and meeting expenses for Ba, Labasa, Tuva, Vunivia mangrove carbon assessments and local fisheries values (as part of valuation of ES)
<b>19</b>	R2R Team Manager's technical inputs into component 2.1
<b>20</b>	Travel budget for Rewa delta mangrove planting plan
<b>21</b>	Contracts for reforestation in the six catchments - native tree seed collections for reforestation plantings (USD 22,500 total in Years 1,2,3); identify and mapping priority areas for reforestation (USD 33,600 in Year 1); site preparation and field planting of trees (@ USD 205/ha); mangrove replanting (@ USD 547/ha) ; maintenance of tree plantings (@USD 287/ha in Years 3 & 4 ) ; native forest restoration and rehabilitation (@USD 660/ha) ;
<b>22</b>	Production of seedlings of native tree species for reforestation in the six catchments (625 seedlings per ha @ US 72 c per seedling)
<b>23</b>	Training workshop for Rewa delta mangrove planting plan
<b>24</b>	International (or local) consultant to plan and develop FSC certification activities for Fiji Pine Group (Fiji Pine Ltd and FFI) and Fiji Hardwood Corporation
<b>25</b>	R2R Forestry Officer based in Forestry Department (on secondment or new appointment) and R2R Team Manager's technical inputs into component 2.2
<b>26</b>	Travel budget for R2R Forestry officer (US 50 per week for fuel) and for liaison activities between R2R project and forest industry (FPL,FFI and FHC) to develop FSC certifications (US 3,000)
<b>27</b>	Forest carbon assessments/MRV activities by Department of Forestry including National forest carbon inventory (USD 126,000), research samples plots for forest carbon assessments (USD 408,000; and assisted natural regeneration projects in R2R priority catchments (USD 210,000 in Ba, Labasa and Tuva catchments)
<b>28</b>	R2R Forestry Officer – establishment equipment budget in year 1
<b>29</b>	Communications budget for forest policy review and law enactment, including R2R Forestry Officer based in Forestry Department
<b>30</b>	Liaison between R2R and FPL to achieve FSC certification and communications of R2R Forestry Officer based in Forestry Department
<b>31</b>	Computer for R2R Forestry Officer
<b>32</b>	Printing costs associated with forest policy review and law enactment; work of R2R Forestry Officer and education & awareness campaigns to reduce forest fires
<b>33</b>	Training workshops and meetings related to FSC certification (USD 15,000); forest policy review and law enactment (USD 10,100); REDD+ training for Government personnel and community leaders (USD 13,197); education and awareness to reduce burning and forest fires (USD 57,600 in Ba, Labasa and Tuva catchments)

<b>34</b>	International consultant to document catchment management planning process for Fiji
<b>35</b>	Local consultant inputs into development of catchment management plans for Ba, Labasa, Tuva and Vunivia
<b>36</b>	R2R Team Manager's technical inputs into component 3.1
<b>37</b>	Travel costs associated with providing catchment information to stakeholders; consultations to develop and revise catchment management plans for Ba, Labasa, Tuva and Vunivia
<b>38</b>	Contracts for LUP to review biophysical data for R2R catchments; CMC local awareness and priority actions for Ba, Labasa, Tuva, Rewa/Waidina and Vunivia.
<b>39</b>	Equipment and supplies for priority actions identified by the respective CMCs for improved catchment management for Ba, Labasa, Tuva and Rewa/Waidina
<b>40</b>	Communication costs for LUP review of biophysical data for R2R catchments
<b>41</b>	Computers for TAB, and the R2R CMCs for Ba, Labasa, Tuva and Rewa/Waidina
<b>42</b>	Printing of LUP biophysical data and maps for R2R catchments and survey information for stakeholders; CMPs for Ba, Labasa, Tuva and Vunivia
<b>43</b>	Training workshops and meetings for LUP review (US 4,500); consultations and feedback of survey information to stakeholders in all R2R catchments (USD 12,000); documentation of catchment management planning process (USD 4,000) consultations as part of CMP development process for Ba, Labasa, Tuva and Vunivia (USD 19,500); CMC meetings (USD 15,200); priority capacity building and training activities identified by the respective CMCs for improved catchment management for Ba, Labasa, Tuva, Rewa/Waidina (USD 140,100)
<b>44</b>	Local consultants – curriculum development on integrated natural resources management for new training programs at Nadave Training College
<b>45</b>	R2R Team Manager's technical inputs into component 3.2
<b>46</b>	Travel budget related to development of Integrated Natural Resources and Catchment Management Policy and to enable ongoing community involvement in evolution and implementation of catchment management plans
<b>47</b>	Equipment to assist with mainstreaming of CMCs into Divisional work programs and for new Nadave Training College training programs
<b>48</b>	Communications budget for Integrated Natural Resources and Catchment Management Policy Development and for mainstreaming CMCs into Divisional work programs
<b>49</b>	Supplies required for ongoing community involvement in catchment management plans and development of Integrated Natural Resources and Catchment Management Policy
<b>50</b>	Computers to assist with mainstreaming of CMCs into Divisional work programs
<b>51</b>	Printing costs related to development of Integrated Natural Resources and Catchment Management Policy

<b>52</b>	Budget to enable Fiji representatives to participate in the Regional R2R project's training programs (USD 85,557); local leadership training and capacity building (USD 51,000); ongoing community involvement in catchment management plans (USD 58,350); and training of R2R communities and linking them to Government agencies and NGOs (USD 62,000).
<b>53</b>	Local consultant to develop the communications strategy for Fiji R2R project
<b>54</b>	R2R Knowledge Management/Communications Officer based in PMU/DoE
<b>55</b>	Travel budget for KM officer (USD 50 per week for fuel and vehicle maintenance) , KM advisory committee (USD 400 for meetings ) and R2R travel as part of liaison with local media (USD 4,800); including stakeholder visits to R2R best practice sites (USD 36,000)
<b>56</b>	Contracts to develop and IT support for DoE/R2R website (USD 24,100), R2R publications and public awareness (USD 22,000).
<b>57</b>	KM Website server and equipment for R2R KM officer
<b>58</b>	Communications budget for KM officer, KM advisory committee and local media liaison
<b>59</b>	Supplies for KM server, KM officer and R2R publications and public awareness
<b>60</b>	Computer and ancillary equipment for KM officer and R2R publications.
<b>61</b>	Printing budget for KM component
<b>62</b>	Training budget for R2R KM officer (USD 5,000), and meetings of KM advisory committee (USD 3,200)
<b>63</b>	Salaries for PMU staff including R2RProject Team Manager (managerial component starting at USD 10,460 per annum and increasing by 2% per annum), Finance/Accounts Management Officer and Project Support (M&E) Officer (starting salary of USD 13,000 per annum increasing by 2% annum)
<b>64</b>	Travel budget for PMU staff
<b>65</b>	Budget for annual project audits (USD 4,500 per annum), mid-term evaluation (USD 20,000) and final evaluation (USD 24,000)
<b>66</b>	4WD vehicle for R2R Team Manager (USD 35,000) and office fitout/furniture (USD 11,000)
<b>67</b>	Communications, supplies and printing budgets for R2R Project Management Unit
<b>68</b>	Computers and software for R2R Project Management Unit
<b>69</b>	Direct Project Service costs (DPC): Estimated costs of DPS requested by the implementing partners to UNDP for executing services as indicated in TBWP for recruitment of consultants and procuring equipments. The Letter of Agreements (LOA) between the Implementing partners and UNDP is under process, expect to be completed within 3 months after CEO Endorsement submission

<b>70</b>	Budget for R2R project inception meeting (USD 7,500), annual project meetings (@ USD 5000 each), PSC and thematic working group meetings (@ USD 5,000 per year)
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**Table 15. Summary of funds**

Summary of Funds					
Source	Year 1	Year 2	Year 3	Year 4	Total
GEF	1,412,942	1,806,116	2,055,347	2,113,209	<b>7,387,614</b>
Government (in-kind)	6,678,450	6,678,453	6,678,450	6,678,450	<b>26,713,803</b>
Non-Government Partners	467,052	467,053	467,052	467,052	<b>1,868,209</b>
Private Sector	302,500	302,500	302,500	302,500	<b>1,210,000</b>
13UNDP (in-kind)	112,500	112,500	112,500	112,500	<b>450,000</b>
<b>Total</b>	<b>8,973,444</b>	<b>9,366,622</b>	<b>9,615,849</b>	<b>9,673,711</b>	<b>37,629,626</b>



## **SECTION IV:      ADDITIONAL INFORMATION**

### **LIST OF ANNEXES**

- ANNEX 1.      PROFILE OF THE SIX PRIORITY R2R CATCHMENTS
- ANNEX 2.      CRITICAL PHYSICAL FEATURES OF THE SIX CATCHMENTS AND  
IMPLICATIONS FOR R2R
- ANNEX 3.      MAIN THREATS, ROOT CAUSES AND IMPACTS ON TRADITIONAL WAY OF  
LIFE & CULTURE; LIVELIHOODS/ ECONOMY/ HUMAN HEALTH AND  
ECOSYSTEMS
- ANNEX 4.      STAKEHOLDER MAPPING AND ANALYSIS FOR FIJI R2R PROJECT
- ANNEX 5.      PROJECT IMPLEMENTATION SCHEDULE / GANTT CHART
- ANNEX 6.      JOB DESCRIPTIONS FOR R2R PROJECT STAFF
- ANNEX 7.      TERMS OF REFERENCE FOR KNOWLEDGE MANAGEMENT WORKING GROUP
- ANNEX 8.      GEF 5 TRACKING TOOL FOR BIODIVERSITY
- ANNEX 9.      GEF 5 TRACKING TOOL FOR LAND DEGRADATION
- ANNEX 10.     GEF 5 TRACKING TOOL FOR SUSTAINABLE FOREST MANAGEMENT/REDD+
- ANNEX 11.     GEF 5 TRACKING TOOL FOR CLIMATE CHANGE MITIGATION
- ANNEX 12.     GEF 5 TRACKING TOOL FOR INTERNATIONAL WATERS
- ANNEX 13:     ENVIRONMENTAL AND SOCIAL SCREENING PROCEDURE (ESSP)
- ANNEX 14.     BIBLIOGRAPHY