Ministry of Forestry

Republic of FIJI

Forest Carbon Partnership Facility (FCPF)
Carbon Fund

Emission Reductions Program Document (ER-PD)

ER Program Name and Country: FIJI
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ACRONYMS AND ABBREVIATIONS

AD	Activity Data
AE	Allometric Equation
AF	Afforestation
AGB	Above Ground Biomass
BAU	Business as Usual (scenario)
BGB	Below Ground Biomass
BSM	Benefit Sharing Mechanism
BSP	Benefit Sharing Plan
CDM	Clean Development Mechanism
CF	Carbon Fund
CFM	Community Forest Management
COC	Chain of Custody
COP23	Conference of the Parties 23rd meeting
CRA	Carbon REDD+ Agreements
CSIRO	Australian government national science agency
CSO	Civil Society Organization
DBH	Diameter at Breast Height
DF	Deforestation
DoDD	Drivers of Deforestation and Degradation
MOL/LAND BANK	Department of Lands and Mineral Resources
EBA	Endemic Bird Area
ECAL	Environment and Climate Adaptation Levy
EF	Emission Factor
EMA	Environment Management Act
EMP	Environmental Management Plan
ER	Emission Reduction
ER-P	Emission Reduction Program (area)
ER-PD	Emissions Reduction Program Document
ER-PIN	Emissions Reduction Program Identification Note
ER-PA	Emission Reduction Payment Agreement
ERR	Economic Rate of Return
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental Social Management Framework
FBoS	Fiji Bureau of Statistics
FCM	Forest Cover Map
FCPF	Forest Carbon Partnership Facility
FD	Forest Degradation
FE	Forest Enhancement
FFIS	Fiji Forest Information System
FGRM	Feedback grievance and reporting mechanism
FHCL	Fiji Hardwood Corporation Limited
FLA	Forest Land Allocation
FREL	Forest Reference Emission Level
FRO	Fiji REDD+ Office
FSC	Forest Stewardship Council
GAP	Gender Action Plan

GBP	Green Bond Principles (2017) published by International Capital Markets Association (ICMA)
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GHGI	Greenhouse Gases Inventory
GIZ	Gesellschaft für Internationale Zusammenarbeit
GOF	Government of the Republic of Fiji Islands
HCV	High Conservation Value (forest)
HHs/hhs	House Holds
IBA	Important Bird Area
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
ILUP	Integrated District Land Use Plan
iTaukei	The indigenous communities of Fiji
KBA	Key Biodiversity Areas
KP	Kyoto Protocol
LUMP	Land Use Master Plan
LUP	Land Use Plan
LUR	Land Use Right
M&E	Monitoring and Evaluation
Mataqali	A mataqali is one clan made up of several Tokatoka (a family unit), several Mataqali will make up the larger tribe or Yavusa
MB	Management Board
MMR	Measurement, Monitoring and Reporting
MOA	Ministry of Agriculture
MOE	Ministry of Economy
MOF	Ministry of Forestry
MOU	Memorandum of Understanding
MRV	Measurement, Reporting and Verification
MSME	Micro, Small and Medium Enterprises
MTR	Mid Term Report
MUF Closed	Multiple Use Forest Closed canopy, forest crown canopy cover > 40% is termed closed forest
MUF Open	Multiple Use Forest Open canopy forest crown cover is 10% to 40%
NCB	Non-Carbon Benefits
NDC	Nationally Determined Contributions
NDP	5 year and 20-year National Development Plan
NEC	National Environment Council
NFI	National Forest Inventory
NGO	Non-Government Organization
NPV	Net Present Value
NRS	National REDD+ Strategy
NTFP	Non-Timber Forest Products
ODA	Overseas Development Assistance
OP/ BP	Operational Policy / Bank Policy of the World Bank
PA	Protected Area
PAC	Protected Areas Committee
PES	Payment for Environment Services
PF	Process Framework
PLR	Policy Laws and Regulations
R	Root to Shoot ratio

REDD+ TWG-SG	REDD+ Technical Working Group-Safeguards
R-PP	Readiness-Preparation Proposal for the FCPF REDD readiness funding
RDF	Reforestation of degraded forest
RPF	Relocation Policy Framework
RL/REL	(Forest) Reference Level/Reference Emission Level
RWE	Round-wood Equivalent volume of timber
SD	Standard Deviation
SESA	Strategic Environmental and Social Assessment
SFM	Sustainable Forest Management
SNF	Stable Non-Forest
SOC	Soil Organic Carbon
SOE	State Owned Enterprise
SPC	Pacific Communities
SPWP	Secondary Processed (or value-added) Wood Products
STDEV	Standard Deviation
tC	Tonne of Carbon
TCCRE	Typology of Climate Change Response Expenditure
tCO_2e	Tonne of Carbon dioxide equivalent
TEV	Total Economic Value
Tikina	District
TLTB	iTaukei Land Trust Board
TORs	Terms of Reference
TWG	Technical Working Group
UNESCO	The United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
USP	University of the South Pacific
WB	World Bank
WD	Wood Density
YMST	Yaubula Management Support Teams
	Weights and Measures m = meters; ha = hectares; Mha = million hectares $MtCO_2e$ = million tonne of carbon dioxide equivalent tCO_2e = tonne of carbon dioxide equivalent
	Currency M = million; Currency Unit = US$ Dollar USD1 = Fiji Dollar FJD 2.08 GW = gigawatt; kWh =Kilowatt-hour; TWH= terawatt –hour

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EXECUTIVE SUMMARY

Republic of Fiji is an oceanic small island state made up of an archipelago of 332 islands in the South Pacific Ocean of which 100 are inhabited.

The communities in Fiji are highly vulnerable to the impacts of climate change and these impacts are projected to further intensify under the anticipated global warming trajectory and impacts which poses a threat to Fiji's sustainable growth; placing large economic, social and physical stress on local communities and ecosystems. Urgent actions are needed to strengthen the resilience of communities against the impacts brought about by climate change. Given Fiji's small island landscape, it is essential that impacts of climate action are maximised by ensuring that mitigation actions and initiative will also result in adaptation co-benefits. Synergies need to be created between mitigation and adaptation activities. Fiji's national plans and strategies emphasise the need to embed climate change adaptation and resilience initiatives in all national and sectoral plans and strategies. The National Adaptation Plan Framework refers to the REDD+ Policy reflecting the dual role REDD+ plays – both in climate change mitigation and adaptation. Fiji's ER Program is designed to maximise climate co-benefits and integrate initiatives that address vulnerabilities of local communities and contribute to the effort of building a more resilient nation.

The ER program of the Republic of Fiji Islands will focus on the islands of Viti Levu, Vanua Levu and Taveuni with an area totalling about 1,685,742 ha (about 90% of Fiji) of critical terrestrial biodiversity. The ER-P accounting area has a population of approximately 734,307 people (86% of the total population). The islands are generally hilly, and the population is often concentrated on coastal plains and undulating rolling hills of peri-urban areas.

ER program sites have been selected through stakeholder participatory meetings and validated by the REDD+ Steering Committee. There was unanimous agreement to target existing forest area and to select 20 districts with areas at high risk of forest loss and degradation; areas with large communities/settlements at the forest edge; area with high poverty and known biodiversity hotspots. A representation of 20 districts in the ER-P accounting area is outlined in Figure 4-4. The 20 districts in the ER-P accounting area have been selected for specific interventions however this does not limit areas outside the priority districts. All areas that are part of the accounting area may be included in the ER-P activities. All participants in the ER-P activities are expected to register with the MOF as the focal point for REDD+ in Fiji.

Drivers and underlying causes of deforestation and forest degradation

The drivers of deforestation and forest degradation vary between the three main islands of the ER-P accounting area. Given the results of the assessment in Fiji's ER-PIN, Study on Drivers of Deforestation and Forest Degradation and R-Package, the main drivers identified include forest conversion to agriculture; traditional use of forests; poorly planned infrastructure development; conventional logging; natural disasters; invasive species and mining.

Fiji is a developing country with a large subsistence agriculture sector. Fast pace of socio-economic progress has resulted in unplanned infrastructure development which coupled with high demand for agriculture produce have exacerbated impacts of deforestation and forest degradation.

The ER-P aims to address drivers associated with poorly planned infrastructure development, conventional logging and conversion of forest land to agriculture. Poor planning of infrastructure development is acknowledged in many policies including the the 5-Year & 20-Year National Development Plan: Transforming Fiji, Green Growth Framework, Rural Land Use Policy, and Fiji Forest Policy. The ER-P will address the challenge of unplanned infrastructure development through the development and implementation of Integrated Land Use Planning (ILUP) to allocate resources and identify areas that should remain forests at district level. Wide Stakeholder consultation at district level will ensure cross sector discussions and agreement on critical drivers of deforestation and forest degradation at local level. The Integrated Land Use Plan will identify and address drivers of deforestation and forest degradation at district level and identify zones that will be managed under sustainable forest management, sustainable agriculture production as well as other management zones such as water catchment and road networks. Zonation of management areas at district level will ensure that the drivers of deforestation and forest degradation are addressed at local level. Details of drivers are presented in the Section 4.1 and a summary of all drivers of deforestation and forest degradation is outlined in Annex 4-1.

Barriers to implementation of REDD+

The barriers to achieving emission reductions and removal in the accounting area are discussed in Section 4.2 which considers policies and governance; focus groups or stakeholders and how they interact to contribute to forest loss and degradation; consideration of land use and management as well as a discussion on capacity of key institutions to overcome the barriers and the need to consolidate efforts and mainstream ER-P across all sectors in Fiji is discussed.

Despite presence of strong policies, lack of intersectoral coordination continues to challenge sectoral collaboration and mainstreaming of climate adaptation measures is needed to overcome barriers to the implementation of REDD+ in Fiji. Inherent in Fiji's social structures are unwritten cultural norms, such as deference to the older generation in decision-making processes, which do not preclude individual right to speak and contribute to discourse on key issues. Although culture in Fiji is patriarchal in nature, women have strong influence in the home and collectively have the capability to influence decisions at sub regional and national level.

Fiji's strong political commitment to REDD+

Strong political commitment to the national REDD+ programme has been in place since the initiation of the programme almost 10 years ago and reflected in the annual government budget provisions to support readiness efforts and to establish the REDD+ Unit within the Ministry of Forestry. The ER-P supports the national vision of sustainable management of forest resources and provides direction to the MOF in implementation of REDD+ strategy.
The national REDD+ programme and activities of ER Program are important components of recent national plans and strategies, most of which are forward looking plans. These include the 5-year and 20-year National Development Plan (NDP) 2017-2036; Low Emission Development Strategy (LEDS); enhanced NDC (to be submitted in 2020); the new National Climate Change Policy (2018-2030). In addition, Fiji's current efforts to include emission reduction commitments for agriculture and forestry in its NDCs demonstrates a very high-level of political support for ER-P actions given the reporting requirements under the Paris Agreement. Coherent and transparent carbon accounting for the NDC, LED and REDD+, will be ensured as the ER Program will help strengthen the monitoring and reporting processes and capabilities of the forest sector.

ER Program design

Fiji's National Development Plan (NDP) 2017-2036 presents a vision to transform Fiji, to realise its full potential. The NDP recognises the need for inclusive socio-economic development based on multisectoral collaboration to find solutions to climate change, environment protection and green growth. The design of the ER-P activities embraces the above vision for the Forest sector, which translates to the goal of pursuing sustainable development and management of Fiji's forest to realize the full potential of the forest sector through reduction in deforestation and forest degradation, promoting sustainable forest management, conservation, and afforestation and reforestation to contribute to climate mitigation while meeting the demands of timber and non-timber forest products; maintenance of ecosystem services and an increase in the resilience of local communities to the impacts of climate change.

Solutions to drivers of deforestation and forest degradation need to address barriers to REDD+ in Fiji and include development of district integrated land use plan, sustainable management, enhancement of forest resources and their conservation. The theory of change assumes that in addressing critical underlying causes of deforestation and forest degradation, the ER-P will strengthen enabling conditions for emissions reduction, and improve forest information systems, measurement, monitoring and reporting. Implementation of REDD+ activities (sustainable forest management, carbon enhancement, agroforestry and alternative livelihood as well as forest conservation) will result in improved coordination across sectors, enabling the realisation of Integrated Rural Development Framework. Cross sectoral coordination will strengthen sustainable management of forests and encourage private-public sector participation supporting growth of the forest sector. At the same time, efficient program management, reporting and verification of emissions reduction would enhance technical capability of the MOF.

The approach and design of the ER program described above is reflected in the different components of the ER-P. Component 1 focuses on enabling activities for Component 2. Activities will focus on key

drivers and underlying causes of forest loss and barriers to SFM, forest conservation and enhancement of forest carbon stocks while Component 3 entails project monitoring and evaluation. Brief overview of all components is presented below:

- **Component 1: Strengthening Enabling Conditions for Emission Reductions (~USD 1.648 million)** *focuses on existing frameworks, rational resource allocation and community-based monitoring systems aligned to local governance structures of the Ministry of Forestry, Ministry of Rural Development and the Ministry of iTaukei Affairs. Over the period of the ER-P;*
    - *20 Integrated District Land Use (IDLUP) and Management Plans (ILUMP) will be developed with support of 120 communities in an area of 510,319ha over 5 years;*
    - *40 community Integrated Land Use Plans developed through participatory engagement such as Open Standards for the Practice of Conservation and others;*
    - *Awareness raising on legal and regulatory framework to reach over 5000 people across 20 districts*
    - *Capacity building on forest law enforcement and governance at community level through 15 semi-formal training;*
    - *40 inter-agency training on law enforcement and forest governance.*

- **Component 2: Promoting integrated landscape management (~ USD 36.681 million) -** this is the core component of the ER-P and *aims to implement integrated land use plans at district level; support reduced impact logging, advocate sustainable management of forests in large tracts of forest, and adhere to the FFHCOP over 8,500ha over 5 years. The component also aims to support restoration of degraded lands through afforestation and reforestation and to promote Fiji Pine Ltd. managed plantation forestry activities in 2500ha per year (1,219ha above BAU) for five years and Fiji Hardwood Corp. Ltd. managed plantation activities in 478ha above BAU for 3 years (2020-2022). At the same time community-based afforestation and reforestation activities are proposed in support of the Govt. initiative of 1million tree a year where carbon enhancement planting is expected to cover an estimated 5,750ha by the end of 2024. Activities promoting agroforestry and alternative livelihoods to reduce pressure on forest resource/habitats will also be promoted. Agroforestry will focus on restoration of riparian zones estimated at 5,000ha over 5 years and shade grown agriculture is proposed for implementation in 5,000 ha over 5-year period. A total area of 36,400 ha is proposed to be set aside as protected area by 2024, The ER program is expected to reduce 9,500ha of deforestation over 5 years of implementation.*

  From the implementation of ER programs over a five-year period of 2020-2024, the ex-ante reduced emissions and increased removals as a result of promoting integrated landscape management are **estimated at 3.5 million tCO_2e. This represents a 43% reduction in from the business as usual estimates of the forest reference level (FRL). After a set aside of buffer to account for uncertainty and reversal risk, the ER Programme is expected to produce 2.5 million ERs.** The results anticipated under different program sub-components are listed below.

Intervention	2.1 Sustainable Management of Native Forest	2.2 Afforestation / Reforestation	2.3 Community Planting	2.4 Agroforestry and alternative livelihoods	2.5 Forest Protection	Total
2020	28,147	80,030	52,079	74,058	246,858	**481,172**
2021	28,147	114,818	40,506	74,058	246,858	**504,387**
2022	28,147	185,980	28,933	74,058	493,717	**810,834**
2023	28,147	223,863	17,360	74,058	493,717	**837,144**
2024	28,147	287,281	5,787	74,058	493,717	**888,989**
Gross Total	**140,737**	**891,971**	**144,663**	**370,288**	**1,974,868**	**3,522,527**
Uncertainty	21,110	133,796	11,573	29,623	157,989	354,092
Buffer Allocation	24685	156,449	27,463	70,296	374,911	653,804
Net Total	**94,941**	**601,727**	**105,627**	**270,369**	**1,441,967**	**2,514,631**

The overall impact of Component 2 is anticipated to result in avoiding deforestation in 9,500 ha; enhancement of forest carbon stocks through afforestation and reforestation at community level in 11,750 ha and enhancement of forest carbon stocks involving plantations in 7,532 ha and reducing forest degradation forest degradation by implementing sustainable harvesting of native forests in 8,500 ha. Many of the ER-P activities are applicable to all the 20 districts where ILUPs are developed such that large districts have habitats from intact to degraded forest. In such areas (e.g. Tavua, Bua and other districts) more than one ER-P activity may apply at different scales. Further the large number of communities/villages in each district makes allocation of multiple components of the ER-P applicable in accordance to the ILUP.

COMPONENT 2	**2.1** **Forest Degradation – sustainable management of forest** (hectare)	**2.2** **Enhancement of Carbon Stocks (Plantations)** (hectare - planting increased)	**2.3** **Enhancement of Carbon Stocks (Community Planting**)	**2.4** **Enhancement of Carbon Stocks (Agroforestry**)	**2.5** **Forest Conservation (areas (ha) of deforestation avoided)**	**Total**
Area impacted over 5 years	8,500	7,532	5,750	6,000	9,500	37,282
Number of Province Involved	6	4	9	7	5	
Districts involved	8	7	11	20	6	
Number of communities involved	40	80	100	1000	12	

- **Component 3: Program Management and Emissions Monitoring (USD 4.117 million):** *will monitor implementation of ER program activities and report on their performance. This component will also support dissemination of key learnings from ER-P implementation. Key impacts of Component 3 include the implementation of the Gender Action Plan and implementation of the Environmental and Social Management Framework (ESMF).*

The ER-P accounting area covers approximately 90% of Fiji's landmass. Component 1 will impact a total of 510,319 ha equivalent to 31% of the accounting area, across 20 districts located in 9 Provinces. Component 2 is anticipated to impact 37,282 ha under various REDD+ activities.
Results chain assessment of strategies and activities indicates several direct and indirect impacts. Direct impacts include improved planning in natural resource allocation through Strategic Infrastructure Development and in alignment with the Integrated Rural Development Framework for avoidance of indiscriminate logging activities and a 16% reduction in reliance on native forest. Indirect impacts in terms of improved institutional arrangements and coordination are expected to contribute to the effectiveness of interventions.

Forest reference level

Forest reference level covers upland, lowland natural forests, softwood and hardwood plantation areas. It includes the carbon pools of above-ground biomass and below ground biomass; and greenhouse gases of CO_2, and CH_4 and N_2O.The activity data generated for the reference period of 2006-2016 was used to estimate the net forest reference level for the ER program which is estimated at 1,636,804 tCO_2e per year was estimated. The contributions of REDD+ activities – deforestation, forest degradation and enhancement of forest carbon stocks to the average annual forest reference level are presented in the table below:

Forest Reference Emission Level	Emission / Removal ($tCO_2e\ yr^{-1}$)	Lower Confidence Interval ($tCO_2e\ yr^{-1}$)	Upper Confidence Interval ($tCO_2e\ yr^{-1}$)
Deforestation	2,696,831	2,143,830	3,373,850
Forest Degradation	310,442	321,925	467,501
Enhancement of Carbon Stocks	-1,370,469	-960,855	-1,791,358
Net FRL	**1,636,804**	**953,458**	**2,444,030**

Measurement, monitoring and reporting

The MOF, through its Management Services Division (MSD), is responsible for measurement, monitoring and reporting activities using the National Forest Monitoring System with an integrated approach to data capture and to enable consistent monitoring and reporting of emissions and removals over the program period. The monitoring approach also considers nesting of the pre-existing REDD+ projects and a nesting guideline is planned to be developed by MOF in consultation with REDD+ projects.

Nesting of REDD+ projects

Two REDD+ projects were established during ER program reference period (2006 – 2016). These include - Drawa Rainforest Conservation Project. The project focuses on improvement of forest management to conserve mature indigenous rainforest through avoiding forest degradation, by means of legal protection of forest. The second project, Nakauvadra Community Based Reforestation project demonstrates afforestation/reforestation on degraded grasslands.

The Drawa project has completed validation and verification under the Plan Vivo standard and issued credits during 2018. Government of Fiji is expected to approve the nesting guidelines during 2020. Until such time the Drawa project complies with the nesting guidelines of Government of Fiji, it is proposed to exclude the Drawa Project Area from the ER program accounting area to avoid double counting. This project is expected to operate independently until the MOF approves nesting guidelines for REDD+ projects. Therefore, Drawa project has been excluded from the ER program accounting area for the program period.

The Nakauvadra Community Based Reforestation project is an ecosystems services project financially supported by Fiji Water in partnership with Conservation International. The Project has been validated against the Climate Community and Biodiversity Standard. The Nakauvadra project under the CCB Program does not result in the issuance of tradable emission reductions as the CCB Standard cannot to be used for claiming quantified GHG emissions reductions or removals to be used as offsets. Given the above reasons, this project is not relevant for accounting and reporting of emission reductions in the national registry and discussions on nesting of REDD+ projects until and unless it intends to trade emission reductions from its project site.

Social and environmental issues and safeguards

Several program safeguards instruments are under preparation. An Environmental and Social Management Framework (ESMF) is currently under review and covers the Resettlement Policy Framework (RPF) aimed at addressing potential involuntary resettlement that may occur during the program. The Gender Action Plan (GAP) focuses on promoting women participation in the program, share in the benefits, and promote gender equality.

The environmental concerns mostly relate to unsustainable logging, plantation and agriculture practices. Unsustainable agricultural practices are a wider problem as this results in deforestation and degradation. The potential restrictions of ER-P activities on resource access are addressed through the ESMF as well as the safeguards measures embedded in the Safeguard Information System (SIS).

The traditional social structure in Fiji facilitates dispute resolution at local level through informal and traditional networks. The recognition of customary land tenure rights for agricultural and forest land is a major enabler for REDD+ implementation. The ER-P activities build on traditional iTaukei land tenure.

Benefit sharing mechanism

The recognition of customary land in Fiji has led to existing robust legal mechanism to facilitate the distribution of benefits from leasing or exploitation of land resources. The five types of benefit sharing models - iTaukei Land Trust Board, Land Bank, Charitable Trust, Private Trust Deeds and Company models with legal frameworks and operational in the country have been analysed.

Although the Benefit Sharing Plan is yet to be developed, recommendations from the recent study on Benefit Sharing Mechanism (BSM) for REDD+ indicates that key points of departure from existing BSM models is associated with the performance-based payment system of the ER-P as opposed to lease benefits which are conditions of legally binding contractual arrangements. Further the study on the BSM has set clear guidelines on stakeholder perceptions on all elements of benefit sharing including objectives and principles; identification of beneficiaries; allocation between beneficiary groups; eligibility criteria for beneficiaries; conditionality of benefits; delivery of benefits; disclosure, communication and dissemination of information; monitoring of benefit sharing mechanism and feedback, grievance redress mechanism. Each element is discussed and will be refined and consolidated with the Benefit Sharing Plan.

Key beneficiaries of the ER program include

- **Owners of the** land (indigenous land, state land or private owned land);
- **Community trust** which encourages collaboration among all users of forest resources and actors in ER-P activities to form an entity aligned to the existing benefit sharing mechanism. For iTaukei land, the community trust recognises communal use of natural resources and binds all users into an entity such as a Trust, cooperative or corporate body of choice;
- **Small holder farmers** who have Agriculture lease from TLTB/ Ministry of Lands/ Land Bank.

All beneficiaries must register under the ER-P program. Registration is described in Section 17 where beneficiaries must be entre their interests with the MOF to be eligible for REDD+ benefits. Registration with the MOF will take the form of REDD+ License which is conditional upon the issue of land lease by either TLTB or the Ministry of Lands/Land Bank. The two-step process of lease and license will support creation of carbon titles for trade through lease conditions and allow technical oversight and monitoring of all ER-P activities by the MOF through the issue ER License.

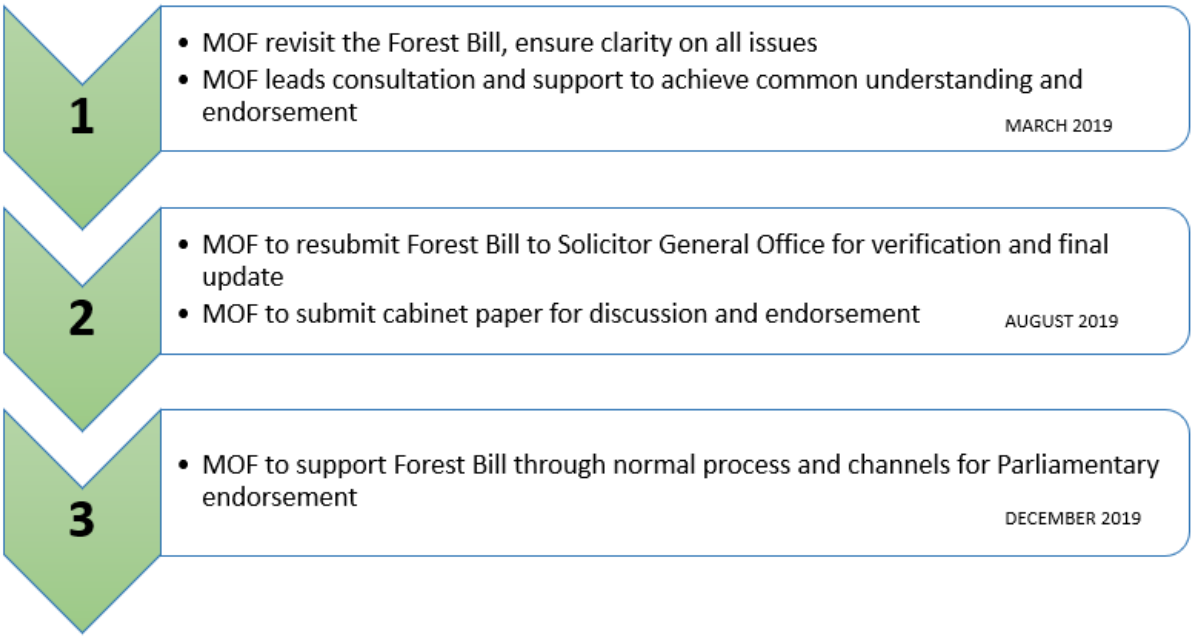
In the context of benefit sharing arrangement, forest carbon right is considered in terms of rights to benefit from the trade of emissions reduction and removal (ERR) at national level, noting that the Government of Fiji, through the Ministry of Economy, has entered into a binding agreement, with the International Bank for Reconstruction and Development (IBRD) acting as the trustee of the Forest Carbon Partnership Facility (FCPF).

Transfer of title to emission reductions

As carbon right is an interest linked to the land, it is expected to be part of the lease for transfer, surrender or extension and the details of this is expected to be part of the lease conditions in the form of the "*carbon title*". The draft Forest Bill will make provisions for:

- Forest Carbon Trading, which registers and allows the trading of the carbon title under the Emission Reduction Program Agreement;
- Emission Reduction License, with the following conditions:
  - Is issued to the Carbon Title Holder to participate in the allowable ER activities, and complying the procedures and standards under the Emission Reduction Program Agreement;
  - Empowers the MOF to enter into such land on which the ER activities are being conducted to monitor, validate, verify and report on the standards under the National Emission Reduction Program Agreement.

With the approval of draft Forest Bill, the regulations governing the carbon title and transfer are expected to be approved. A roadmap for the process is shown below (Figure 17-2).



Data management and registry

REDD+ Database Management System has been established under the MOF. The database is based on open source software developed and implemented with functionalities for data input and web-access and the database system can adapt to national reporting requirements.

Fiji REDD+ Data Management System is expected to support National Forest Monitoring System database; REDD+ program and project database; Monitoring and reporting of results data; and Standard Operating Procedures (SOP).

There is no REDD+ registry currently in the country. In the future, it is proposed to add a registry function to the Data Management System. The approach to develop a REDD+ registry system will begin by linking existing National Forest Database Management System to the central carbon registry to be installed at the Ministry of Economy to allow the country to account and report on REDD+ emission reductions and to avoid double counting in their generation and transaction.

Fiji's national REDD+ Registry is expected to take time to build and operate and will not be ready at the start of the ER-PA. Until the GoF develops such capacity, the services of an ER transaction registry are needed for few years. The GoF has decided to use the FCPF Centralized ER Transaction Registry.

Program financing

The program costs over five years of implementation are estimated at USD 43.18 million. The costs of implementation of the components include:

- Component 1: Strengthening Enabling Conditions for Emissions Reduction (USD 1.64 million)
- Component 2: Promoting Integrated Landscape Management (USD 36.68 million)
- Component 3: Program Management and Coordination (USD 4.86 million)

Financing to the program is from domestic sources (government budget and private sector investment from Fiji Pine Ltd., Fiji Hardwood Ltd and logging industry); and international sources (bilateral and multilateral sources and results-based payments from the FCPF carbon Fund). The financing gap is considered zero assuming the anticipated financing from external sources materializes. The details of the program cost and sources of financing are presented in Section 6.2 and summarized in the following table:

Expected Sources of Funds	Unit	Total
Total program cost (uses of funds)	USD	42,446,398
Financing Sources		
Fiji Government	USD	13,327,244
External Sources (anticipated)	USD	8,889,071
Carbon Fund results-based payment[1]	USD	12,573,154
Fiji Pine Ltd.	USD	6,704,500
Fiji Hardwood Corporation	USD	1,140,978
Logging Industry (private)	USD	549,140
TOTAL sources	**USD**	**43,184,087**

The **financial and economic analysis** s conducted to assess the contribution of the project to society's welfare and to inform the decision of whether to invest into a project. The **financial analysis** takes into consideration the costs and revenues that constitute financial flows between actors and for which actual functioning market exists, while the **economic analysis** integrates externalities such as environmental cost and benefit, e.g. biodiversity, carbon, soil productivity or avoided losses due to natural catastrophes.

The financial analysis indicates that the costs of the program over a period of 20 years that will be incurred by the Government of Fiji and the various implementation agency estimated at USD $212.57 million (valued at current costs). To account for the financial benefits of the program implementation, forest products from natural and plantation forests and agricultural products were valued at current market prices. In total the benefit will amount to USD $758 million over 20 years. The Financial Analysis also incorporates carbon revenue and uses the agreed USD $5 per tonne value of carbon to show carbon revenues.

This analysis indicates that the financial returns from the program investment are justified in the medium and long term given that the **Financial Rate of Return (FRR) for the ER-Program is 14.9% after 10 years and results in an NPV of USD $5.5 million**. The FRR after 20 years is 28.35% and the Net Present Value of the project is USD $88.56 million.

Economic analysis assumes additional economic benefits for the national economy and integrates additional imputed benefits in the analysis. While the costs remain the same as in the financial analysis, the economic analysis incorporates a social discount rate of 6%[2]. Maintaining all other specifications at the same rate; t**he economic analysis results in an NPV of USD $23.61 million over 10 years and USD $217.29 million over 20 years. The Economic Rate of Return is the same as for the financial analysis, namely 14.9% after 10 years and 28.35% after 20 years.**

The project is positioned to incur both financial and economic benefits to the people of Fiji in the medium and long term. The project is not only financially viable but also is beneficial to the environment and supports outcomes including (1) strategic infrastructure development (b) fulfilling the goal of the National Development Plan; and (c) reduction on reliance on native forests while increasing emission reductions and climate adaptation and resilience benefits.

[2] This follows World Bank guidance: *Discounting Costs and Benefits in Economic Analysis of World Bank Projects, May 9th 2016*

1 ENTITIES RESPONSIBLE FOR THE MANAGEMENT AND IMPLEMENTATION OF THE PROPOSED ER PROGRAM

1.1 ER Program Entity that is expected to sign ER-PA with the FCPF Carbon Fund

Name of entity	**Ministry of Economy**
Type and description of organization	Government Organization
Main contact person	Ms Makereta Konrote
Title	Permanent Secretary
Address	Ro Lalabalavu House, Victoria Parade, Suva. PO Box 2212, Government Buildings, Suva, Fiji.
Telephone	(679) 3307011
Email	makereta.konrote@economy.gov.fj
Website	http://www.economy.gov.fj/

1.2 Organization(s) responsible for managing the proposed ER Program

Same entity as ER Program Entity identified in 1.1 above?	No
If no, please provide details of the organizations(s) that will be managing the proposed ER Program	
Name of organization	Ministry of Forestry
Type and description of organization	Government organization
Organizational or contractual relation between the organization and the ER Program Entity identified in 1.1 above	Yes. The Ministry of Forestry Annual Costed Operational Plan is a commitment with Government, including the Ministry of Economy which provides/facilitates funding, to deliver all budgeted activities. Specifically, this includes, inter alia, the entire REDD+ project.
Main contact person	Mr. Pene Baleinabuli
Title	Permanent Secretary
Address	Takayawa Building Toorak Suva PO Box 2218, Government Buildings, Suva, Fiji.
Telephone	(679) 3301611
Email	pene.baleinabuli@govnet.gov.fj

1.3 Partner agencies and organizations involved in the ER Program

Name of partner	**Contact name, telephone and email**	**Core capacity and role in the ER Program**
Government Agencies		
Ministry of Economy (Planning Unit) (Climate Change Unit)	Ms Makereta Konrote Permanent Secretary, Ministry of Economy (679) 3307 011 Ext. 382019 makereta.konrote@economy.gov.fj Isoa R. Talemaibua Head of Budget and Planning Unit	Managing Entity, National ER Budget

Name of partner	Contact name, telephone and email	Core capacity and role in the ER Program
	(679) 3307 011 Ext. 382036 italemaibua@finance.gov.fj Nilesh Prakash Head of Climate Change & International Cooperation (679) 3307 011 Ext. 382106 nprakash001@economy.gov.f	Technical M&E support
Ministry of Forestry	Mr. Pene Baleinabuli Permanent Secretary Forestry (679 3301 611 pene.baleinabuli@govnet.gov.fj	Managing entity, Coordination of ER implementation, ER Documentation, Monitoring and Reporting,
Ministry of Lands and Mineral Resources	Malakai Finau Permanent Secretary Lands & Mineral Resources (679) 3239726 Malakai.finau@govnet.gov.fj	Managing entity - Land use planning and leasing where appropriate
Ministry of Infrastructure and Transport	David Kolitagane Acting Permanent Secretary Infrastructure and Transport (679) 3384111 psit@moit.gov.fj	National and District representative
Ministry of iTaukei Affairs	Marilyn Korovusere Tagicakibau Director Development Services Division (679) 3100909 marilyn.tagicakibau@govnet.gov.fj	National and District representative, Awareness, FPIC processes, Safeguard, Grievance Redress Mechanism and Permanence
Ministry of Agriculture	Solomoni Q. Nagaunavou Senior Research Officer Land Use, Research Ministry of Agriculture snagaunavou@govnet.gov.fj Diana Ralulu Research Officer Land Use, Research Ministry of Agriculture diana.ralulu@agriculture.gov.fj	National and District representative, AFOLU documents, land use planning, Agroforestry target. Co-financing
Ministry of Waterways and Environment and Waterways	Sandeep K. Singh Director Environment (679) 3311699 singhsk@govnet.gov.fj	National and District representative Co-financing from other land restoration through other bilateral and multinational funding program
Ministry of Rural and Maritime Development & Natural Disaster	Loata T. Vakacegu Deputy Secretary (679) loata.vakacegu@govnet.gov.fj	National and District representative Support for stakeholder engagement and participation
Ministry of Education Curriculum Unit	Metuisela Gauna Policy Unit | Corporate Services | | Ministry of Education, Heritage & Arts [Fiji] | (679) 3314477 ext. 332126 metuisela.gauna@govnet.gov.fj	Support for stakeholder engagement and participation
Technical partners		
Pacific Community (SPC)	Jalesi Mateboto Forest Technical Officer, Pacific Community	Technical support for the ER Program; and FCPF readiness project

Name of partner	Contact name, telephone and email	Core capacity and role in the ER Program
	(679) 3305983 JalesiM@spc.int	
The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	Plugge, Daniel GIZ FJ Technical Advisor (679) 3305983 daniel.plugge@giz.de	Technical support for the ER Program and FCPF readiness project
University of the South Pacific /Institute of Applied Science	Marika Tuiwawa Curator South Pacific Herbarium, University of the South Pacific (679) 32 32970 marika.tuiwawa@usp.ac.fj	Research and academia on forest biodiversity
Fiji National University	Maika Tabukovu Snr Lecturer, Fiji National University (679) 347 9200 maika.tabukovu@fnu.ac.fj	Research and academia on forest reference level and socio-economic aspects of forest activities
Non-government organizations		
Soqosoqo Vakamarama	Adi Finau Tabakaucoro President, Soqosoqo Vakamarama iTaukei (679) 3381408 ftabakaucoro@gmail.com	Stakeholder information sharing, consultation, participation, CSO Chair
Conservation international	Susana W Tuisese Fiji Country Director (679) 3314593 swaqainabete-tuisese@conservation.org	Work on drivers, stakeholder information sharing, consultation, participation, strategy, benefit sharing issues; Safeguards (co-chair), local implementation (co-chair)
Nature Fiji Mareqeti Viti	Nunia Moko Director (679)310-0598 nuniat@naturefiji.org	Awareness, Conservation target, co-financing
Live and Learn	Rosarine Lagi (679) 3313868 REDD+ Officer, Nakau Programme rosarine.lagi@livelearn.org	REDD+ Project Drawa – Lessons learned
Quasi-government organizations		
iTaukei Lands Trust Board	Solomoni Nata General Manager (679) 3312733 snata@tltb.com.fj Reijeli Taylor (679) 3312733 rtaylor@tltb.com.fj Marama Sukani (679) 3312733 msukani@tltb.com.fj	Land allocation, Carbon ownership, permanence issues, FPIC, Land use plan, BSM, GRM, Co-financing
Fiji Pine Limited	Asesela Cokanacagi General Manager (679) 6661388 <ACokanacagi@tropik.com.fj>,	Reforestation plan and budget, Co-financing, Permanence
Fiji Pine Trust	Piita Rokobiau Director <prokobiau@gmail.com>	Reforestation and afforestation target

Name of partner	Contact name, telephone and email	Core capacity and role in the ER Program
Fiji Hardwood Cooperation	Lavisai Seroma Acting Chief Executive Officer (679) 3372663 Lavisai@gmail.com	Reforestation plan and budget, Co-financing, permanence
Fiji Mahogany Trust	Sevanaia Tawake Director (679) 9713238 <tawakesevanaia@gmail.com	Reforestation target
Private Partners		
Fiji Sawmillers Association	Amena Tuisawau Secretary Fiji Sawmillers Association <amena_tui@yahoo.com>	Sustainable forest management, Co-financing
Emalu Landowners Representative	Ilaitia Leitabu Emalu Landowner (679) 7116153/9229864 <ilaitial@connect.com.fj>	Pilot site demo on the 5 Redd+ activities

2 STRATEGIC CONTEXT AND RATIONALE FOR THE ER PROGRAM

2.1 Current status of the Readiness Package and summary of additional achievements of readiness activities in the country

Fiji's readiness phase commenced in 2009 through the GIZ REDD+ program and in 2010 a National REDD+ Policy was endorsed by Cabinet. Following closely on the heels of the National REDD+ Policy was the drafting of the National REDD+ Strategic framework. This framework forms the basis for the components of the National REDD+ Strategy. The start of the readiness phase was marked with extensive stakeholder consultations and awareness on the national REDD+ programme, from policy level to local communities, and technical training on MRV components. In 2012 and 2013, after extensive consultations and following selection criteria, two national REDD+ pilot sites were established with the main objective of trialing out readiness approaches and methodologies in preparation for the national scale implementation. The two pilot sites are located on the two major islands of Fiji – Viti *Levu* and *Vanua Levu*. In addition, one project site is acknowledged to demonstrate community-based reforestation approach on the island of Viti Levu. Research related to REDD+ readiness was carried out in the Fiji Nakavu Forest research site (managed by the MOF).

Fiji became a participant country in the FCPF in 2013 and a year later in December 2014, the FCPF PC authorized a grant funding of US$ 3.8 million to support Fiji's preparations in engaging in a future REDD+ performance-based system. The grant agreement for the Fiji's R-PP readiness fund was signed in May 2015.

The following highlight of achievements are made to date during R-readiness phase together with remaining gaps to be completed before the ER-P commences.

1. Institutional strengthening for REDD+

a. National REDD+ management arrangement

- National REDD+ Steering Committee (RSC) has been in place since 2010 - meeting more than 4 times annually with comprehensive institutional capacity building. Terms of reference for RSC is outlined in Annex 2-1.
- The national REDD+ Unit established in 2014 with an office within the Ministry of Forests with five staff.
- Establish Divisional REDD+ Working Groups in the Northern and Western Divisions, the main divisions where proposed ER activities will be established. The REDD+ Working Group is a multi-agency committee, directly oversee and monitor implementation in REDD+ sites.
- REDD+ Technical Thematic Working Groups consists of a sub-set of the national REDD+ Steering Committee providing expert inputs on main components of Fiji REDD+ programme. Thematic Working Groups include safeguards working group, the awareness-raising working group; the governance and finance working group; the MRV working group (or the technical working group); and the education and research working group.

b. Consultation, participation, and awareness

- Consultation and participation plan developed with stakeholders.
- Communication Strategy developed with stakeholders.
- An informative national REDD+ website is online and active REDD+ Facebook page. Other social media are utilised including WhatsApp, Viber and twitter.
- Awareness workshops and trainings consistently carried out at different decision-making levels including local village communities.

- Institutionalization of the Feedback Grievance Redress Mechanism (FGRM) to ensure alignment and application of key recommendations from the FGRM study to ER-P.

Remaining gaps:

- Update the Consultation and Participation Plan to incorporate recent experiences and lessons.
- Full operationalization of the REDD+ communication strategy including elevating awareness and consultation to focus on emissions reduction programme.

2. Developing a National REDD+ Strategy

a. Assessment of land use, changes in the allocation of land, forest laws, policies, and governance

- Analysis of the drivers of deforestation and forest degradation completed with a national REDD+ strategy in place.
- Legal analysis on REDD+ and forest carbon rights in Fiji conducted - information paper on the study submitted to cabinet and endorsed.
- Carbon financing and formal approval process included in the Forest Bill 2016 - in cabinet awaiting final reading.
- Benefit sharing mechanism relating to use of iTaukei land already established with TLTB.
- REDD+ lease conditions for forest conservation developed with TLTB (for the Emalu pilot site and the Drawa REDD+ Project).
- Lessons and experiences for implementation of REDD+ derived from the two REDD+ pilot sites and the Drawa Project site – study on carbon measurements and monitoring in different landuse types; approaches to inform FPIC and SESA and community-based management and monitoring; climate smart agriculture, land use planning and reforestation methodologies (main strategies for implementation of REDD+).
- As land is customarily owned in Fiji, the benefit sharing mechanism in place is compatible to meeting the Methodological Framework criteria and is already enshrined in the Laws and the Constitution of Fiji.
- Forest resource use rights, forest entitlement are all long established in Fiji's Constitution and legal framework.

b. Implementation framework

- The National REDD+ Policy (2010) in place - national and sector policies developed later are aligned to objectives of REDD+ Policy.
- Fiji Forest Harvesting Code of Practice (2013) - reviewed to promote reduced impact logging – component of sustainable forest management – a REDD+ activity in the Fiji programme.
- TLTB completed Masterplan for the Nausori – Suva corridor and the Navua-Korovou Masterplan (including land zoning). Land use zonation is critical to safeguard against leases that will go against intentions of proposed REDD+ activities.
- Fiji is in the process of including the AFOLU sector in its nationally determined contributions (NDCs) that will be submitted in 2020. This serves to enhance a national approach and long-term planning to reduce emissions in the agriculture and forestry sector.

c. Social and environmental impacts

- Draft Strategic Environment and Social Assessment report is in place.
- Drafting of the safeguards instruments (ESMF, Resettlement Policy Framework and Process Framework) are currently being drafted and expected to be completed by June 2019.

Remaining gaps*:*

- Lease conditions that addresses the various REDD+ activity types are drafted as part of the Benefit Sharing Mechanism. REDD+ Pilot sites have demonstrated Forest Conservation Lease

while Benefits Sharing Mechanism proposes leases for Forest Management License and Carbon Enhancement as well as Agroforestry activities based on existing frameworks.

- Establish a legal framework on forest carbon rights and benefit sharing mechanism of carbon funds including a registry of carbon credits created and expanded.
- Strengthen alignment of sectoral policies and plans to support REDD+ activities.
- Develop regulations to enforce the implementation of the Fiji Harvesting Code of Practice.
- Finalise and institutionalise the national participatory land use planning guidelines. The guidelines will support alignment to the SDGs and enhance climate change adaptation and poverty alleviation co-benefits of REDD+ activities.
- Develop reforestation/replanting manual. The manual will draw from the various reforestation experiences from around the country and will be essential in ensuring high survival rates in the challenging degraded and dry grassland sites targeted in this ER-PD and strengthen environmental and biodiversity safeguards.
- Further development and subsequent institutionalization of FPIC guidelines, grievance redress mechanism and ESMF.
- Approval of the ER-PD FREL.
- Establishment of an MRV system at all levels.

3. Designing and developing a Forest Reference Emission Level

- Draft Forest Reference Emission Level (FREL) document developed.
- A National Forest Monitoring System has been started and the development is progressing well
- The draft Forest Reference Emission Level (FREL) document submitted to the Fiji REDD+ office August 2018. Revised documentation received in Dec 2018. Fiji's current FRL includes only two carbon pools (above and below ground) and for some land use classes default values are used for emission factors in the first iteration. Stakeholders recommended to expand carbon pools and to derive emission factors relevant to land use classes for Fiji. Another area of improvement is the estimation of forest degradation. In the current FRL, forest degradation is estimated using the logging data as a proxy approach.

Remaining gap:

- Finalization and approval of the ER-PD FREL/FRL.
- Various activities are proposed for the rest of the REDD+ readiness period to improve FR including the use of sophisticated methods of estimating forest activity data, use of country-specific emission/removal values, the inclusion of more carbon pools and the inclusion of more sources and sink of carbon.

4. Forest monitoring systems and safeguard measures

- Studies and research on reduced impact logging (RIL) conducted in Nakavu Forest Research Site for monitoring of carbon under different logging regimes.
- Current development of a National Forest Monitoring System (a database focusing on the three ER-PD islands has been set-up).

Remaining gaps

- Completion of National Forest Monitoring System.
- Establishment of an MRV system at all levels and a training/capacity development plan.

2.2 Ambition and strategic rationale for the ER Program

Fiji's Emissions Reduction (ER) Program "reducing emissions and enhancing livelihoods" will support the implementation of major strategic action identified in the draft strategy options (R-PP section 2b.2). The livelihoods of local communities are closely tied to their land and natural resources and the strategy options reflect the broad impacts targeted in the various activities.

The area for the ER Program will cover the country's three largest islands - Viti *Levu*, *Vanua Levu* and *Taveuni*. With 1,045,309 ha of forest area on 1,685,742 ha of land, the programme covers 90 % of the total land mass and 94 % of the forest cover in Fiji. Initially, REDD+ activities will be implemented at sub-national scale and with increasing government support, the size of implementation area will expand within the ER Program boundary, encompassing more communities and villagers in the process. The selection of priority REDD+ project areas is based on REDD+ eligibility, emission reduction impact, biodiversity enhancement and livelihoods impact, poverty alleviation impact and the commitment shown by the landowners and users in joining the programme.

Activities identified to have a high carbon emission reduction potential include afforestation / reforestation (mainly on unutilized and degraded grasslands), enrichment planting of poorly stocked and/or degraded commercial plantations, implementation of FFHCOP with reduced impact logging (RIL) in active logging sites, agroforestry and alternative livelihood and protection of indigenous forests under present or potential threat from logging and infrastructure development.

Consistency with national policies and development priorities and national REDD+ Strategy

The activities of the ER Program are developed within the National REDD+ Strategy and since the REDD+ Strategy is structured to respond to various national priorities, the ER program naturally contributes to the implementation of national plans and strategies and more importantly towards the country's overall vision of increased resilience and sustainable development. The importance of a sustainable forest sector and the National REDD+ Programme are specifically mentioned in various plans and policies including the 5-Year & 20-Year National Development Plan: Transforming Fiji, Green Growth Framework, the National Climate Change Policy (2012) and new National Climate Change Policy 2018 - 2030 which has the vision of "A resilient and prosperous Fiji, in which the *wellbeing of current and future generations is supported and protected by an equitable, socially inclusive, low carbon, and environmentally sustainable economy*". The new Policy states that a sustainable forestry sector remains key priority for Fiji's national climate change response and in its strategies include - the need to increase carbon sequestration potential and in the process strengthen the resilience of Fijian communities against the impacts of climate change. The ER program will effectively respond to this.

The development of this ER Program is specifically mentioned in the strategy of Fiji's National Development Plan (NDP) 2017-2036 (page 118) signifying it's importance in Fiji's overall national development. The focus of the strategies to strengthen efforts on forest conservation, sustainable forest harvesting practices and climate change mitigation and adaptation dovetails neatly with the ER program's intentions. The relevant strategies (pp117-118) include - increasing forest areas (5,300 Ha reforested by 2022); expanding conservation forest areas (increase by 5% by 2022); the development of a National Plantation Policy; the formulation of a National Land Use Plan; putting in place long-term leasing mechanism(s) to support forest conservation, forest concessions and plantation leases; and introducing new regulatory framework for indigenous and pine forests.

A significant national document on Fiji's Low Emissions Development Strategy (LEDS) with the purpose of enhancing Fiji's ability to plan for the decarbonisation of its economy in the long-term with the ultimate object to reach net-zero emissions by 2050. The development of the LEDS responds to Article 4,

Paragraph 19 of the Paris Agreement and aligned to the national-level objectives of the National Development Plan (NDP) 2017-2036 and the Green Growth Framework. Efforts though the ER-P are aligned to the Cancun Safeguards Principles that calls for complementarity and consistency of national forest programs to relevant international conventions and agreements.

The LEDS provides a framework for progressive revision and enhancement of targets under Fiji's NDC and provides guidance on the implementation of low emission strategies in various sectors. The Strategy supports the determination of emission reduction targets and corresponding climate actions for critical sectors where real emission reductions can be achieved. These sector targets are in addition to those in the current NDCs and will include the Forestry and Agriculture (AFOLU) sectors. The activities of REDD+ Strategy are reflected and supported in the LEDS. The ER Program provides valuable directions on implementing the AFOLU sector components of the LEDS, based on the lessons and experiences coming out from implementation of ER-P activities.

It should also be noted that the definitive pathways detailed in the LEDS will help support climate-smart and sustainable investments. These specific pathways will inform and guide potential investors and funding agencies on the type of investments that are feasible while at the same time ensuring reduced emissions. This includes REDD+ investment opportunities. The ER program will enhance financing, technical and social structures established for the REDD+ programme, and this will result in increased investor confidence to engage in the sector.

The implementation of the ER Program will test and enhance the effectiveness of structures and approaches in the national REDD+ Strategy as it will be the first large-scale REDD+ activity for the country. As most of these REDD+ structures and processes are closely linked or embedded in existing national structures, the enhancement of these through the ER Program can have a ripple effect on national structures including governance. Examples include - the application FPIC guidelines that can lead to the reviewing and updating of consultation processes currently carried out by government and other agencies; the Safeguards Information System (SIS) when capturing on-the ground progress of the ER Programme, will also pick-up other information on the supporting activities led by other partners. The SIS will be greatly enhanced and serves as a valuable repository of information and monitoring tool, not only REDD+ activities but other development actions. This would provide valuable information for various national and international reporting requirements especially to the UNFCCC and in alignment with Cancun Safeguard Principles.

Supporting the development of integrated national and subnational land use plans

The ER program will provide platform to develop integrated and sustainable land use plans which would contribute to reducing pressure on forests while supporting local livelihoods. Furthermore, it would contribute to controlling conversion of natural forests for other land use purposes. The issues which will be addressed under ER program and the cross-sectoral solutions introduced are relevant to land use dynamics in many parts of the country. Sustained efforts would be made to update the provincial land use development plans which would be done in a participatory manner. The proposed ER Program is strategically relevant for the development and delivery of integrated planning at subnational and nation level to align with the Cancun Safeguard Principles. This would contribute to national sustainable development priorities, as expressed in some major policies and legislation, including:

- 5-Year & 20-Year National Development Plan: Transforming Fiji (2017);
- Green Growth Framework for Fiji: Restoring the Balance in Development that is sustainable for our Future (2014);
- National Climate Change Policy (2012);
- REDD+ Policy (2010)
- Fiji Forest Policy (2007);

- Rural Land Use Policy (2005).

Supporting Afforestation/Reforestation

The impact of the afforestation / reforestation activities of the ER Program will be significant given the large expanse of degraded grasslands and poorly stocked plantations in Fiji. Aside from benefits generated from the emissions reduction programme, these activities will contribute towards a more robust forest production sector where future timber demand can be met through a sustainable supply from planted and managed forest areas rather than from indigenous forests. This creates an enabling environment for Fiji to invest in projects with low carbon impact and high social and environmental benefits. Government has programmes supporting the development of value chains, diversification of markets for forest products, and the utilization of forest by-products. All these programmes can be intensified with increased supply from plantation and forest areas including a progression to certified goods coming from sustainably managed forest plantations. Such investments will reduce not only the logging pressure placed on Fiji's valuable indigenous and biodiversity-rich forests but will also provide alternative sources of livelihoods for landowners who are increasingly driven to clear forests for semi-subsistence farming as their main source of livelihood. Improved economic opportunities is assumed to take the pressure off unplanned utilization of forest resources and ensure that avoidance of emission displacement by local communities (Cancun Safeguards Principle (g)).

Supporting integrated landscape management to Afforestation/Reforestation

It is well recognised that reforestation/afforestation activities, when planned properly, will result in enhanced forest ecosystem services. These services are critical for keeping small island landscapes healthy and productive. This in turn contributes to increasing the resilience of local vulnerable communities against the intensifying impacts of climate change. To ensure maximum impact of REDD+ activities, a broad integrated landscape planning and implementation approach will be adopted. Other established or planned government programmes (like livelihood projects, climate-smart agriculture, financial literacy training, etc.) will be integrated in the overall design of REDD+ activities including the ER Program. This holistic approach is necessary to ensure overall sustainable development of the REDD+ communities and generates greater ownership over REDD+ activities among the various stakeholders. Such joint planning and actions will encourage the integration of activities (necessary to support REDD+ implementation) into plans and budgets of relevant sectoral ministries and supporting agencies.

To promote this integrated approach, the readiness phase in Fiji rolled out an intensive and comprehensive awareness-raising and training programme targeting resource owners and users as well as an array of stakeholders including government ministries, the private sector who are either directly or indirectly involved in driving and influencing land use change. An integrated approach was also used when implementing activities with the communities of the Emalu REDD+ pilot site with positive results in terms of active engagement and resource sharing among different government agencies and improved local livelihoods due to diversified income sources initiated by the various implementing partners.

The integrated landscape approach will extend across different ER program activity areas within the accounting area to fulfil Cancun Safeguard Principle (b), (c), (d). Given Fiji's relatively small island area, it is expected that different activities will be closely inter-connected. In the Emalu pilot site for instance, the highly biologically diverse and pristine Emalu forest sits adjacent to a vast stretch of grassland. It was recognised that the protection of the Emalu forest would require the rehabilitation of the grassland zones into productive agriculture land and extensive replanting to provide income sources that would otherwise have been derived from clearing forest areas. Therefore, activities of the ER program are part of a broader holistic plan to ensure that threats coming from beyond the implementation site are

addressed. The ER Program will add value to, and strengthen, development activities that are currently underway in the planned project sites.

Supporting agroforestry, climate smart agriculture and alternative livelihood

The ER Program will provide opportunities for local communities and landowners to replicate and upscale proven successful technologies like climate-smart agriculture and agroforestry systems while supporting the transference of valuable technologies to the other program sites in the country. The scope of Climate Smart Agriculture is wide, ranging from crop production, agroforestry, livelihood and aquaculture. The ER activity will focus on kava production and agroforestry and scale up minimum tillage technique and integrated farming technique to arrest forest loss associated with agriculture expansion. Apart from kava, vanilla cultivation will also be advocated as a minimum tillage alternative aimed at avoided deforestation.

Impacts will be maximised through joint stakeholder holistic planning and implementation, spanning across broad landscapes and beyond the assigned priority sites of the ER Program. Such actions will contribute towards the overall national vision of a resilient and prosperous Fiji (National Climate Change Policy, 2019).

Role in adaptation and climate resilience

Small island communities are highly vulnerable to the impact of climate change and these impacts are projected to further intensify under global warming trajectory we are currently on. These impacts threaten Fiji's sustainable growth and places huge economic, social and physical stress to local communities and ecosystems. Urgent actions are needed to strengthen the resilience of Fijian communities against the multitude of impacts brought about by climate change. Given Fiji's small island landscape, it is essential that impacts of climate action are maximised by ensuring that mitigation actions and initiative will result in adaptation co-benefits. Synergies need to be created between mitigation and adaptation activities. Fiji's national plans and strategies emphasise the need for embed climate change adaptation and resilience initiatives in all national and sectoral plans and strategies. The National Adaptation Plan Framework highlights the REDD+ Policy to have relevance to support the National Adaptation Plan, reflecting the dual role REDD+ plays – both in climate change mitigation and climate change adaptation. Fiji's ER Program is designed to maximise adaptation co-benefits and integrate initiatives that address vulnerabilities of local communities, therefore, contributing to national efforts to build a more resilient nation.

2.3 Political commitment

It is quite significant that the national REDD+ programme and the activities of ER Program are important components of recent national plans and strategies, most of which are forward looking long-term plans. These include the National Development Plan (NDP) 2017-2036; Low Emissions Development Strategy; enhanced NDC (to be submitted by 2020) and the National Climate Change Policy (2018-2030). The inclusion of the forestry sector in the LEDS is also a strong indication of long-term political commitment to emissions reduction activities.

In Fiji's submission to the UNFCCC Talanoa Dialogue's third question "How do we get there", the need to "Enhance National Carbon Sequestration" was identified as one of the key priorities to reaching net-zero emissions by 2050 and there is the stated intention to identify more areas under the National REDD+ Programme. This stems from the strategies outlined in the National Development Plan (NDP) 2017-2036 where it clearly articulates the development of the ER program and where the stated targets in the forestry sector (increased reforested and forest conservation areas) will rely largely on the ER Program.

Repeated across all these national plans and strategies is the message that more areas will be identified under the Fiji REDD+ programme to protect Fiji's forests, increasing forest carbon sequestration initiatives and to generate financial benefits. Therefore, the ER program is envisaged to be supported at the highest political level given its significant contribution in implementing these national priorities.

In addition, Fiji's current efforts to include emission reduction commitments for the agriculture and forestry sector in its NDCs demonstrates high-level of political support for actions in this area given that countries who are signatories to the Paris Agreement are required to diligently report on the achievement of their NDC targets at the international level. Coherent and transparent carbon accounting for the committed REDD+ activities and commitments in the NDC will be ensured and the ER Program will help strengthen such reporting processes.

It should be mentioned that political commitment to the national REDD+ programme has been ongoing since the initiation of the programme almost 10 years ago. This is indicated by the annual government budget provisions to support readiness efforts and the establishment of the REDD+ Unit within the MOF.

Political commitment translating to practical actions is indicated by the active national RSC compromising of key government agencies and other partners. Under directives from their ministries, government agencies have been actively engaging in preparing for readiness including on the ground support in various activities. For instance, the Ministry for Agriculture has been actively engaged in land use planning processes and the introduction of climate smart agriculture in local communities in the REDD+ pilot sites. The Ministry of Rural and Maritime Development led the establishment of the multi-agency Divisional REDD+ Working groups (in the Western and Northern Division) through the active engagement of their Divisional Commissioners who serve as chairpersons of the working group. These bodies guide the implementation of the ER program and there is reassurance from the involved ministries on their commitment through mutually agreed terms of references detailing their roles and contributions.

Fiji's political commitment to support forest conservation is also demonstrated when it successfully submitted the Emalu REDD+ site to be part of the Queen's Commonwealth Canopy. The Queen's Commonwealth Canopy raises awareness within the Commonwealth of the value of indigenous forests. The unique network of forest conservation projects brings collective credibility and integrity to individual Commonwealth initiatives. As part of this network Fiji highlighted the role of REDD+ actions, including the ER program, in ensuring the long-term conservation of Fiji's indigenous forests.

More broadly, Fiji's political commitment to tackling climate action is demonstrated through the innovative climate financing instruments established recently. In 2017, Fiji introduced the Environmental and Climate Adaptation Levy (ECAL) which is at the rate of 10% on prescribed services and goods, mainly on businesses with high turnovers. The ECAL provides a sustainable source of domestically derived climate finance for climate action and environmental protection. As of April 2018, FJD$110.6m had been collected through the ECAL and FJD$106m spent on a range of projects supporting disaster relief, response and recovery, metrological service upgrades, and a range of resilient development initiatives.

In addition to the ECAL, is the green bond - a 100-million Fijian dollar bond was launched in October 2017. By 1st November 2017, 40million Fijian dollars was issued as the first tranche in a series of green bond issuances that Fiji plans to make. Projects financed from the Fiji green bond will focus primarily on investments that build resilience against the impacts of climate change including community climate adaptation projects and to support the achievement of its NDC targets. Fiji's Green Bond is the first in the Southern Hemisphere; and the first from an emerging market economy to issue a sovereign green

bond. In recognition of this, the World Bank will soon be publishing a 'Guide to Sovereign Green Bond Issuance – Lessons from Fiji'. The issuance of Fijian Green Bonds is seen to be a positive development for the domestic capital markets as it expands the number of climate financing instruments available and stimulates private sector investment that promotes sustainable economic growth and poverty reduction.

These innovative climate financing instruments provide a sustainable funding source for Government to support adaptation and conservation activities that will complement and support the activities of the ER program to ensure holistic and sustainable development.

In December 2016, Fiji was elected the UNFCCC COP23 President. During the COP23 Presidency period (2017 - 2018) Fiji effectively led international negotiations among the Parties of the UNFCCC and of the Paris Agreement including initiating the "Talanoa Dialogue" within the UNFCCC process. The Talanoa Dialogue is a COP mandated process that took place in 2018 to take stock of the collective efforts of Parties in relation to progress towards the long-term goal and to inform the preparation of NDC. Under the Fijian Presidency, the term "Talanoa Dialogue" replaced the original term "Facilitative Dialogue" to reflect the open, transparent, inclusive, and participatory process which are features of a "Talanoa". This approach was highly commended by both government and non-government stakeholders across the world. Fiji was congratulated for introducing an inclusive and less confrontational process in what would have been an otherwise formal space.

This "Talanoa" approach is the essence of consultation and decision-making in the country and this inclusive and participatory engagement process will strengthen the implementation of the ER Program including adherence to social safeguards.

3 ER PROGRAM LOCATION

3.1 Accounting Area of the ER Program

3.1.1 Overview of Fiji

The Fiji islands (located 12 - 20 S and 177 E – 177 W) is a group of volcanic islands in the South Pacific comprising of more than 332 islands of which 110 are inhabited. The country has a land area of approximately 18,376 km^2 and an EEZ of 1,290,000 km^2. The country is endowed with forests, minerals and fish resources, and with a diverse race of people rich in culture and tradition.

The total population recorded in 2017 was 884,887[3], and compared to 837,271 recorded in 2007, there was an increase of 47,616 or 5.7%. The low annual growth rate of 0.6% may be attributed to low birth rate and out migration. Urban population accounts for 55.9% and an increase from 50.7% recorded in 2007, where the increase is due to the extension of town boundaries and rural-urban drift. The median age range of the population is 27.5 years and with a population density of 48 per km^2.

Fiji is described as an upper middle-income country and one of the more connected and developed of the Pacific island economies, although it remains a developing country. Its economy is predominately tourism and agriculture-based, with the latter including a substantial subsistence sector dominated by indigenous Fijians (iTaukei). The sugar sector remains a significant industry and a major export accounting for one-third[4] of the country's industrial activity. Bottled water to the United States is the largest domestic export.

The nominal GDP reported in 2017 was USD8.798 Billion with a GDP per capita at USD 9,7165. Agriculture accounts for 10.6% of the GDP, with industries, including timber and fisheries at 17.9% and services, including tourism at 71.5%. The unemployment rate recorded in 2017 was 4.5%[6] and is the lowest recording over a 20-year period. Fiji's level of economic development lies above the Pacific but below the global developing countries average. However, in terms of social development in health and education, Fiji performs above the regional and significantly higher than the average for global developing countries.

Tropical cyclones (TC) have been the main causes in the decline of the GDP and the economy. The impacts of these events are significant and lasting. Fiji is still recovering from the Category 5 TC Winston, which made landfall in 2016. This was the most severe cyclone in Fiji's history, which devastated the landscape, agricultural farms and destroyed the Penang Sugar Mill in the Western Division. The remnants of the cyclone are still evident as farms, roads and bridges that require repairing and a significant number of houses not rebuilt, awaiting government assistance. Pine plantations in the Western Division were the worst hit. The native forests, however, has recovered with the vegetation cover returning to rich lush regrowth in the months immediately after TC Winston; attributing to the health and resilience of Fiji's native forests.

3.1.2 The ER-P Accounting Area

Fiji is administratively divided into 3 divisions, i.e. Northern, Western and Central-Eastern (Figure 3-1). Under the native hierarchical system, the areas are divided into 3 traditional confederacies, which are further subdivided into 14 provinces. There are 11 townships and 2 cities.

[3] Census Report (2017), Fiji Bureau of Statistics
[4] Fiji Bureau of Statistic and Macroeconomic Committee News Article No. 2 (2017)
[5] CIA World Fact Book 2017 Estimate – USD 9,800
[6] 2015-2016 Employment & Unemployment Survey recorded a 5.5% unemployment rate.

The ER-P accounting area hosts 11 of the 14 Provinces. An overview of the 11 provinces in terms of land area, population count and density, as well as the municipalities or townships and cities is outlined in Table 3.1. The key characteristics include: -

- The 11 provinces account for 89% of the country's total land area which hosts 97% of the 2017 population;
- The province of Ba has the highest population count attributed to the increase in township boundaries and drift towards the townships and city; there are 3 towns and a city within the provincial boundary;

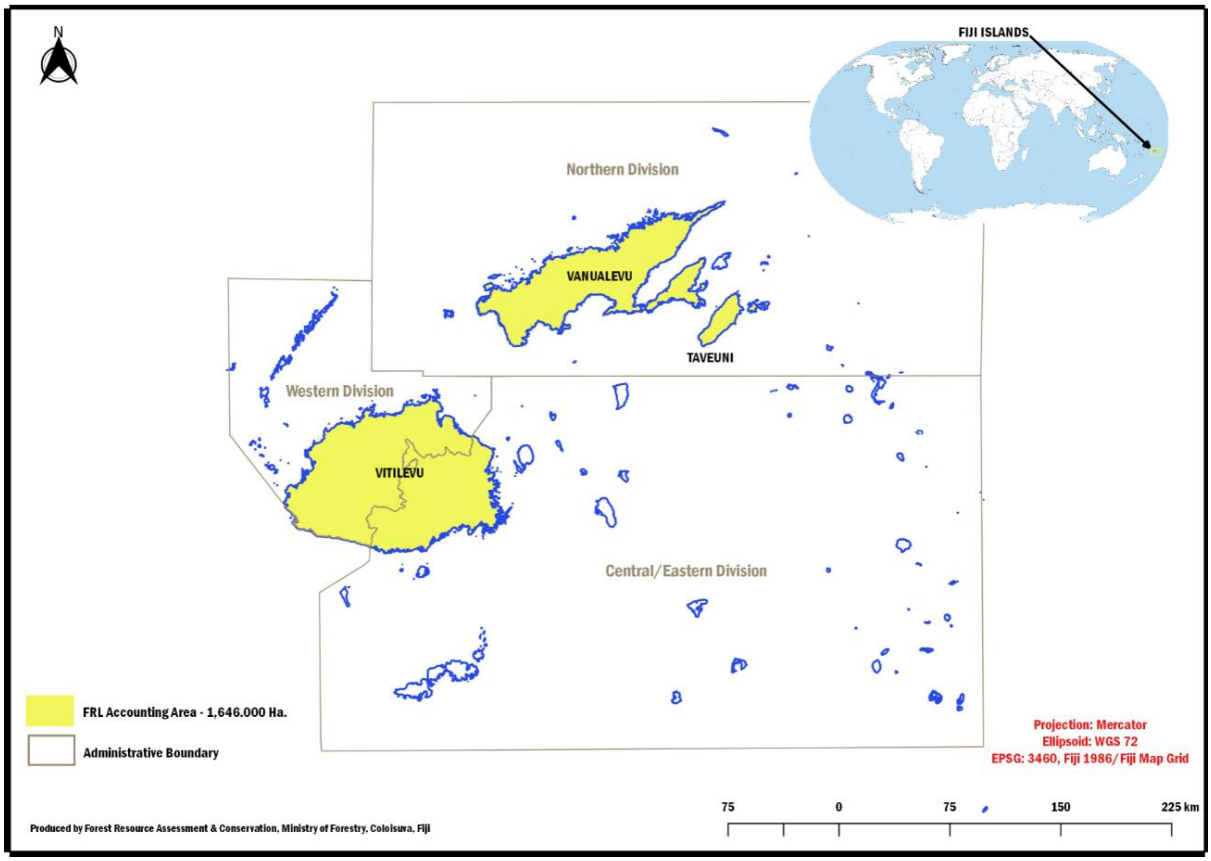


Figure 3-1: Map of ER-P Accounting Area

- The province of Rewa is the most densely populated attributed to rural-urban migration to Suva City, which is the main administrative (Government) and business centre;
- The province of Namosi has the lowest population count but relatively good-sized land area being twice the size of Rewa; however, it is well known for is mountainous and rugged terrain;
- The least populated province is Bua, where very little economic activity occurs. The only major economic activity has been the Bauxite mining that began in 2009 as well as the installation of wood-Chipper by Tropik Woods Industries Ltd.

Proposed ER-P Accounting Area.

The proposed ER-P accounting area include the three largest islands, Viti *Levu*, *Vanua Levu* and *Taveuni.* These islands are generally mountainous and have the three highest peaks in Fiji, with landforms that rise abruptly from the shore; the summit of Mount Tomaniivi on Viti *Levu* with an elevation of 1,324 m above sea level. The western aspects of Fiji are in a rain shadow and have marked dry season. The total land area of the ER-P accounting area is 1.6m ha. covering 89% of Fiji's total land area (Table 3-2 and Figure 3-2).

The ER-P will directly affect 97% of Fiji's population. The composition of the population varies between the three larger islands however, given that 90% of the land in the ER-P falls within iTaukei lands (Ref Table 4-5); the main target group will consist of iTaukei communities. Equally important are tenant farmers on iTaukei land who have lease titles on such lands allowing full right of ownership while the lease is in force.

Table 3-1 Area, population, growth rates and Municipalities of the 11 provinces covering the ER P Accounting Area

Divisions	Province	Area (km^2)	No of districts	No of Villages	Census 2007		Census 2017		Municipality (Towns/Cities)
					Population	Person /km2	Population	Person /km2	
WESTERN	Ba	2,459	21	107	232,000	94	247,780	101	Tavua, Ba, Nadi & Lautoka City
	Nadroga - Navosa	2,835	22	121	58,400	21	58,931	21	Sigatoka
	Ra	1,340	19	89	29,470	22	30,432	23	Rakiraki
CENTRAL	Naitasiri	1,700	16	121	161,000	95	177,687	105	Nausori
	Namosi	570	5	28	6,900	12	7,871	14	Navua
	Rewa	272	9	52	100,800	371	108,016	397	Lami, Nausori & Suva City
	Serua	830	4	24	18,250	22	20,031	24	
	Tailevu	760	22	146	55,700	73	64,552	85	Nausori
Viti *Levu* Island		**10,766**	**118**	**688**	**662,520**	**62**	**715,300**	**66**	
NORTHERN	Bua	1,380	9	50	14,200	10	15,466	11	Nabowalu
	Cakaudrove	2,816	16	132	49,350	18	59,469	21	Savusavu
	Macuata	2,004	12	112	72,440	36	65,983	33	Labasa
***Vanua Levu* Island**		**6,200**	**37**	**294**	**135,990**	**22**	**140,918**	**23**	
Aggregate land areas include group of islands within provinces		**16,966**	**155**	**982**	**798,510**	**47**	**856,218**	**50**	

Eastern division includes the islands and group of islands of Rotuma, Kadavu, Lau and Lomaiviti
Source: CIA-World Facts Data Base

Table 3-2: ER-PD Accounting Area

ER P area	Total area (ha)	% of ER-PD area	% of Fiji Land mass	Population (2017)	% of ER-PD population	Highest Elevation
Viti *Levu*	1,038,900	63.48%	56.54%	715,300	81%	Mt. Tomaniivi (1,324 m a.s.l)

ER P area	Total area (ha)	% of ER-PD area	% of Fiji Land mass	Population (2017)	% of ER-PD population	Highest Elevation
Vanua Levu	554,257	33.87%	30.16%	140,918	16%	Mt. Sorolevu (1,023 m a.s.l)
Taveuni	43,400	2.65%	2.36%			Mt. Uluiqalau (1,242 m a.s.l)
other areas in Fiji	81,630	0.00%	4.44%	28,669	3%	negligible
Aggregate land area does not include group of islands	**1,636,557**	**89%**		**884,887.00**	**97%**	
TOTAL FIJI WIDE	**1,837,600**					

Source: MOF 2016 Key Statistics total population of Fiji is 884,887 2017 fig

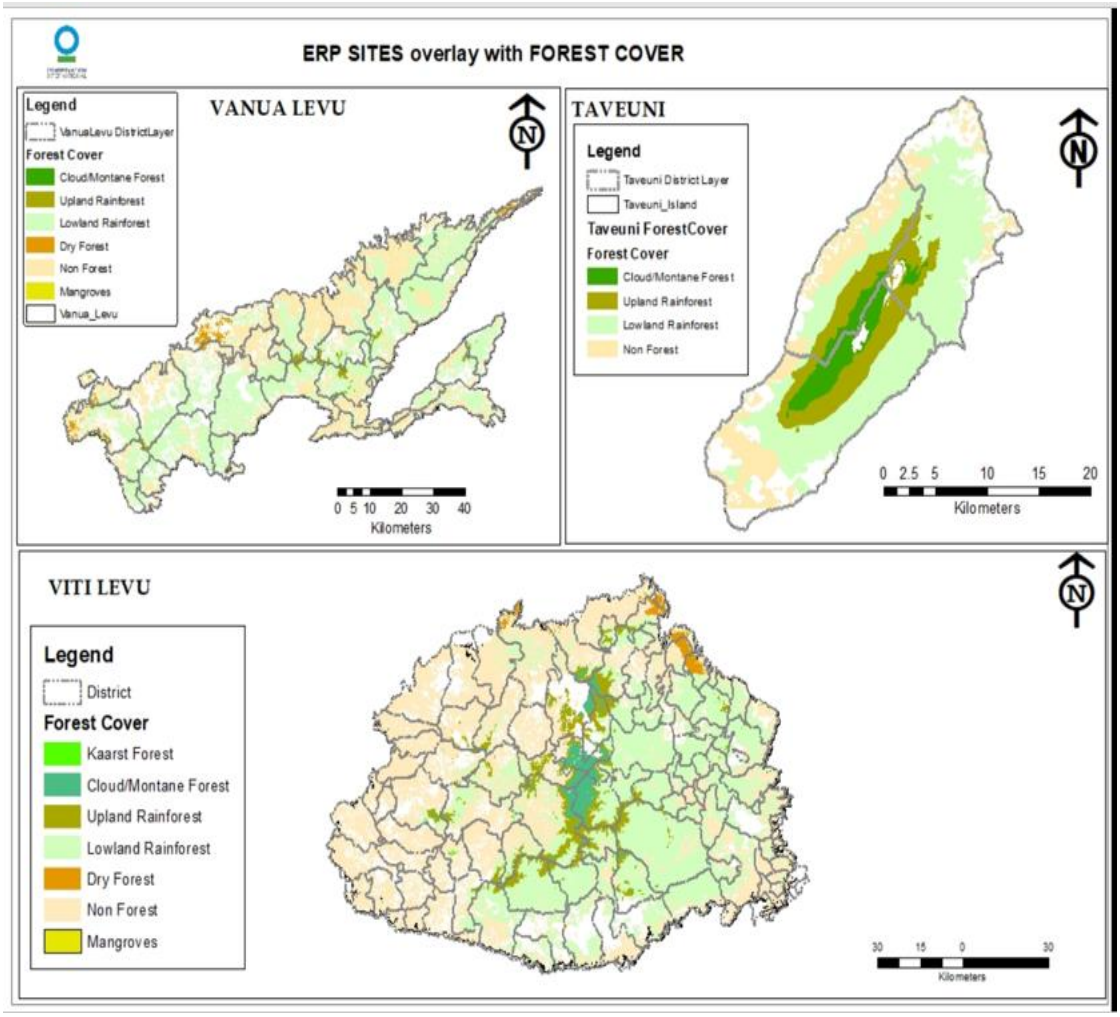


Figure 3-2: Forest Cover Map of the ER-P Accounting Area & Forest Cover Map (2010)

3.2 Environmental and social conditions in the Accounting Area of the ER Program

3.2.1 Existing vegetation types

The national forest cover reported in the National Forest Inventory Report (2005 -2009) considered only the seven biggest islands in the Fiji group. The forest types surveyed were native forests, mangroves and forest plantations (pine and mahogany). The NFI covered 94% of Fiji's land area.

The national forest cover in 2009 is estimated at 1,105,077 ha[7] and comprised of 914,868 ha of native forests, 76,472 ha of pine plantations, 59,548 ha of mahogany plantations, 3,800 ha of community-based pine plantations and 54,189 ha of mangroves (Table 3-3). Plantations do not include coconut palm trees.

The ER-P area contains 95% of the national forest cover or 1,048,464 ha and includes 863,755 ha of native forests, 72,754 ha of pine plantations, the entire mahogany plantations and 52,387 ha of mangroves (Table 3-4).

Table 3-3: National Forest Cover

Islands	Land Area (Ha)	Native Forest (Ha)	Pine Plantation (Ha)	Mahogany Plantations (Ha)	FPT Pine Plantations (Ha)	Mangrove (Ha)	Total Forest Cover (Ha)
Viti *Levu*	1,038,900	517,702	41,676	45,835	2,031	27,523	634,766
Vanua Levu	554,257	314,360	28,483	13,714	622	24,864	382,043
Taveuni	43,400	31,712	0	0	0	0	31,712
Kadavu	41,100	29,113	1,482	0	825	1,510	32,930
Gau	19,000	8,017	1,030	0	322	154	9,522
Koro	10,890	6,727	0	0	0	0	6,727
Ovalua	10,640	7,237	0	0	0	139	7,376
Total	**1,718,187**	**914,868**	**72,671**	**59,548**	**3,800**	**54,189**	**1,105,077**

Source: National Forest Inventory Report (2005-2009), MOF

Fiji Pine Trust (FPT Pine Forests) are community-based woodlots of areas greater than **100 ha.**

Table 3-4: Forest cover in the ER-P area

Forest Types	National Total (Ha)	ER-P Accounting Area (Ha)				
		Viti *Levu*	*Vanua Levu*	*Taveuni*	Total	% of Total
Natural Forest	914,868	517,702	314,361	31,712	863,775	**94%**
Pine Plantation	76,472	43,637	29,117	-	72,754	**95%**
Mahogany Plantation	59,548	45,835	13,713		59,548	**100%**
Mangrove	54,189	27,523	24,864		52,387	**97%**
Total Forest Cover	**1,105,077**	**634,697**	**382,055**	**31,712**	**1,048,464**	**95%**
Land Area (Ha)	1,837,600	1,038,900	554,257	43,400	1,636,557	

[7] National forest inventory Report (2005 – 2009).

Forest Types	National Total (Ha)	ER-P Accounting Area (Ha)				
		Viti *Levu*	*Vanua Levu*	*Taveuni*	Total	% of Total
Forest Cover %	**60%**	**61%**	**69%**	**73%**	**64%**	

Source: National Forest Inventory (2005 -2009)

Fiji's remaining native forest is confined mainly to areas of high rainfall and elevation as well as steep slopes, with much of the accessible lowland forest cleared for timber production, converted for agriculture or other land uses. On Viti Levu, the occurrence of the native forests is predominant in the hills of Naitasiri, Nadroga/Navosa and Ra and spreading onto the slopes of Ba, around the summit of Mt. Tomaniivi. On Vanua Levu, the native forests occur mainly within the provinces of Cakaudrove and Macuata, around the islands highest peak, Mt. Sorolevu.

Establishment of pine plantations (*Pinus caribbean*) began in the 1940's as part of an afforestation program to arrest the silt problem within the province of Ba. Large volumes of silt found its way into the Ba River after prolonged and heavy rainfall, causing flooding in the lowlands and to the sugarcane fields. The Government, with the support of the NZ Aid program, initiated a tree-planting program to address this environmental concern. Pine was one of a handful of potential timber species that was tested and found to thrive well in Fiji. In the early 1980s pine planting escalated to an industrial scale as it became an attractive timber commodity on the global market. The Government also found an avenue to generate employment and support the rural economy. The issuance of work contracts for pine planting were not restricted to the landowning units of the provinces but attracted workforces from the maritime islands, who sought income to support village development such as building of village halls, churches and schools.

Pine plantations are predominant in the western and drier side of Viti Levu, mainly on grasslands within the provinces of Ba, Nadroga/Navosa and Ra and near Tropik Wood Industries Ltd. sawmill and processing center, which is located approximately 15 kilometres out of Lautoka city. Tropik Wood Industries is a subsidiary of Fiji Pine Ltd (See Table 3-5). On Vanua Levu, the pine plantations are more predominant in the Bua and Macuata provinces, where the terrain is moderate, and the climate conditions are drier. The first plantations were established at around the same time when planting began on Viti *Levu* and are now being processed at the processing center in Bua, which was built in 2008. Details of Forest areas in Fiji is outlined in Table 3-5.

Community-based pine woodlots, which are under the stewardship of the Fiji Pine Trust (FPT), occur mainly in the central division (even larger areas are planted on the maritime islands) and were established mostly through the Department of Forestry extension program in the 1960s. Woodlots that are above 100 ha in area size are registered as a potential log supplier and are provided technical assistance under the scheme administered by FPT. Many of these woodlots are planted as community projects on barren and idle land. Over the years community woodlots have matured and provides an alternative income source for the local communities.

The mahogany plantations (*Swietenia macrophylla*) were also part of Government's program. Large scale planting of mahogany began after the pine program was hived off and corporatized in the mid-1990. Logged native forests are reforested with mahogany and with the aim of establishing an alternative source of timber. In 2000, the mahogany plantations were also corporatized and now managed by the Fiji Hardwood Corp. Limited. The mahogany plantations are largely in the central division in wetter conditions and in the provinces of Serua and Tailev*u*. Similarly, on *Vanua Levu* the plantations thrive in the interior of Cakaudrove and Bua. Processing of the mahogany resource began after corporatization and is one of the most sought-after log-supply.

The FAO Fiji Forest Outlook Report (2010) suggested the set up a "holding Company" incorporating the indigenous forests, the hardwood plantations, and the softwood Plantations into a single unified, overarching coordinating body to provide better coordination and address log demands while working towards reduction of the harvesting native forests. With the Hardwoods Corporation remaining within the Ministry for Public Enterprises, the indigenous forests and community plantations (mainly conifers) are under the Ministry Forestry. Fiji Pine Ltd. standing more-or-less on its own, is under the MOF who coordinate policies and activities in the national interest.

Fiji has a considerable area of mangroves within the ER-P area, i.e. over 52,000 ha. The distribution of mangrove is irregular, and the largest formations are found in the delta plains and around the mouths of the larger rivers in Fiji such as the Ba, Rewa, Nadi Rivers on Viti *Levu* and the Labasa River on Vanua Levu. There are 8 mangrove species and a unique sterile hybrid (*Rhizophora x selala*), which is also found in Tonga and New Caledonia (Watling, 1985).

Table 3-5: Forest Distribution by Province (ER-P Accounting Area)

Divisions	Province	Native (Ha)			Plantations (Ha)			Mangrove	Provincial Total (Ha)
		Closed	Open	Total	FPL	FHL	FPT Pine		
WEST	Ba	30,814	32,726	63,540	27,173	7,812	1,202	11,615	111,343
	Nadroga – Navosa	47,857	45,218	93,075	12,618	769	278	1,023	107,763
	Ra	46,678	23,877	70,555	1,024	291	137	1,634	73,641
CENTRAL	Naitasiri	112,314	28,370	140,684	12	4,474	-	294	145,464
	Namosi	27,014	11,200	38,213	3	5,246	-	959	44,422
	Rewa	12,274	988	13,262	-	-	-	4,081	17,343
	Serua	25,090	22,602	47,692	18	16,852	-	1,147	65,709
	Tai*levu*	22,754	27,927	50,681	828	10,390	344	6,769	69,012
Viti *Levu* Island		**324,796**	**192,906**	**517,702**	**41,676**	**45,835**	**1,961**	**27,523**	**634,696**
NORTH	Bua	41,572	34427.04	75,999	18,773	6,488	405.39	7,095	108,760
	Cakaudrove	98,121	75440.38	173,561	5,157	5,023	36.26	9,714	193,492
	Macuata	34,617	61895.51	96,512	4,553	2,203	192.07	8,054	111,515
***Vanua Levu* Island**		**174,310**	**171,763**	**346,073**	**28,483**	**13,714**	**634**	**24,864**	**413,767**
Totals		**499,105**	**364,669**	**863,775**	**70,159**	**59,548**	**2,594**	**52,386**	**1,048,463**

Note: Cakaudrove Figures include *Taveuni*.

Source: CIA World Facts Data Base

3.2.2 Climatic conditions

Fiji's climate is tropical marine with only minor seasonal temperature variation, but this can vary from year to year due to the El Niño- Southern Oscillation. The country has two distinct seasons – a warm wet season from November to April and a cooler dryer season from May to October; average maximum day-time temperatures can be as high as 32°C, night- time temperatures can be as low as 18°C. Rainfall across Fiji can be highly variable. On Fiji's two main islands Viti *Levu* and *Vanua Levu*, rainfall is strongly influenced by high mountain peaks up to 1300 m. On the south-eastern slopes of Viti *Levu*, near Suva, the average annual rainfall is about 3000 mm. In contrast, the lowlands on the western side of Viti Levu, near Nadi, are sheltered by mountain ranges and have an annual average rainfall of 1800 mm with a well-defined dry season favourable to crops such as sugarcane.

Tropical cyclones usually affect Fiji between November and April, and occasionally in October and May in El Niño years. In the 41-year period between 1969 and 2010, 70 tropical cyclones passed within 400 km of Suva, an average of one to two cyclones per season. Over this period, cyclones occurred more frequently in El Niño years. In 2016, TC Winston, at category 5 was the worst cyclone recorded to have made landfall in Fiji.

Fiji's climate change and impacts[8] are expected to have the following characteristics:

- temperature increase as it is expected that temperatures will continue to rise with more very hot days;
- rain fall has not changed yet, there is uncertainty around rainfall projections as model results are not consistent, however, projections generally suggest a decrease in dry season rainfall and an increase in wet season rainfall over the course of the 21st century;
- less frequent but more intense tropical cyclones are predicted there is likely to be an increase in the average maximum wind speed of cyclones by between 2% and 11%;
- sea level is expected to continue to rise and will lead to saline intrusion; and
- increasing ocean acidification into the future.

3.2.3 Soils and topography

The larger, older islands have mountainous interiors rising to 1320m, comprising dissected volcanic landforms, uplifted marine sediments, and limestone. Fiji is about 800 km west of the Tonga Trench where the Pacific Plate is being sub-ducted at rates of about 8 cm per year. The soils of Fiji are formed largely from volcanic basalt, soils can be weakly developed from calcareous, metamorphic rocks, and volcanic rocks. Alluvial coastal plains extend from valleys, and their shores have fine muddy sediments where there is offshore protection by coral barrier reefs.

A national soil survey conducted during the 1980s has provided Fiji with a comprehensive land use capability classification system based on that of New Zealand, but modified in 1977 to suit Fiji's conditions, and described in the Department of Agriculture[9] (ref Box 3-1). Application of land use classes (LUC) across the accounting area indicates over 50% of the land have steep terrain as outlined in Table 3-6.

BOX 3-1: SOIL CLASSES

I. Young sandy soil formed around the coast of the islands;
II. Fertile, deep agricultural important alluvial soils occupying the valley bottoms;
III. Shallow and moderately deep, dark colored nutrient rich soils on the rolling and hilly lands;
IV. Sandy and silty moderately-deep to deep soils formed from volcanic material containing particles of un-weathered parent material;
V. Deep, highly weathered clay-rich soils, often acidic and of low base saturation, derived from basic parent material;
VI. Deep, highly weathered oxide-rich clay soils of limited agricultural value;
VII. Deep sandy soils derived from acidic parent material having clay increases in subsoils, usually strongly weathered and of low base saturation;
VIII. Gleys and peats occupying low-lying areas in valleys or on plateaus.

Table 3-6: Slope and land use classes in accounting area

Slope group(s)	LUC Class	Viti *Levu*	*Vanua Levu*
Flat (0-3^0)	I	16%	15%
Undulating to rolling (4-15^0)	II-IV	17%	13%
Steep land (>16^0)	V-VIII	67%	72%

Source: MFF, 2007. National Action Plan to combat desertification/land degradation to mitigate against drought. at https://knowledge.unccd.int/sites/default/files/naps/fiji-eng2007.pdf

[8] Fiji Meteorological Service, Australian Bureau of Meteorology and CSIRO, Pacific Climate Change Science Program
[9] Land Use Capability Classification System: A Fiji guideline for the classification of land for agriculture. Classes I to III are considered suitable for ploughing and cropping, IV for low intensity cropping, V to VII for pastoral and forestry use and VIII only for protection purposes.

3.2.4 Biodiversity

The uniqueness of its biodiversity distinguishes Fiji from all other countries in the Pacific region. Much of Fiji's biodiversity is unique to Fiji. There are 1,769 recorded native vascular plant species in Fiji of which 50% are endemic. Current best estimates suggest that Fijian flora consists of 310 pteridophytes and at least 2,225 seed plants. Over 90% of some insect groups, such as cicadas and marine insects, are all endemic. Out of a total of 27 reptile species, 12 are endemic.

There has been a loss of certain forest types, some of which were once extensive in Fiji. Fiji's remaining native forest is now mainly confined to areas of high rainfall, high elevation and steep slopes, with much of the accessible lowland forest cleared by loggers or converted to plantations, agriculture or settlement. The exploitation of forests for timber has played a major role in deforestation and significantly affected forest quality and diversity.

The Global Forest Assessment Report (FRA) 2015 reports a decrease in the area of closed forests by 7,500 ha and an increase in the area of open forests by 13,790 ha between 1991 and 2010. The report forecasts that by 2025 the area of closed forests would stand at 524,476 ha with the open forest area increasing to 483,634 ha.

Efforts to focus on sustainable management of forest through harvesting regimes focusing on improved engineering standards[10] (road and crossing construction) and tree felling regimes[11] as well as techniques to reduce the impact of logging on the residual vegetation is ongoing. Despite these improvements in harvesting regimes, forest degradation is rife and about 40% of native forests are degraded due to logging (mainly planned but not always controlled), clearance for agriculture or timber extraction; collection of firewood, and the growth of invasive vine and tree species. Mangroves face similar pressures, and they have declined in area by 25% between 2003 and 2013[12]. Increasing risk of droughts, fires and landslides due to changing rainfall patterns and intensity along with cyclones are increasing the vulnerability of native forests and mangroves. Approximately 2.7% of native forests are currently protected, and there are plans to protect an additional 14%.

Unplanned and uncoordinated tourism activities can become a major threat to Fiji's biodiversity. In particular habitat destruction in the coastal areas for tourism development is a major threat to Fiji's biodiversity in the mangrove, estuaries, reefs and foreshore ecosystems.

Fiji has undertaken several initiatives to progress towards biodiversity conservation in the country, and these are documented in Fiji's Fifth National Report to the CBD. The 2013 State of Conservation in Fiji assessment also outlines key achievements in conservation in Fiji, with focus on the size and type of protected areas and governance initiatives in the country (SPREP, 2016). Fiji has a preliminary register of sites in the 1992 National Environment Strategy, 32 Key Biodiversity Areas (KBA), 28 Important Bird Areas (IBAs13), and two Endemic Bird Areas (EBA). There are currently five recognized Alliance for Zero Extinction (AZE) areas in Fiji as outlined in Figure 3-3.

The National Environment Strategy (NES) provides a list of 140 Sites of National Significance with recommendations that a formal legislative process be enacted to give them greater protection from destructive development. There are 16 Forest Reserves (22,214 ha)[14], 6 Nature Reserves (5,373 ha)

[10] Improving the National Code of Harvesting Practice was also undertaken and supported by the Aus-Aid funded ForTech program (1998 – 2000)
[11] Reduced Impact Logging under the SFM Project funded by GTZ
[12] Fiji Climate Vulnerability Assessment (2017) and Gonzalez et al. 2015.

[13] Total IBA area 5.88M ha. Total number of bird species 108, globally threatened 14 and country endemics 36
[14] 2015 Key Statistics, Ministry of Forestry

and 15 Parks (16,912 ha) within the ER-P accounting area. The reserves were established and declared during the colonial era, with the first - *Taveuni* Forest Reserve, declared in 1914 (Erasito 2011).

The Sovi Basin Protected Area (SPBA) in the province of Naitasiri is Fiji's largest intact protected area of lowland forest, encircled by the mountain ranges of Medrausucu to the west, *Koro*basabasaga to the south and Nakeva-Naitaradamu to the north-east. The Sovi Basin has been recognised as a priority site for conservation since the 1980s. It is designated as a Key Biodiversity Area by Conservation International and listed as an Important Bird Area by Birdlife International (Masibalavu and Dutson, 2006). The area covers over 16,340 ha with a Conservation Lease issued to the National Trust of Fiji (NTF) in 2012 but is co-managed with the landowning units of the area.

Work to register three terrestrial protected areas began in 2012 through the Global Environment Fund-Pacific Alliance for Sustainability 4 "Forests and Protected Area Management (GEF PAS 4 FPAM) project. The project, which ends in January 2019, will prepare for the registration of:

a) 6,700 ha as the Greater Delaikoro Protected Area, which is situated in and around Mt. Delaikoro and Mt. Sorolevu on Vanua Levu;
b) A consolidation of 15,268 ha of the two existing reserves as the *Taveuni* Protected Area on the island of *Taveuni*;
c) 5,615 ha as the Greater Tomaniivi Protected Area, which is an extension of the 2 existing reserves, in and around Mt. Tomaniivi in the centre of Viti *Levu*.

The project's key achievements include:

a) The formulation of the national framework and strategic action plan for establishing a system of terrestrial protected areas in Fiji (2018)[15]; work is currently being undertaken to develop a national framework that is inclusive of the marine protected areas;
b) Development of a 24-module (6 levels) training program on Biodiversity Conservation and Protected Area Management that will be offered in 2019 out the Forestry Training Centre of the MOF.
c) Development of a Tool Kit[16] on Biodiversity Conservation to support Primary-Level education; the tool kit is currently being used by the Ministry of Education;
d) Support for the Nabalasere ecotourism venture[17] in the province of Ra as an alternative livelihood activity that supports the village development plan.

This work is guided by the National Biodiversity Strategic Action Plan (NBSAP) of the Ministry of Waterways and Environment. The MOF' 2017 Strategic Plan has included activities initiated by the GEF PAS 4 FPAM project under its conservation priorities. One of the main aims of biodiversity conservation work is the involvement and participation of the landowning communities in the management of the sites. The forest and nature reserves, which were declared during the colonial era and solely managed by the Government, through the MOF, has no provisions for this arrangement. The Sovi Basin Protected Area has provided a framework for appropriate organizational structures that provide a channel for landowning units to be heard and fulfilling the Cancun Safeguard Principles.

3.2.5 Population and Forest Dependency

The culture in the modern Fiji is a tapestry of Fijian, Indian, European, Chinese and other nationalities having evolved over time as Fiji embraces other races to become the central and most important trading post across the Pacific region, linking the Pacific to Australia, New Zealand and other developed countries.

[15] Work on the development of the national framework by the IUCN-ORO
[16] Work on the Tool Kit done by the NZ Landcare (2017)
[17] The Nabalasere venture earns an average FJ$3,000 per month compared to totalling earning of FJ$3,000 recorded prior.

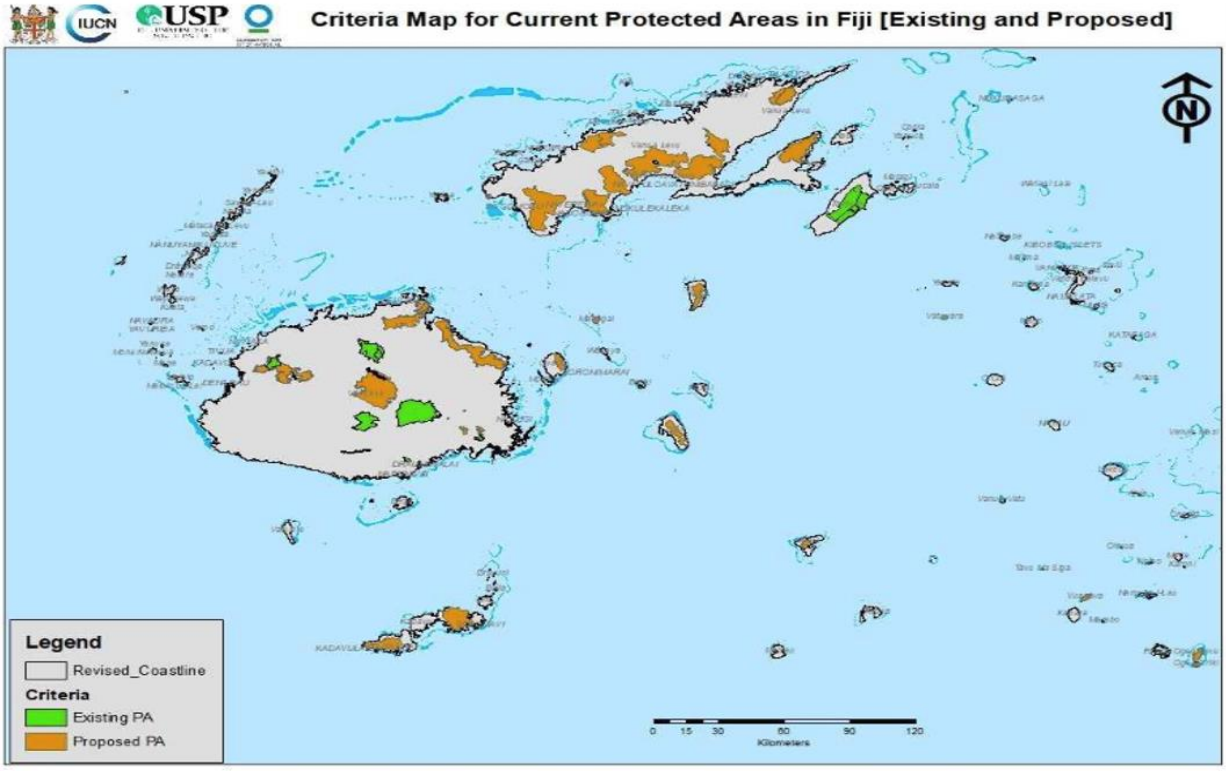


Figure 3-3: **Terrestrial Protected Area Priorities**

The iTaukei (indigenous) society is based on communal dwelling where extended families commonly live together. Hierarchy of chiefs presides over villages, clans and tribes. Leadership is heredity along the eldest male child and primogeniture in nature. The largest social unit is called Yavusa which consists of sub-clans called Mataqali. Each Mataqali have a specific role in the community. A full-fledged Yavusa would consist of Chiefly Mataqali, an immediate henchman clan who may be responsible for installing the Chiefs, the herald clan who are responsible for ceremonial functions, the priestly clan, responsible for interceding with the Gods on behalf of the Chief and his people; the warriors and skills or tradesmen (Figure 3-4). The later may be skilled fishermen, carpenters, poets, composers, treasurers and other specific skill sets that complement and contribute to the welfare and wellbeing of the whole Yavusa and specifically to service the needs of the Chiefly clan. Mataqalis may be further divided into sub-clans called Tokatoka.

Several Mataqali constitute a village, several villages make up a District, several District make up the Province. The provinces are divided into three (3) Matanitu or confederacies. The confederacies include Kubuna, Burebasaga and Tovata as outlined in Figure 3-5.

The iTaukei language has many dialects of which there is general distinction between Western, Central and Eastern parts of the country. While English is the formal language, other languages common in the country include Hindustani, Fiji Hindi, Cantonese, Rotuman, Gilbertese, Tuvaluan, Tonga and Samoan, indicating the diverse culture and origins of the population in Fiji.

A common denominator among the various cultures is the use of forest and non-timber products for food, traditional medicine, firewood and others. Forest resources provide important raw materials to cultural arts. For instance, tapa cloth (masi) made from mulberry tree is considered a women's craft. Women beat the bark of mulberry trees into tapa cloth and decorate it with charcoal and natural dyes. Symbolic motifs and patterns tell a story and each Province have distinct patterns. The tapa cloth is often used in ceremonial function and exchanged as traditional gifts. Carving is practised by men who

have traditional knowledge of the tree species associated with each item. For instance, the hull of a boat and a warrior club require specific species and treatment.

Forest habitats, flora and fauna therefore play an important role in the daily lives of local population. Each clan have totems associated with natural resources around them. Totems may be a plant, animal, bird or marine life. It may be related to historical event in the past that forms cultural identity, providing a direct connection between society and the natural system around them.

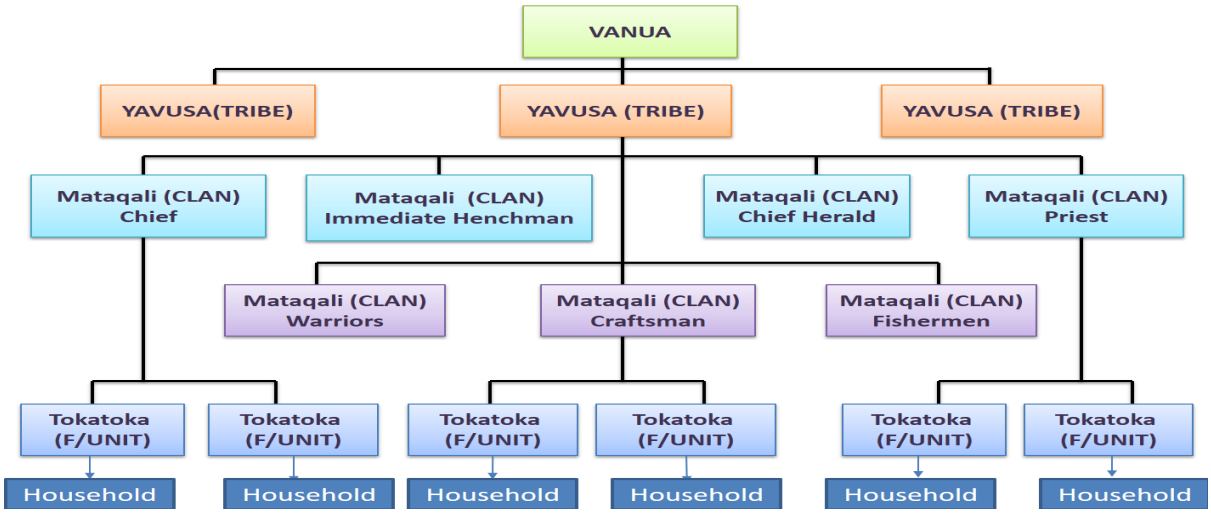


Figure 3-4: Traditional Governance Structure

The modern Fiji now have more population living in urban areas along the coastal areas of main islands. Forested areas on the lower to mid slopes contain many seasonal native and introduced fruit trees, including pawpaw, banana, oranges, kavika (Malay apple), mango, ivi (Tahitian chestnut) and coconut. Villagers harvest and collect these for personal consumption and to sell at local markets. Villagers fish for prawns and eels in almost all the rivers and creeks that flow out from the range, mainly for subsistence consumption, with extra catch being sold at local markets at a reasonable price.

Pig hunting is practised in nearly all the villages but is not as common a practice as it was historically, due to increased accessibility of shops for other meats and other household needs. Hunting is mainly carried out by a few individuals who dare to travel long distances into the forest. Pigs that are caught supplement the family meal, are sold for meat or used in traditional ceremonial functions.

Forests are also a source of fuelwood and construction timber. Fuelwood is sourced from the fringes of the forest near villages, while construction timber is harvested from native forest or pine woodlots that are scattered around the periphery of the village.

There is a strong and definite relationship between people, communities and their dependency on the forest within the ER-P area for the following reasons: -

a) Land Tenure System

As evident from Table 3-6, 15% of the area in the ER accounting region are on flat coastal land where 60 % of the population reside. Rural area predominately covers 69% of the ER-P accounting region. Section 4.5 discusses land and resource tenure in the accounting area highlighting the three main categories of land tenure and indicating that 89% of forest lands are owned by iTaukei landowners.

b) Social Hierarchy

iTaukei clans are legally supported to use the land and its resources for sustenance and wellbeing. Section 4.6 discusses the key legislations pertaining to the ER-P and how it influences the use of land and resources on the land by iTaukei landowners.

c) Economic wellbeing

Many landowning units lease their lands for economic gains as a source of new revenue streams into local iTaukei communities. As evident from Figure 3-6, much of the revenue generated from land leases on iTaukei lands come from residential and agriculture.

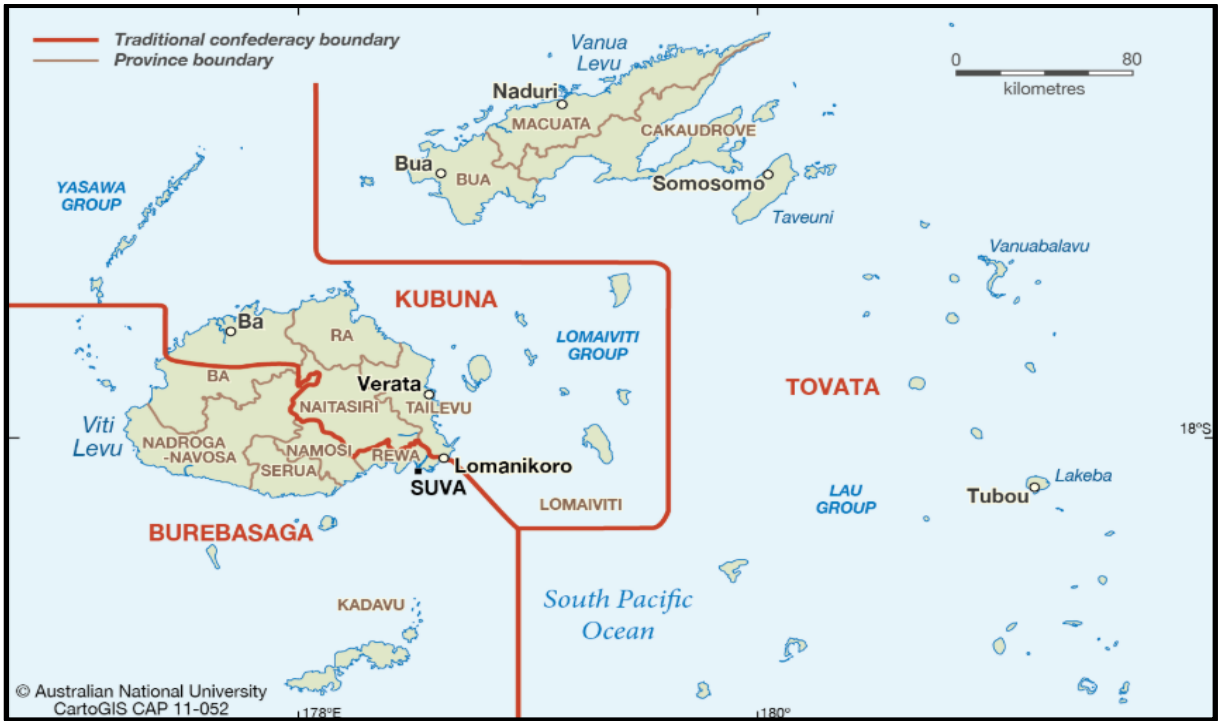


Figure 3-5: Traditional Confederacy and Provincial Boundaries of the accounting area

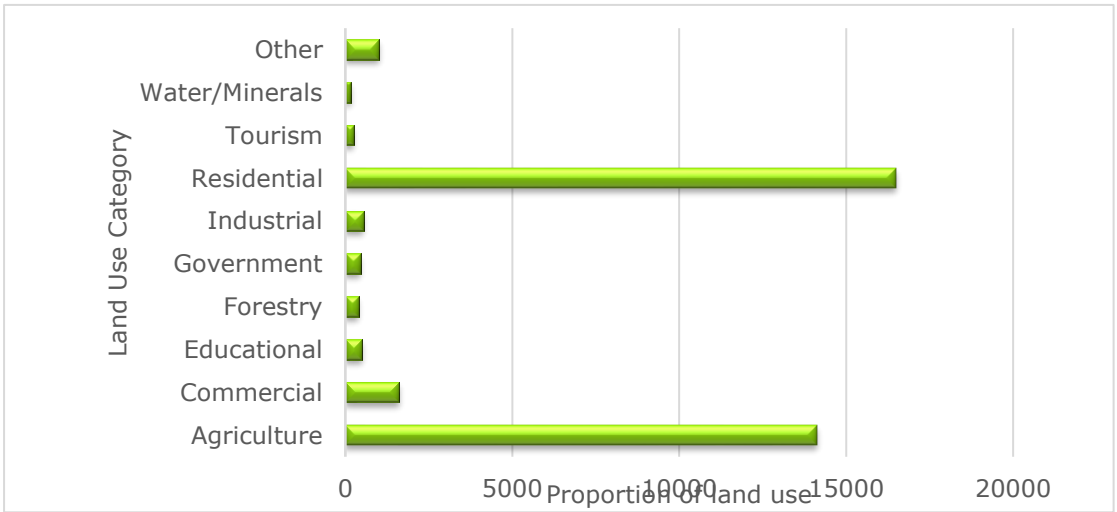


Figure 3-6: Categories of land leases with TLTB

Sacred forests are symbolically important to the owners of customary land. For instance, rituals associated with the confirmation of social hierarchy and power structures such as offering the first wild harvests of the year to the chiefs in recognition of the bounty of the goods are important in traditional Fijian indigenous culture. They are of important cultural significance to households on the ER-P islands. Based on consultations undertaken for the SESA there appear to be fewer instances of this occurring nowadays due to pressing economic demands.

4 DESCRIPTION OF ACTIONS AND INTERVENTIONS TO BE IMPLEMENTED UNDER THE PROPOSED ER PROGRAM

4.1 Analysis of drivers and underlying causes of deforestation and forest degradation, and existing activities that can lead to conservation or enhancement of forest carbon stocks

The analysis of drivers of deforestation and forest degradation was undertaken at a national level with assessment undertaken across the accounting area. Results from the drivers' analysis, SESA, R-PP and ER-PIN indicate six direct drivers identified as follows:

- Forest conversion to agriculture;
- Poorly planned infrastructure development;
- Conventional logging;
- Natural disasters;
- Invasive species;
- Mining.

The drivers of deforestation and forest degradation vary between the three main islands in the ER-P accounting area. Given the results of assessment in Fiji's ER-PIN, study on Drivers of Deforestation and Forest Degradation, self-assessment of the R-Package; the REDD+ Steering Committee (RSC) and REDD+ stakeholders identified agriculture conversion, poorly planned infrastructure development and conventional logging as the critical drivers of deforestation and forest degradation. A summary of all drivers of deforestation and forest degradation is outlined in Annex 4-1. Key drivers that have a direct impact on ER-P interventions are discussed below.

Drivers of Deforestation

Conversion to agriculture (root crop and others)

Agriculture continues to be the backbone of Fiji's economy employing about 60% of the population and accounting for roughly ¾ of the total collective GDP from agriculture, forestry, and fishing industry in 2014. However, the sector has progressively declined its share in total economic activity due to decline in the sugar subsector and the rapid growth in tourism and infrastructure development.

There are more than 60 commodities listed in the 2009 National Agriculture Census, cultivated by more than 63,622 farmers operating 65,000 farms (MoA 2014). More than 75% of all households in Fiji engage in agriculture, livestock production, forestry, or fishing (UNCCD National Focal Point, 2007; GoF, 2015a; Akram-Lodhi, 2016). The agriculture industry is primarily driven by sugarcane and kava (known locally as "yaqona"). Other major crops include rice, taro (known locally as "dalo"), cassava, sweet potato, ginger, banana, and other vegetables. Tropical Cyclone (TC) Winston (category 5) hit Fiji in 2016, which impacted 62% of population and resulted in an estimated loss and damage across all sectors at FJ$2.85 billion (Esler, 2016).

One of the key contributors to deforestation is **indiscriminate clearing of forest**, particularly for subsistence, semi-commercial and commercial agriculture, predominantly for taro and kava cultivation. While taro market prices have been stable, the increasing market demand and price for kava has made it the most popular alternative for many rural landowners. Kava cultivators are predominantly iTaukei subsistence farmers who are transitioning to semi-commercial operation.

In the accounting area, farmers on Viti Levu commonly transition forest-on-farms to agroforestry, or forest-on-farms to grazing livestock for cattle, goats, and sheep. Commercial production is characterised by monocrop planting of either kava or taro in large tracts of land. Ginger has a stable market demand and is planted on slopes with good drainage. Farmers also practice forest clearing to prepare planting areas, but it is not as widespread as kava and taro.

On Vanua Levu, in the Provinces of Macuata, Bua and Cakaudrove, including the island of Taveuni; trees-on-farms are noted to transition to commercial root crop production – predominantly taro and kava

in addition to aquaculture and settlements. Expansion of kava production is characterised by upland cultivation, often with mixed crop of taro/kava followed by fallow period of 3-6 years.

On the island of Taveuni, agriculture activity is characterised by commercial production of monocrop kava or taro in large tracts of land. At the same time, subsistence cultivation is practiced using traditional farming systems of agroforestry/mix cropping regime.

Farmers in rural and semi-urban areas are either landowners or lease holders. Landowners have right of access to use their land for sustenance and commercial cultivation.

Tenant farmers are issued 30- year Agriculture Lease from the iTaukei Lands Trust Board or the Department of Lands. The iTaukei Lands Trust Board issues leases on communally owned iTaukei lands while the Department of Lands issues leases on State lands. Lease holders with forest-on-farms can clear-fell these forests for agricultural production. Often, lease holders are commercial or semi-commercial farmers with holding of 2.5 to 5ha.

Although not identified as a key driver to deforestation and forest degradation, commercial livestock farming is confined to the wetter areas of Viti Levu and Vanua Levu on land classified under land capability V-VII. Agriculture Census in 2009 indicate that 44% of farms with livestock operate in areas of less than 1 ha, some 35% of farms have areas of less than 5 hectares and 20% of farms with areas over 10hectares. This indicates that more small holder farms with insufficient farmland maintain cattle on farms. Such small-scale farmers across the accounting area practice subsistence livestock farming. Among iTaukei communities' cattle are often let loose into forests for grazing. Roaming livestock in the forest not only is a threat to hygiene in natural creeks but also impedes natural regeneration of forest. On the other hand, semi-commercial farmers on leased lands clear-fell trees-on-farms to support cattle rearing. Clearing of forest for pastures not only results in forest loss but also has high probability of contributing towards forest degradation.

Current land use in the accounting area is reflected in Table 4-1 with indication of important land use associated with deforestation and forest degradation.

Table 4-1: Key drivers in Accounting Area

ER-P Island	Current Drivers of Deforestation and Degradation by Island			
	Deforestation	**Relative importance**	**Degradation**	**Relative importance**
1. Viti Levu Central and Western Divisions 10,388km2	Logging (Conventional)	++	Selective logging	+++
	Settlement	++	Settlement	++
	Infrastructure, (esp. roads)	++	Infrastructure, (esp. roads)	++
	Agriculture crops subsistence agriculture	++	Agriculture crops subsistence agriculture	++
			Sugarcane (mainly historical)	++
	Plantations - pine woodlots	+++	Pine woodlots	++
			Mahogany plantations in the natural forest	+++
	Plantation pine waste wood – Firewood	+++	Firewood	++
	Tourist investments (loss of mangroves)	++	Tourist investments (loss of mangroves)	++
			Cyclones locally severe, intense rainfall may cause more damage than the wind	+++
			Fire from sugarcane burning	++

ER-P Island	Current Drivers of Deforestation and Degradation by Island			
	Deforestation	**Relative importance**	**Degradation**	**Relative importance**
2. *Vanua Levu* Northern Division 5,587km2	Logging (Conventional)	+++	Conventional logging	+++
	Plantations/ wood lots conversion of natural forest	++	Plantations/ wood lots conversion of natural forest	++
			Pine wood lots	++
	Subsistence agriculture	++	Subsistence agriculture	++
	Taro	++	Taro	++
	Kava	+++	Kava	+++
			Firewood, copra dryers	++
	Infrastructure	++	Infrastructure	++
	Mining (but can be locally severe)	+++	Mining	+++
			Cyclones locally severe, intense rainfall may cause more damage than the wind	++
			Fire from sugarcane burning	++
3. *Taveuni* (included in Cakaudrove province) Northern Division 434km2	Subsistence & Commercial agriculture	+++	Subsistence & Commercial agriculture	+++
	Taro	+++	Taro	++
	Kava	+++	Kava	+++
	Settlement	++	Settlement	++
	Infrastructure, (esp. roads)	++	Firewood	++
	Tourism related	++	Tourism related	++
			Cyclones locally severe, intense rainfall may cause more damage than the wind	++

Unplanned infrastructure development

The Study on Drives of Deforestation and Forest Degradation identified several types of forest conversion to infrastructure. These include construction of roads, hydropower dams for electricity; urban development and resettlement; tourism and other infrastructure. Fiji does not have a **national land use plan**, which is a major constraint to resource allocation and management in the rural sector and is of critical importance to ensure rationalised infrastructure development that considers impacts on all land-based resources such as forest, agriculture, minerals, rivers and streams (GoF, 2015a).

Road and transport: An estimated 4,254 km of road network exist in Fiji of which 1,483km are sealed. Main logging roads in newly logged forest are often upgraded for public assess by the Ministry of Rural, Maritime Development and Natural Disaster following logging operations; providing opportunities for settlements and conversion of forest to monocrop or mixed crop production systems. As such, the underlying catalyst for road construction is the need to meet economic and social needs of rural populations to access markets, urban centres, health and education services.

Hydropower: The government's goal of bringing electricity to rural communities as a means of addressing poverty has driven the country towards hydroelectric development. Around 60% of the country's electricity requirements are met from renewable energy sources (62% hydroelectric, 4% biomass, 1% wind), with imported petroleum for thermal generation meeting the remaining 33% (Department of Energy, 2014). Fiji's potential for additional hydroelectric power generation in the accounting area is significant, particularly through micro-dams. Fiji aims to have 100% renewable energy by 2036 (National Development Plan).

Urban development and resettlement - Rural-Urban Drift: Increasing population and the influx from rural to urban areas have resulted in significant urban development ensuing in encroachment on first-class arable land, and the construction of homes on top grade agriculture soils. Conversion to real

estate of prime agriculture areas have pushed agriculture to the marginalized rolling (unsuitable) hills of land capability class V-VII.

Tourism: Fiji's tourism industry has grown dramatically over the past decade. Over 650,000 tourists visit Fiji annually. In 2012, tourism contributed 18% of GDP while in 2016, tourism had increased to contribute 39% of GDP. The increasing influx of tourists coming into the country pose increasing pressure on and competition for natural resources between agriculture, infrastructure, housing and tourism (Narayan, 2015). Continual large-scale tourism development and urban expansion along coastal areas habitats are drivers of coastal carbon emission through mangroves clearance.

Unplanned infrastructure development poses a significant threat to forest areas. A critical underlying cause is increasing population which contributes to the influx of migration from rural to urban areas that has resulted in urban development on first-class arable land along the coastal flatlands of the ER-P area. Conversion to real estate of prime agriculture areas have pushed agriculture to the marginalized rolling hills with land capability class V-VII. Forest lands fall under this land capability classification.

Rapid expansion of cities and towns is prominent in the absence of a National Land Use Plan. A major barrier identified in the Drivers Study is the absence of a National Land Use Plan, posing as a crucial constraint to resource allocation and management of natural resources in rural areas. It is of critical importance to ensure rationalised infrastructure development that considers impacts on all land-based resources such as forest, agriculture, minerals, rivers and streams (GoF, 2015b).

Current efforts to address this is acknowledged through efforts by the iTaukei Lands Trust Board Master Plan for the entire coastal area on the island of Viti Levu. The Master Plan is an integrated land use plan that sets forth local goals, objectives and policies for community growth and/or redevelopment over the next 20-30 years. The plan covers coastal area approximately 10km inland from the shoreline around the whole of Viti Levu. It serves as a guide for existing and future land use while indicating zonation of natural resource allocation. Once approved by the Ministry of Local Governance and Town Planning, the Master Plan may serve as an ordinance, subdivision regulation for ensuring capital improvements are consistent with stakeholder/community goals and institutional policies as expressed in the Master Plan.

Agents for Deforestation

For commercial agricultural exploitation, agents include commercial farmers who are lease holders on either native or Crown Land. On *Taveuni*, private landowners make up a large portion of commercial farms. Other agents involved with the driver for forest conversion to agriculture production includes:

- Government development policies driven by national efforts towards food security (in terms of self-sufficiency and import substitutions) and export substitution – line agencies such as the Ministry of Agriculture, Ministry of Waterways and Environment, Ministry of Forest, Ministry of Lands;
- International market demands and key players in the marketing channel such as buyers of commodities at mill-gate, all private business entities that are involved with agriculture inputs, pre-harvest, post-harvest processing and sale (domestic and export) of all agricultural produce.
- Supporting agencies such as the Fiji Crop and Livestock Council, responsible for coordinating and aggregating large and small producers cultivating crops other than sugar;
- Local population, who are employed in the sector to meet market demands for agricultural produce.
- Lease holders, landowners and all players driven by self-interest to maximize profit through participation in the agriculture sector;
- The Ministry of Tourism, tourism industry and all related sectors whose growth has placed increasing demand on domestic agriculture production in addition to imports.

Infrastructure development has generally been driven by national efforts in pursuit of economic development and improved livelihoods. Key actors include:

- The Ministry of Infrastructure & Transport, who is responsible for policy formulation, planning, regulation, coordination, and implementation of services relating to transportation and public utilities;
- The Department of Town and Country Planning, whose role is to control and regulate land use Fiji;
- Quasi government organisations such as Energy Fiji Ltd., Fiji Roads Authority and Water Authority of Fiji;

- Local population, who require infrastructure development for improved standards of living and to accommodate population growth;
- The Ministry of Agriculture, Sugar, and Land Resettlement, responsible for relocating farmers when their leases expire;
- Commercial agriculture producers, whose expansion necessitates improved infrastructure to deliver products to market and ports;
- The Ministry of Tourism, along with hotels and tourism agencies, whose growth has placed increased demand on Fiji's energy production and transportation infrastructure.
- The Department of Environment, who is required to conduct an EIA for any development proposals, as well as to enforce environmental codes and standards.
- Tourists, with their increasing demand for infrastructure, products social and ecosystem services.

Underlying Causes for Deforestation

Three key factors are highlighted in the Study on Drivers for Deforestation include economic, social and cultural. Farmers in rural areas aspire to meet market demands in order to support domestic economic pressures such as education for family members, improve standard of living and other economic needs at the household level. Key agriculture commodities for communities at the forest frontier include kava and taro. Improved market access and strong global demand for kava and taro have driven production in the accounting area. The trend is anticipated to increase with increasing demand and consumer preferences from international markets such as New Zealand, Australia and the European market for kava. In terms of infrastructure development, strong performance of the tourist sector, driven by robust economic development has resulted in the influx of infrastructure development including roads, hotels, and other support structures. Fiscal tax incentives associated with construction and tourism tax measures have also directly supported and encouraged infrastructure development particularly along Fiji's coastal area.

Non-renewal of agriculture leases has caused an influx in migration of farmers from rural to urban areas, particularly from sugarcane producing areas. As a result, about 51% of Fiji's population live in urban areas, and this is expected to increase to 60% by 2030 when some 13,141 leases issued since 1997 under the Agricultural Landlord and Tenant Act will expire. Continued pressure is anticipated as the Fiji Bureau of Statistics projects one million people in Fiji by 2030. Increasing population and visitor numbers are believed to influence consumption patterns which are driven by raising incomes, better standards of living, change in consumer preferences and an increase in consumption of processed foods such as sausages, tin meat and others. A good proportion of the communities visited during field work were young and youthful. Statistics support this observation where the median age of Fiji's population is 27.5 years with 69% below the age of 40.

Kava is a valued traditional drink in Fiji with important cultural values. Extreme shortage of kava in the wake of Tropical cyclone Winston has escalated the price to an all-time high. Many subsistence farmers have transitioned to semi-commercial operations. The shift in aspirations is driven by economic gain but the mind-set and farming technique are limited to the small operations leading to excessive inefficiencies. For instance, kava production on small subsistence scale can accommodate up to seven kava stems in one raised mound where 100 raised mounds make a small farm. The scale of semi and commercial operation incorporates no less than 2,500 mound per hectare. Application of small-farm technique (seven stems per mound) have inefficiencies that may result in more expansion and clearing of forests.

Given the land tenure system in Fiji, local decision-making and governance have an impact on all aspects of natural resource use. While infrastructure developments have supported commercial farmers, driven by self-interest to maximize profits to shift from subsistence to semi-commercial and commercial agriculture leads to intensive land resource utilization, and potentially adverse impact on ecosystem services.

Drivers of Forest Degradation

<u>Conventional Logging</u>
Commercial logging in Fiji largely follows conventional practices which allows the removal of all merchantable species in a logging coupe that have a girth of 35cm and above. In 2012, the Fiji Forest

Harvesting Code of Practice (FFHCOP) was revised, incorporating results from the Nakavu sustainable forest management research site. The results present diameter limits for key merchantable timber species. Coupled with the FFHCOP, conditions for application of reduced impact logging can be achieved in Fiji.

The Study on Drivers for Deforestation and Forest Degradation noted that rapid re-logging of native forest after coupe closure exacerbates forest degradation in the absence of restocking or restoration. Furthermore, the issue of Annual Licenses for timber extraction from logged native forests and constraints long term planning, limiting investment in best practices for sustainable forest management. Although legal framework and policies allow for the issuance of long-term license, there are only 2 long term licenses in Vanua Levu. Production from native forest have averaged at 50,731m^3/yr. during the Forest Reference Level period 2006-2016. Other types of logging licenses include clear fell licenses and firewood licenses. Clear fell license is predominately applied to agricultural clearance and forest right license for harvest of mangroves (for cremation and firewood). Firewood license is also issued to collect waste logs from logging sites for sale to businesses with industrial boilers.

Agents for Forest Degradation

The following actors and agents have direct influence over the driver of conventional logging:

- MOF, whose role is to regulate, develop, and enforce restrictions within the logging industry.
- Ministry of Waterways and Environment who are responsible for regulating Environment Impact Assessments under the Environment Management Act 2005;
- The Department of Lands and Department of Fisheries, who together – along with the MOF and Department of Environment – manage Fiji's mangrove resources; Department of Land for native logging in Crown Land as well as the establishment of Protected Area or Conservation Leases on all types of land tenure on behalf of the MOF.
- TLTB, whose consent is required for licenses to harvest timber on iTaukei land.
- Logging companies associated with timber harvests applying FFHCOP; includes Fiji Pine Ltd. & Fiji Pine Trust, Mahogany Industry Council, FHCL, Fiji Mahogany Trust; and landowners and loggers who are involved in pine, mahogany logging, post-harvest, processing, branding and marketing.
- Landowners, who either fell trees themselves or consent to activity on their property by commercial logging operations.
- Local population, with their demand for building materials and cleared land for expansion.
- Buyers of wood and timber that contribute to increased domestic and international demand on timber production.

Underlying Causes for Forest Degradation

Demand for timber to meet infrastructure development is driving local and international market prices while providing much motivation for maximization of log extraction and utilization. Underlying factors associated with consumer preferences have seen an insatiable demand for forest products in building projects; particularly for dark tainted local timber species.

The demand for construction materials over the past three years have been driven by investment in tourism projects such as the Grand Pacific Hotel, Denarau Casino Development, and others. Additionally, housing demands from increasing urban population as well as rehabilitation after Tropical Cyclone Winston has boosted demand for timber to an all-time high.

Fiji's tourism industry has grown dramatically over the past decade to become the lead economic sector. Over 650,000 tourists visit Fiji annually. In 2012, tourism contributed 18% of GDP while in 2016, tourism had increased to contribute 39% of GDP. The increasing influx of tourists pose cumulative pressure and competition for natural resources including agriculture, road infrastructure and housing (Narayan, 2015). Continual large-scale tourism development and urban expansion along coastal areas are drivers of coastal carbon emission through mangroves clearance. Rapid expansion of cities and towns is prominent in the absence of a National Land Use Plan. A major barrier identified in the Drivers Study is the absence of a National Land Use Plan, posing as a crucial constraint to resource allocation and management in the rural sector. It is of critical importance to ensure rationalised infrastructure development that considers impacts on all land-based resources such as forest, agriculture, minerals, rivers and streams (GoF, 2015b).

4.2 Assessment of the major barriers to REDD+

The barriers to REDD+ in the accounting region are assessed from the viewpoint of factors that may influence Fiji's path towards fulfilling the objectives and activities of the ER-P. Focus is placed on assessing the barriers to reducing emission on deforestation, forest degradation, and carbon stock enhancement. The barriers broadly relate to overall policies and governance; focus groups or stakeholders and how they interact to contribute forest loss and degradation; consideration of land use and management as well as a discussion on capacity of key institutions to overcome barriers.

4.2.1 Governance, institutions, policies, and cultural characteristics

Fiji has a complex system of natural resource management rules and regulations across several government agencies. For example, implementation of the FFHCOP is the responsibility of the MOF and is applicable to harvesting operations on both native and plantations. In support of this code of practice the Environment Management Act 2005, under the responsibility of the Ministry of Waterways and Environment, requires Environment Impact Assessments for all harvesting operations on native forest.

Logging operations are supervised by the MOF under the Forest Decree 1992. The Environment Management Act 2005 requires an Environment Impact Assessments for logging of native forest. While the Ministry of Waterways and Environment is responsible for representing and tracking the progress of implementation of Fiji's obligations towards international conventions such as the Convention on Biological Diversity, it is the MOF that is responsible for the on-the-ground implementation pertaining to terrestrial and mangrove forests. Moreover, the MOF is heavily involved in field work and often marginal in representation at national meetings across agencies resulting in deficient communications and reporting of forest-based initiatives.

Government roles are not well understood across sectors and social groups. There is also a gap in capacity for effective monitoring and enforcement of existing policies and regulations related to commercial and sustainable management practices. For example, the specific tools for the sustainable management of forests under FFHCOP and Forest Certification Standard have only been partially implemented but are not yet fully compliant. Diameter limits in the definition of conventional logging allows the extraction of any merchantable species of 35cm and above. Under sustainable forest management regime, the ideal situation is to apply species selection based on scientific research on recovery rates. Research supported by SPC/GIZ in Nakavu have developed native forest diameter limits ready for use. Although the Forest Decree 1992 and iTaukei Lands Act and regulations support the use of Diameter Limit Tables in native forests, the industry have not been receptive resulting in a long discourse and delayed implementation. Current efforts by the MOF is focused on mainstreaming the Diameter Limit Tables developed for native forests by the SPC/GIZ Nakavu research site.

Adding another level of complication – and, at times, inefficiency – is the dual structure of both traditional and conventional administration systems, particularly considering 88% of Fiji's land is held under customary ownership. Land leasing arrangements for individuals or groups that are outside the customary ownership system are complex. The existing shared space between common and customary law considerations on land and resource use lacks common approach. In addition, universal understanding of issues such as tenure and user rights, restrictions and responsibilities, duties and obligations is challenging in the face of multiple stakeholder interests.

4.2.2 Participation and coordination

Related to governance, Fiji continues to strengthen fully instituted robust participatory mechanisms and coordination across and within sectors, organizations, and groups. The limited coordination among agriculture, forestry, and fisheries sectors has resulted in mixed messages over the same land areas and resources. For example, while one institution focuses work on the sustainable forest management, conservation of forests and carbon stock enhancement, the other may be working towards extracting the maximum yield for a lucrative market. The balance and trade-offs between these decisions is not well understood and has not been adequately measured.

In most cases, the drive for economic opportunities far outweighs and can undermine the ecological and environmental benefits due to the lack of information that are readily available on the ecosystem service values and importance. The demand for proper ecosystem valuation is critically important to be able to make a well-informed decision on the most appropriate options.

At the community level, not all stakeholders understand the supporting traditional social structures, including the various hierarchies of customary leadership within landowning units and the complex social linkages amongst families and landowning units in different contexts. Given this lack of understanding, it is difficult to ensure comprehensive consultation, effective benefit sharing arrangements, and community support as they pertain to forest tenure.

Inherent in such social structures are also unwritten cultural norms, such as deference to the older generation in decision-making processes, which ultimately do not preclude anyone's right to speak and contribute positively. However, women are generally quiet in decision-making processes (especially those who are married into a village) but are asked individually for their consent when this is required to achieve a majority, for example, TLTB lease approvals. This reduces the use of resourceful human capital, as many of these women are well-educated while providing support to elders in the community as well as being good negotiators. Nevertheless, women have strong influence in the home and collectively have the capability of influencing decisions in an informal way. Despite Fiji's youthful population it is observed that young people may not be fully engaged in natural resource management and development work due to traditional hierarchy where the elders are expected to delegate roles and responsibilities. With Conservation Officer stationed at each Provincial Office, it is anticipated that new stream of ideas and advocacy will see more youth involvement in environmental issue at community level.

4.2.3 Land and resource use, management practices, and commercialization

Currently, there is considerable unplanned expansion of agriculture into forested and sloping lands with the perception that conventional unsustainable livelihood activities are more lucrative than sustainable forest management. This is exacerbated by the fact that the price of logs has not changed much in the last ten years and that the profits made by the companies are generally not shared with the landowners. In places, where communities have accrued logging benefits, promoting long-term benefits of sustainable forest management and conservation is very challenging. Communities often overlook the long-term gain from sustainable forest management and conservation, preferring the short-term gains from unsustainable logging due to uncertainties associated with long term plans. Combined with that is a lack of variety in economic activities and food production in certain areas. Rural areas within the accounting region have limited market access and opportunity to diversity cultivation of cultural crops. For instance, the Province of Naitasiri is heavily dependent on cultivating kava and taro while the Province of Ra focuses on production of kava and cassava. Taveuni is known for kava and taro while Macuata in Vanua Levu supports the dry land rice production in Fiji.

Attractive local and international market prices for agricultural products, wood products, and minerals have also motivated maximizing the extraction of forest products and land conversion to agriculture in pursuit of short-term returns. Along with these expansions, unsustainable agricultural and land management practices are applied, for example use of fires to clear the land or burn the sugar cane plantations to ease harvesting. If fires in the drier regions of the ER-P area; pre-harvest sugar cane burning, and/or re-burn of areas under natural or assisted regeneration pose a high risk to new seedlings and impeding enhancement of carbon stock. Frequent and successive fires in grassland are becoming common in the dry region of Fiji, near sugar cane plantations. This is made worse by the lack of ground cover which exposes the soil and exacerbate the risk of landslides and soil erosion.

A major barrier for forest conservation, sustainable management of forests and the enhancement of forest carbon stocks is the recurrent and frequent application (less than 10-year cycle for logging) of Annual License to landowners for the rights to remove logs for commercial purposes from native forests. The licensing process involves community owners, logging contractor, Ministry of Waterways and Environment, MOF and the iTaukei Lands Trust Board. Whilst the FFHCOP is in place to safeguard against the extreme environmental impact of the logging operations, there is a widespread lack of compliance (especially with the application of the Diameter Limit Table for the selection of trees to be extracted). As a result, degradation of native forests makes them vulnerable to fires.

There is also limited management of community-owned forests by landowning units. In many cases forest owning community strikes an agreement with their logging contractor of choice. The logging contractor becomes the Forest Manager for the duration of the logging license. Logging Plans,

Environment Impact Assessment and any other legally binding requirements are completed by the logging company with limited involvement of landowners.

4.2.4 Capacity and relevant knowledge

Shortage of human resource capacity has limited the capacity of the Fiji MOF to effectively implement the Fiji Forest Policy 2007. While the Forestry Training Centre in Suva offers Forest Technicians courses, the Ministry has a limited number of staffs with the required teaching skills. The Ministry has lost significant human capacity due to high staff turn-over. Furthermore, with the drive for service excellence, the civil service no longer supports paid study leave for staff to increase their technical capacity as part of on the job development. The MOF recently started the development of a new vocational curriculum on Biodiversity Conservation and Protected Area Management with the aim of progressively promoting knowledge and understanding across sectors related to sustainable forest management and conservation as well as contributing towards climate change mitigation and adaptation.

Across a wide range of stakeholders there is also a general low level of awareness and understanding of rules and regulations governing land use, forest management and conservation. Consultation with communities and divisional stakeholders during the R-Package assessment re-affirmed that participants in the field division were not familiar with, for instance, the forest policy, FFHCOP, or REDD+ work. Furthermore, knowledge and capacity of REDD+ appears to be strong at the central policy level in the national capital (with multi stakeholder REDD+ SC) which indicates the urgent need for widespread advocacy across sectors at field divisions with respect to sustainable forest management, conservation and carbon stock enhancement.

4.3 Description and justification of the planned actions and interventions under the ER Program that will lead to emission reductions and/or removals

4.3.1 Theory of Change

Fiji is described as an upper-middle-income country although it remains a developing country with a large subsistence agriculture sector. Critical drivers for deforestation and forest degradation discussed above highlight the need to improve inter sectoral collaboration, rationalise resource use and focus on interventions that will not only reduce emissions but have spin off effect that will address underlying causes (economic, social and cultural factors) of deforestation and forest degradation.

Fiji's National Development Plan (NDP) 2017-2036 outlines a vision to transform Fiji to realise its full potential. The NDP recognises the need for inclusive socio-economic development based on multisectoral collaboration to find solutions to address climate change, environment protection and green growth. For the Forest sector, this translates to a 20-year vision for sustainable development and management of Fiji's forest to realize the full potential of the forest sector through supporting forest conservation, afforestation and reforestation to serve as climate mitigation while ensuring timber and non-timber forest products and ecosystem benefits. The ER-P provides an avenue to bridge national vision and aspiration to operationalise core role of the forest sector, paving clear direction for the MOF to operationalize the national REDD+ strategy.

The Fijian culture offers a rich diversity of mechanisms that support the theory of change outlined in (Figure 4-1). Consultation in the Fijian communities occur through "Talanoa" sessions where issues are discussed collectively involving youths, women and vulnerable members. iTaukei Lands Trust Act requires that formal consensus from iTaukei landowners to be supported by signatures from at least 60% of clan members before the Chief is given the opportunity to act on collective motions. The theory of change further assumes that traditional and local governance structures such as the Provincial Councils (for iTaukei communities) and the District Advisory Councils (for non iTaukei communities) supports the multi-stakeholder consultation at Divisional level and provides commitment and consensus to all ER-P interventions. At the same time, the readiness phase has conducted analysis of drivers of deforestation and forest degradation and potential consequences of forest loss in aggravating the risk of climate change through flash floods, landslides, extreme droughts, bush fires and siltation and loss of topsoil. It is assumed that communities in the ER program accounting area will aspire for restoration of habitat protection and improved ecosystem services.

Critical activity in the design of the ER-P involves preparation of multi-sectoral integrated land use plan at district level to allow rationalization of resource allocation and development of Integrated District Management Plans. Multi sector collaboration will strengthen enabling conditions for ER-P, not only raising awareness but generating interest for communities to engage and become part of the intervention. Implementation of Integrated District Management Plan involves REDD+ activities including sustainable forest management, carbon enhancement, avoidance of deforestation (alternative livelihood), agroforestry and forest conservation. Project management is also important to ensure emission reduction credits are reported and verified to comply with the requirements of Carbon Fund Methodological Framework.

Quantifiable immediate results from the above activities would include outputs that facilitate the enabling conditions for implementation of REDD+ activities, including:

Component 1: Strengthening enabling conditions for emissions reduction

Focusing on strengthening existing frameworks, rationalise resource allocation and setting up of community-based monitoring systems aligned to local governance structures set up by the MOF and the Ministry of iTaukei Affairs.
Over the period of the ER-P, 20 Integrated District Land Use and Management Plans will be developed with support and commitment of 120 communities over an area of 510,319ha over 5 years.

Component 2: Effective Coordination and implementation of integrated land use management

Aiming to apply and implement integrated land use plan at district level; this component focuses on addressing conventional logging, advocating improved standard of sustainable management of forest to include management of large tracts of forest, and adherence to the FFHCOP over 8,500ha (in 5 years). The component also aims to support restoration of degraded areas through afforestation and reforestation for plantation forest where Fiji Pine Ltd. will plant 2500ha per year and Fiji Hardwood Corp. Ltd. will plant 478ha for 3 years (2020-2022). At the same time community-based afforestation and reforestation in support of the Govt. initiative of 1million tree a year will establish an estimated 5,750ha by the end of 2024. There will also be efforts to set up agroforestry and alternative livelihoods to take the pressure off forest resource/habitats. Agroforestry will focus on restoration of riparian zones (5,000ha in 5 years) and shade grown agriculture by 5,000 in 5 years. A total area of 36,400 ha will be set aside as protected area by 2024 as a result of consultation, community endorsement and gazetting/leasing of the protected area.

***Component 3*: Efficient Program Management, reporting and verification of Emission Reduction**

Focusing on administrative support, Component 3 will monitor and evaluate implementation of above activities to enable efficient reporting that will allow response to prevailing conditions at the time of implementation. This component will also ensure timely delivery, reporting and dissemination of key learnings from ER-P activities.

Outcomes of the activities and above outputs would include (1) improved forest information system to support efficient reporting; (2) enhancing the adoption of sustainable forest management; (3) a vibrant public and private sector collaboration, participation and growth of both native and plantation forest development as well as (4) upgrade and improve emission reporting and verification.

Component 1 is considered an enabling environment for Component 2 to take place. The IDLUP will encourage intersectoral discussion, prioritise land use and result in agreement for resource zonation. All activities in Component 1 will provide the enabling conditions to implement ER-P activities. If IDLUP is planned and implemented, resource allocation and zonation of management areas would be discussed and agreed at district level. Information on all sector development including forestry would be available to all stakeholders and development would become strategic in alignment to the National Development Plan 2017-2036 (Figure 4-2). Similar assessment for all the key components indicates that the ER-P would directly impact strategic infrastructure development, facilitate consistent supply of timber and reduce reliance on native forest. In the long run (beyond the project timeline), ER-P activities would decrease deforestation and forest degradation, improve emission removals, increase ecosystem services and ensure that local communities are more resilient to climate change.

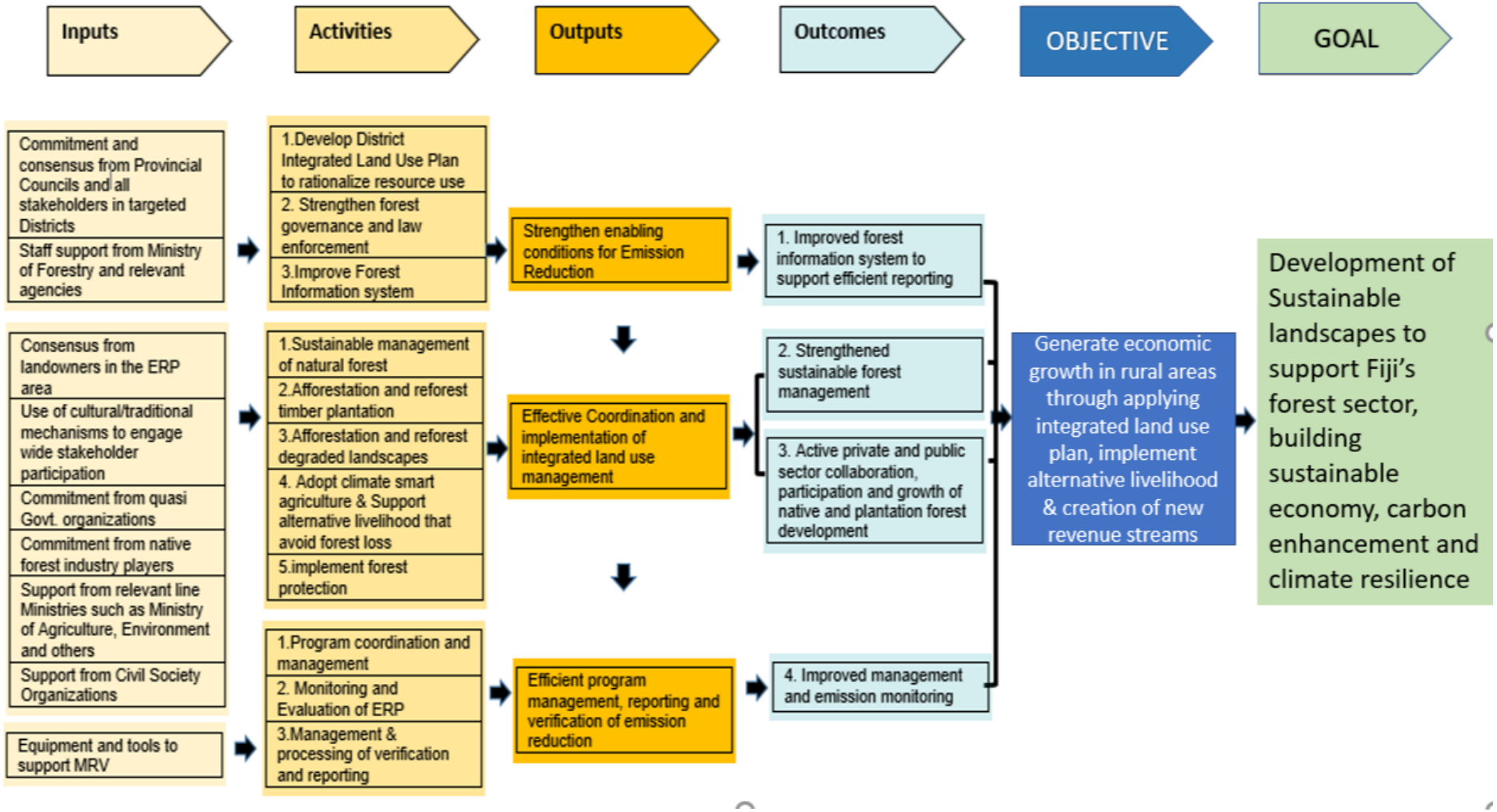


Figure 4-1: Theory of Change for ER-P

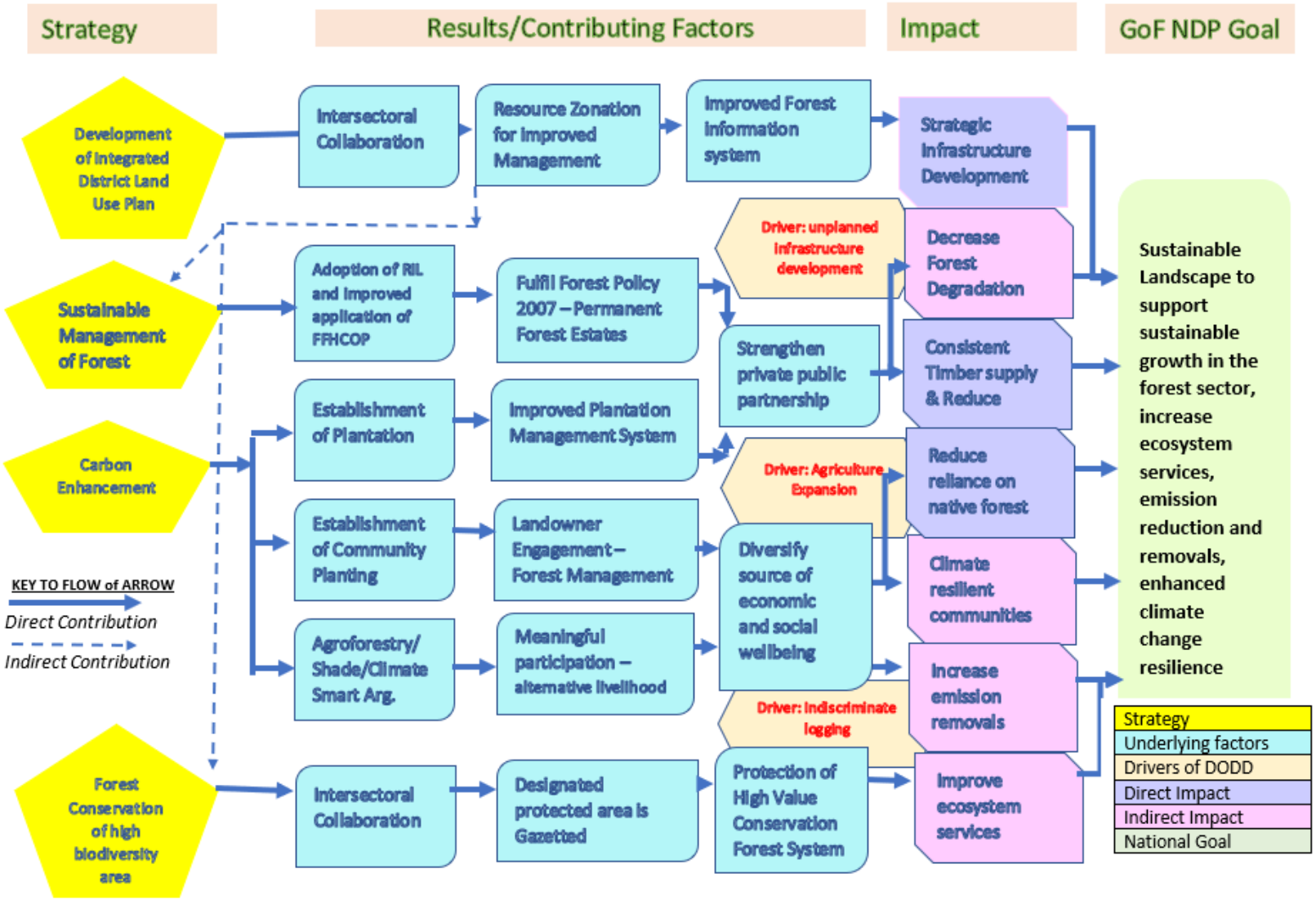


Figure 4-2: Impact of ER-P on National Development Plan (NDP) for the Forest Sector

The scope of the ER-P, as outlined in the activities, outputs and outcomes would support the long-term goal of the Fiji Government to protect native forest, focus timber production on plantation or planted forest; increase economic parity and standards of livelihood of forest dependent communities through rationalization of resource use and application of alternative livelihoods. Allocation of resources would not only address key drivers such as unplanned infrastructure and agriculture expansion but also bring all sectors to collaborate with the MOF in the development of integrated land use management plans. Policy instruments such as the Fiji Rural Land Use Policy and National Forest Policy would be fulfilled as well as Fiji's National Development Plan (2017-2036).

Benefits from the proposed activities have the potential to have wide ranging impact beyond carbon. Large scale landscape restoration across the ER-P area will benefit current and future generations to ensure clean air, water, reduced siltation and flash floods as well as protection of Fiji's endemic species. On island systems such as Fiji, the impact would reach beyond the immediate landscape where ER-P activities area undertaken but extend out to support vibrant marine life through reduced siltation and pollutants entering estuaries. The spin-off would therefore be cross cutting and not limited to the forest sector. For instance, application of agroforestry and climate smart agriculture in designated agriculture land will not only address food security but also reduce siltation which would revitalise coastal marine environments. Establishment of tree woodlots in the upper and mid-slopes would retain and allow slow release of water and contribute towards flood mitigation. Adoption of sustainable forest management principles such as reduced impact logging, diameter limit tables and management of large areas of forest using sustainable principles will not only address forest degradation and deforestation but will contribute to livelihoods, income generation and employment, carbon sequestration, water, soil and biodiversity conservation. Establishment of forest protected area will create a network or forest corridor that will not only support biodiversity but protect fragile head waters and ensure supply of clean drinking water to all urban centres along the coastal areas of the ER-P area.

Overall, the ER-P aims to address critical drivers of deforestation and forest degradation, facilitate processes that would result in changing of mindsets and behaviour of local resource owners to support the overarching aim of improving the forest sector's contribution towards fulfilling Fiji's National Development Plan (NDP) 2017-2036 in the medium and long term. The overall design of the ER-P is outlined in Figure 4-2.

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While the ER-P is targeted at the three largest islands in Fiji, 20 Districts in the ER-P accounting area have been selected for specific interventions however this does not limit any area from being involved. The selection of the 20 Districts was undertaken over two participatory meetings with REDD+ Steering Committee members. There was unanimous agreement to retain existing forest areas and apply the following criteria to select the 20 Districts (1) areas at high risk of forest loss and degradation; (2) areas with high degree of communities/settlements at the forest edge; (3) districts with high poverty rate at provincial level and (4) areas with known high biodiversity. A representation of the 20 Districts within the ER-P area is outlined in Figure 4-3. Although the ER-P budgeted activities will focus on the 20 Districts selected, other areas in the ER-P are open to voluntary commitment where participants may take part in any REDD+ activities of their preference but are expected to register, irrespective of whether they are within or outside of the 20 Districts above. Such an approach allows nested projects with the ER-P as outlined in Section 9.

4.3.2 Description and justification of the key activities of the ER Program

Component 1: Strengthen enabling conditions for emissions reduction

This component aims to address the drivers and underlying causes of deforestation and forest degradation resulting from indiscriminate unplanned forest clearing on farms and infrastructure development. The proposed activities support the implementation of government policies implemented in support of the National Development Plan (NDP) 2017-2036, Forest Policy 2007 and Rural Land Use Policy 2005.

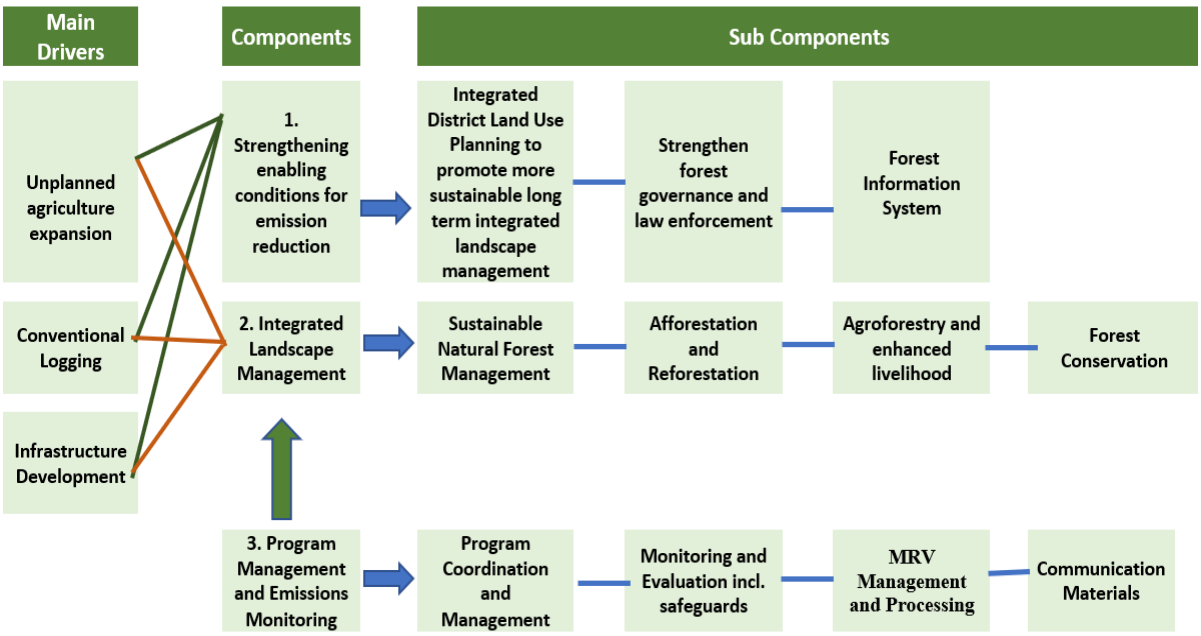


Figure 4-3: Overall Design of the ER-P

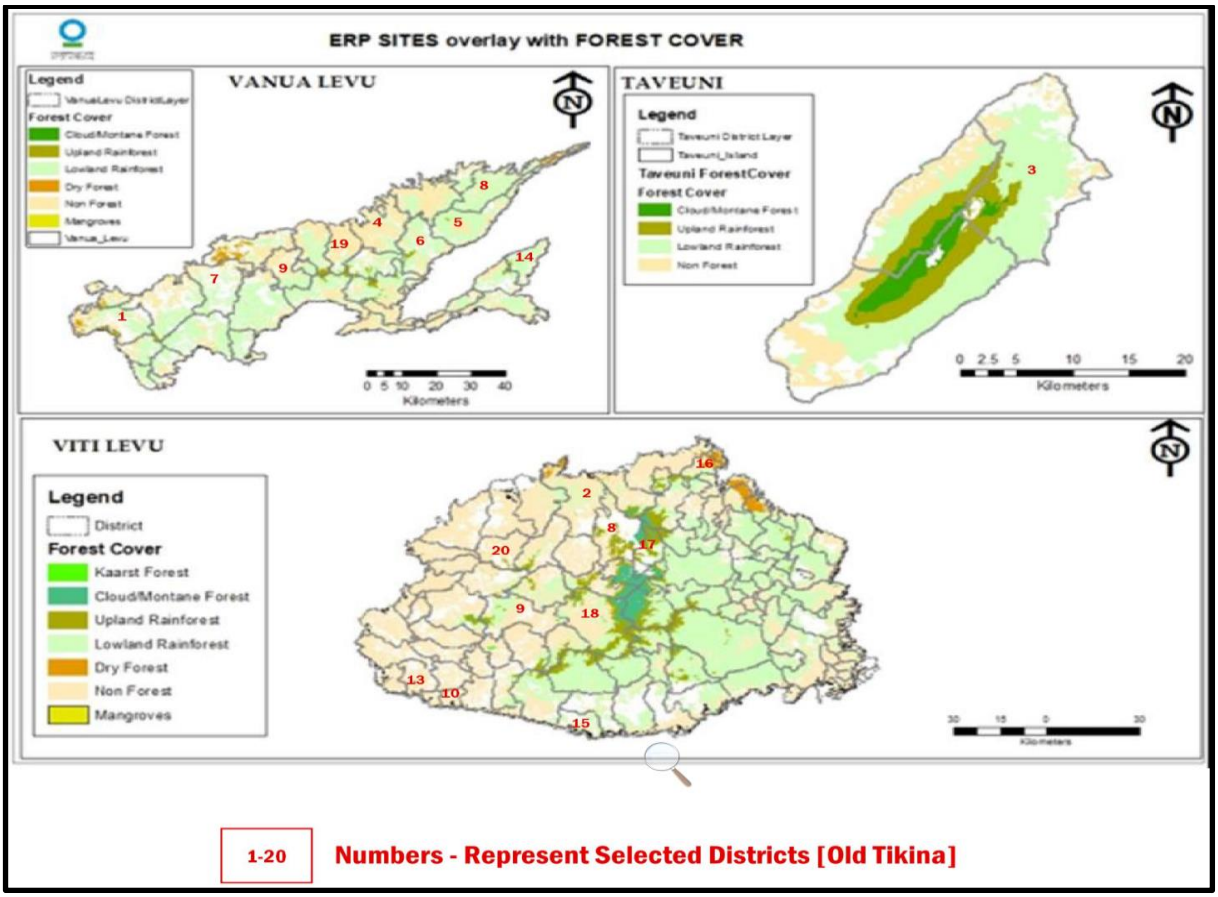


Figure 4-4: Map depicting the 20 District under ER-P

Subcomponent 1.1 Integrated District Land Use Planning (IDLUP) to promote sustainable long-term integrated landscape management

Expected Outcomes

Community agreement on the allocation of land use resulting from community based integrated land use planning will provide the enabling environment for the implementation of the ER-P. Community based integrated land use management plan not only provides an overview of resource capacity in each District but also provides the platform for community forestry that will ensure local support to improve forest quality, community governance and forest information systems. Technical Note on this intervention is outlined in Annex 4-2 (Technical Note 01).

Description and Justification

National Forest Policy 2007 recognises the need for resource allocation through land use and management plans aligned with the Rural Land Use Policy 2005. The National Development Plan (NDP) 2017-2036 identifies private sector participation in plantation development as a critical policy moving forward. One of the strategies to fulfil this policy is the formulation of a National Land Use Plan. Under the ER-P, multisectoral partnership and collaboration is noted as critical requirement to ensure buy-in and implementation of such plans. The ER-P proposes a District base approach to the development of National Land Use Plan. During the ER-P 20 (out of 155) Districts will be impacted (see Table 4-2). The Districts are selected based on (1) areas at high risk of forest loss and degradation; (2) areas with high degree of communities/settlements at the forest edge; (3) districts with high poverty rate at Provincial level and (4) areas with known high biodiversity. Completion of District Land Use Plan will contribute to a mosaic and network for managed landscapes at district level, providing the foundation for the development of national integrated land use plan. The readiness phase demonstrated the impact and application of rationalising resource and land use through the work at the Emalu, Drawa and the Nakauvadra Community Based Reforestation Project where land use plans are used as management tools that support community comprehension and buy-in on resource allocation and sustainable development. At the same time, the iTaukei Lands Trust Board has recently completed the Greater West Master Land Use Plan for urban corridor in the west of Viti Levu and the Greater Suva Area Master Plan. The plans extend 10km inland from coastal areas and developed under the Urban Policy Action Plan aimed at supporting efficient, effective and sustainable urban development. The ER-P initiative extends the reach to rural districts and will support holistic approach to landscape Integrated Land Use Plans in the ER-P accounting area.

Table 4-2: Potential focal areas for Component 1: Strengthening enabling conditions for ER-P

Year	Districts Involved	Hectares impacted
2020	Bua Tikina (72,730ha); Tavua Tikina (70,797ha)	143,527
2021	Taveuni (43,755ha); Noikoro (34,937ha); Labasa (26,710ha); Saqani (26,460ha)	131,862
2022	Vaturova (24,650ha); Dreketi (24,290ha); Nadarivatu (24,157ha); Namataku (23,320ha)	96,417
2023	Wailevu (16,138ha); Seaqaqa (15,980ha); Yakete (14,058ha); Cuvu (12,916ha)	89,806
2024	Cuvu (12,916ha); Tunuloa (12,142ha); Naboubuco (10,141ha); Serua (9686ha); Saivou (3,822ha)	48,707
Total		**510,319**

Drivers Impacted

Drivers impacted include unplanned agriculture and infrastructure and settlement. This intervention will support resource planning and allocation of resources to the best suited end use for instance, the allocation of suitable lands for agriculture and infrastructure such as settlement, roads as well as forest areas. The Integrated Land Use Plan would clearly demarcate areas with high biodiversity for conservation, forest areas

under timber production and area that can be restored with afforestation/reforestation initiatives. Spin off from allocation of resources include identification of water catchment and other uses. Without the intervention, unplanned agriculture production, infrastructure development and unplanned settlements with a potential risk of unchecked deforestation and forest degradation.

Activities under the intervention

Activities include assessment of all available map layers from relevant Ministries such as the Ministry of Lands, Ministry of Agriculture, the iTaukei Land Trust Board and others. Map information of interest include forest and soil types, soil capability, road network, infrastructure development plans, settlements, water catchments, exiting and proposed protected areas and other key information. A critical component of the land use plan is the rapid socio-economic assessments in representative communities to inform on local drivers and economic aspirations. Community planning workshops at district level will be used to solicit community and stakeholder input into the plan. District workshop and consultations will validate information gathering and consolidation. Once the plans are consolidated, they are submitted to the Office of Town and Country Planning for endorsement. Details are listed in Annex 4-2 (Technical Note 01).

Key actors

Key actors include the iTaukei Lands Trust Board, MOF, Ministry of Agriculture, Ministry of Lands and Mineral Resources and Ministry of Waterways and Environment. Information on land use may be available from Fiji Crop and Livestock Council. It will be important to integrate inputs from the private sector in terms of infrastructure development and trade in natural and mineral resources. A total of 20 districts are identified as hotspot initiative areas. Each of the 20 districts have at least 10,000 ha of open and closed forest, currently at high risk from forestry and agriculture activities. This component will compliment current efforts of the Ministry of iTaukei Affairs who are building capacity for rural Development Committee at village, district and provincial levels through the formulation of Integrated Village Development Plans (IVDP). The ER-P intervention will address resource planning from the village to district boundary across all provinces and include interests of women, youth and vulnerable community members.

1.2 Strengthen forest governance and law enforcement

Expected Outcomes

This component will strengthen ability of community representatives and primary timber producers to apply the FFHCOP and improve understanding of the application of forest laws and regulations. Network of Logging Supervisors, Forest Wardens and Timber Production Officers are supported to ensure that log production operations align with FFHCOP requirements. Community representatives and Forest Wardens are trained to implement forest regulations.

Description and Justification

Fiji has a rich cultural diversity and heritage that will be adopted and promoted to support this activity. The language, festivals, rituals, arts and traditions, which hold essential intrinsic value, will be respected while synergies such as strong support for traditional leadership structures will be adopted in the ER-P. For instance, existing local governance systems such as “Talanoa” is a tool that brings communities together to discuss issues. The Chief make the decision after much deliberation ensuring” win-win” for all stakeholders. Redress mechanisms are aligned to REDD+ FGRM and ensures wide consultative approach. Many villages already have a Development Committee. Recent effort by the Ministry of iTaukei Affairs have strengthened this by adding an Environment Committee known as the Yaubula Management Support Team (YMST). The National Forest Policy 2007 advocates the formation of associations to support co-management of resources. In the case of the ER-P, associations are advocated in the form of Forest Care Groups. One Forest Care Group may consist of one or more neighbouring landowning unit that make up a large management unit. Such large management unit may be issued a Forest Management License to facilitate long term sustainable forest management (Subcomponent 2.1). Whether landowners enter partnership with private logging and sawmilling companies or decide to manage forest areas on their own, it is imperative that capacity for improved management is built across all Forest Care Groups. This component aims to build capacity of Forest Care Groups in preparation for implementation of Component 2 below.

Drivers Impacted
Drivers impacted include unplanned agriculture, infrastructure, settlement and logging operations. Underlying causes associated with social structures are also addressed through the formation of Forest Care Groups. Forest Care Groups and key stakeholders have the capacity to be sources of information and support the MOF in remote rural areas. Empowerment and devolution of responsibilities to citizens may generate more commitment for forest and environmental resources while directly embracing the overall goals and intent of the ER-P to facilitate the full realisation of potential in the forest sector to meet socio-economic benefits in economically depressed rural areas.

Activities under the intervention
The activity aims to strengthen community participation to support policy and laws that backup the implementation of ER activity through:

a. Awareness and training on FFHCOP, SFM, Fire Management Strategy, all new regulations related to management of forest under SFM, FGRM mechanism, BSM mechanism and FPIC;
b. Standard operating procedure and monitoring protocol for planting in carbon enhancement activities to monitor growth of plantation;
c. Standard Operating procedure on logging and monitoring protocols for FFHCOP;
d. Standard operating procedures for land lease process to support issue of Forest Management License.

Key actors
MOF will take the lead role in implementing forest governance and law enforcement subcomponent for the entire accounting area. Consolidation in this context means finalizing agreements to institutional arrangements on the assumption that discussion would have commenced during readiness phase; recognizing that policy, legislation reviews and land lease negotiations are expected to take 13-18 months to ensure all parties are consulted and in agreement.

Subcomponent 1.3: Forest information system

Expected Outcomes

Key outcome is expected to be the strengthening and upgrading of existing forest information system to allow capturing and reporting all ER-P activities in preparation for verification. The activity will train target groups to monitor and report key criteria to support MOF annual logging monitoring twice a year. For details ref to Annex 4-2 (Technical Note 01).

Description and Justification

MOF conducts monitoring of logging twice a year. Companies are selected at random, to monitor and evaluate logging activities. Monitoring and assessment results are reviewed by the Ministry and discussed with the Timber Production Officers, company representatives and Forest Wardens highlighting gaps in compliance to the FFHCOP. This activity aims to provide a platform to discuss the monitoring of the results of logging activities with industry and landowners to examine gaps and to agree on way forward for corrective actions. The MOF will take the lead role for building capacity of YMST and Youths on policy and legislation while the Ministry of iTaukei Affairs through Provincial Conservation Offices will facilitate coordination and connections with YMST and Youth Groups in the 20 Districts. Forest Wardens will be required to compile and submit monthly report to the Director of Forestry at Divisional Offices.

Drivers Impacted
While no direct drivers are impacted, the intervention will capture, analyse and report on performance of the ER-P intervention in mitigating impact of drivers on deforestation and forest degradation.

Action for the intervention
This activity will strengthen the operationalization of monitoring system to incorporate forest information from forest management units, including primary log production, timber revenue benefit sharing, domestic timber processing, international timber trade, and tracking timber coming from certified sources and chain of custody

approaches while ensuring that legal requirements under umbrella legislations such as the Environment Management Act (2005) are fulfilled.

This activity aims to set up monitoring framework for all ER activities and link a check list for best practices of standard operating procedures of each ER intervention. Capacity is improved through upgraded systems used by MSD; involvement of Forest Warden and Forest Care Groups to support FIS data entry and assessments; as well as training of Timber Production Officers and private company representative on the FIS. Monitoring framework for SFM, forest conservation, carbon enhancement, agroforestry and alternative livelihood will also incorporate input from Forest Care Group, particularly regarding information on non-carbon enhancement at community level.

Key actors

The MOF will lead implementation and coordinate information needs for related reporting agencies such as the Ministry of Waterways and Environment, Ministry of Lands, iTaukei Lands Trust Board and others. The scope of the activity includes all the accounting area.

An independent team will monitor and verify the compliance of environmental and social safeguards during implementation of the ER-P. The team will include environmental, forestry and social specialists tasked with undertaking desk reviews of the environmental and social documentation and field investigations in the districts, forest management entities, and management plans, to ensure compliance with the environmental and social safeguards related to conversion of natural forests.

Indicators for Component 1: Strengthen Enabling Conditions for Emissions Reduction

A set of indicators for Component 1 are developed to provide a benchmark for implementation as outlined in Table 4-3. Indicators are linked to main activities and many not reflect the full suite of activities involved in each component.

Table 4-3: Indicators for Component 1: Strengthen enabling conditions for emission reduction

Key Activities	Key Indicators	Key Agency to Implement	Financing
Subcomponent 1.1. Integrated District Land Use Planning (IDLUP) to promote more sustainable long-term integrated landscape management			

1.1.1 Development of Integrated District Land use plans (IDLUP)	• Integrated District Land Use Plans completed
	  • 2 districts in Yr.1
	  ○ 4 districts in Yr. 2
	  ○ 4 districts Yr. 3
	  ○ 4 districts Yr.4
	  ○ 6 districts in Yr. 5
		Lead Agency: MOF
		Collaborators:
		Ministry of Agriculture Land Use Division
		iTaukei Lands Trust Board
		NGO, CSO
			Govt funding

1.1.2 Develop integrated community management plan	• Community workshop and consultation
	  • 4 in year 1
	  • 8 in year 2
	  • 8 in year 3
	  • 8 in year 4
	  • 12 in year 5
			Govt. Funding

Subcomponent 1.2. Strengthening forest governance and law enforcement			

1.2.1. Raise awareness on revised legal and regulatory framework, strengthen forest law enforcement	• 3 Awareness and training on FFHCOP, SFM, Fire Management Strategy PER YEAR;
	• Establish Forest Care Groups
	  ○ 2 districts in Yr.1
	  ○ 4 districts in Yr. 2
		Lead Agency: MOF
		Collaborators:
		Ministry of Agriculture, Ministry of iTaukei Affairs, Department of Lands
			Govt. Funding

Key Activities	Key Indicators	Key Agency to Implement	Financing
	○ 4 districts Yr. 3 ○ 4 districts Yr.4 ○ 6 districts in Yr. 5	Provincial Council District REDD+ WG NGO, CSOs	
1.2.2 Capacity building on forest laws enforcement and governance at community level	• 3 District level training per year on standard operating procedures tor ○ Community carbon enhancement ○ Logging monitoring checklist on application of FFHCOP ○ Land leasing processes supporting long term license	**Lead Agency: MOF** Collaborators: Ministry of iTaukei Affairs Provincial Council District REDD+ WG	Govt. Funding
1.2.3. Capacity building on forest laws enforcement at industry and trade level	• 2 inter agency training per year on forest law • 2 training per year on reporting process for non-compliance of forest related legislations	**Lead Agency: MOF** Collaborators: Ministry of iTaukei Affairs District REDD+ WG iTaukei Lands Trust Board Provincial Council NGO, CSOs Sawmillers Association	Govt. Funding
Subcomponent 1.3 Forest information system			
1.3.1. Upgrade Forest information & data base systems	• System Upgrade in YR 1 • One training & refresher course per year for MOF staff on FIS processing	**Lead Agency: MOF** Collaborators: Ministry of iTaukei Affairs District REDD+ WG iTaukei Lands Trust Board NGO, CSOs Sawmillers Association	Govt. Funding
1.3.2 improved monitoring and reporting to feed forest information system	• One report per annum on compliance to Environment and social safeguards • Divisional REDD+ WG Quarterly Monitoring reports	**Lead Agency: MOF** Collaborators: Ministry of iTaukei Affairs District REDD+ WG	Govt. Funding

Component 2 Promoting Integrated Landscape Management

The overall impact of the intervention is anticipated at 9,500ha of avoided deforestation, 11,750ha of carbon enhancement at community level and 7,532ha of carbon enhancement for plantation as well as 8,500ha of forest implementing sustainable harvesting practices which would contribute to reduce forest degradation (Table 4-4).

Table 4-4: Impact Profile for Promoting Integrated Landscape Management

Subcomponents

Year	2.1	2.2	2.3 & 2.4	2.5
	Forest Degradation (Reducing volumes extracted to meet sustainable harvesting rates) (hectare)	**Enhancement of Carbon Stocks (Plantations)** (hectare - planting increased)	**Enhancement of Carbon Stocks (A/R)** (hectares planting increased)	**Forest Conservation (areas (ha) of deforestation avoided)**
2020	1700	1,698	1,550	1,300
2021	1700	1,698	1,950	1,300
2022	1700	1,698	2,350	2,300
2023	1700	1,219	2,750	2,300
2024	1,700	1,219	3,150	2,300
Total	**8,500**	**7,532**	**11,750**	**9,500**

Component 2 encapsulates the main emissions reduction and removal activities. It is linked to Component 1 and designed to implement agreed allocation of land use resulting from the formulation of community based integrated land use planning and management guidelines. Land use zonation would support landscape management at district level with resource allocation aligned to Component 1. Successful implementation of Component 2 would result in the establishment of a network of land use zones including but not limited to (1) large forest estates managed under sustainable forest principles; (2) carbon enhancement in planation and community forestry; (3) agroforestry and alternative livelihoods to mitigate flooding and generate additional revenue streams to support livelihoods and (4) forest conservation to protect biodiversity.

Result chain assessment outlined in Figure 4-5 identifies local impact from this component to include empowering community forest management through community consultation and engagement in the development of the District Integrated Land Use Plan. Cross Sectoral, collaboration will facilitate strong partnerships and activate Government Policy on Private-Public-Partnership (PPP) which would result in improve management of Fiji's forest aimed at reducing forest degradation (addressing conventional logging). Reduction in forest degradation would result in increased emission reduction. Given the strong PPP where landowners are involved with forest management, objectives of the National Development Plan are fulfilled, and the overall goal of the Theory of Change is met (Figure 4-1).

Subcomponent 2.1 Sustainable Management of Native Forests

Expected Outcome

An integral component of the business as usual in logging operations from native forests is the issuance of short-term annual licenses that results in inefficiency such as limitation in forward planning, investment opportunities in all-weather road access and uneconomic scale to undertake reduced impact logging. This component will strengthen the application of Fiji Forest Code of Logging Practice while facilitating discussion between landowners and logging companies on application of SFM on designated forest network resulting from Component 1.

Description and Justification

Conventional Logging in Fiji implies business as usual harvest practices where minimum diameter limits are 35cm diameter at breast height (dbh) across all merchantable species administered under the Forest Decree 1992 and the Fiji Forest Harvesting Code of Practice (FFCHOP).
This intervention aims to address the following:

1. Establishment of long-term Forest Management Licenses;
2. Application of diameter limit table to support selective logging and application of reduced impact logging; and
3. Full implementation of the revised FFHCOP that integrates RIL principles.

The Forest Bill 2016 provides provision for Forest Management License. The Licenses are anticipated to be issued with land lease where tenant forest managers are expected to make annual land rental payments. The

TLTB has indicated willingness to accommodate such long-term arrangements with prior consensus of landowners. Application of forest management license will fulfil the strategy outlined in the National Development Plan (NDP) 2017-2036 which advocates long term leasing mechanisms to support forest management and conservation well as plantation development. iTaukei Lands Trust Board has the legal instruments to support the issuance of Forest Management License. At the same time, legal framework for Diameter Limit Table is already enshrined in the iTaukei Lands Trust Act. The MOF is currently strengthening application of the same. It is expected that the ER-P will support the full integration of such tools as part of sustainable management of Fiji's forest resources. Details are outlined in Annex 4-2 (Technical Note 02).

Drivers Impacted

Drivers impacted include unplanned logging and conventional logging. The impact of the intervention will reduce forest degradation and facilitate enabling environment for sustainable management of Fiji's Forest resources.

Activities of the intervention

Main intervention under this subcomponent is to facilitate dialogue between Public/Private Partnership towards the establishment of Forest Management Licenses. Scaling up efforts during the readiness phase supporting the empowerment and engagement of local Mataqali/communities to support long term Forest Management License, patrol and inspect forest operations through strengthening and improving the role of Forest Wardens in each province/district. Efforts are also underway to demonstrate multi stakeholder dialogue and decision through the district and provincial REDD+ Working Groups to support implementation of reduced impact logging in the field. Of the 20 districts described in Component 1, eight (8) are earmarked for this component given the large extent of open and closed forests in the District as outlined in Table 4-5. Detailed activities are outlined in Annex 4-2 Technical Note 02 – Sustainable Management of Native Forest.

Table 4-5: Potential areas & Impact Profile for Sustainable Management of Native Forest

Year	Priority Districts Involved	Available Native Forest	Area of Native Timber Production (Ha)*	Volume harvested using conventional logging (m^3)	Volume harvested using reduced impact logging (m^3)	Reduced Volume (m^3)
2020	Bua/Tavua	37,156	1,700	52,972	35,700	17,272
2021	Noikoro/Saqani	40,294	1,700	52,972	35,700	17,272
2022	Dreketi/Vaturova	30,840	1,700	52,972	35,700	17,272
2023	Dogotuki	12,370	1,700	52,972	35,700	17,272
2024	Serua	4,317	1,700	52,972	35,700	17,272
Total		**124,977**	**8,500**	**264,860**	**178,500**	**86,360**

Key Actors

Key actors include the MOF, Ministry of Agriculture, Ministry of iTaukei Affairs, iTaukei Lands Trust Board, Ministry of Lands. Landowners are also important as they play an important role in decision making. Private Forestry Companies undertaking logging and related operations as well as Provincial/District/Community representatives support landowners to consider the pros and cons of this initiative. CSO play an important facilitative role to ensure better understanding and collaboration on all parties involved.

Subcomponent 2.2 Afforestation (plantation establishment)

Expected Outcome

This component supports the National Development Plan (NDP) 2017-2036 through establishment of plantations which aligns with policy for sustainable forest management and the aspiration to encourage private sector participation in plantation development. The two large plantation companies are heavily involved and assumed to be self-sufficient in financing these activities. Rates of planting are sourced from respective

management plans and an average of 1,506ha will be planted per year under plantation establishment. Technical Note on this intervention is outlined in Annex 4-2 (Technical Note 03).

Description and Justification

Large plantation operators in Fiji are important entities for the forest sector in Fiji as they contribute to rural economy through land leases and employment opportunities. Fiji Pine Ltd. and Fiji Hardwood Corp. Ltd. have been privatized and currently function as independent and private companies. This intervention provides opportunity to restore degraded landscapes and sustainably manage forest plantation resources. Although not costed in the budget this component provides opportunities for creation of new plantation interest in unencumbered land (not under any lease arrangement). Additional possibility of private-public partnership with community-based initiatives to restore degraded land has the potential to become sustainable timber sources in future. For instance, Future Forest Fiji Ltd. a local teak plantation company recently took the full wrath of tropical cyclone Winston and is looking to partner with local communities to recommence teak planting. Other community-based carbon enhancement planting of native and exotic timber species that would support sustainable timber revenues in prime production forest areas in the medium and long term are anticipated but not costed in the ER-P. Such arrangement would align to nesting procedures outlined in Section 9.

Drivers Impacted

Drivers impacted are related to the absence of replanting effort after plantation forest are logged by plantation companies. The barriers may be attributed to lack of planting materials and other factors. Fiji Pine Ltd. being on the drier side of the island and adjacent sugar cane field are more prone to threats from bush fires while Fiji Hardwood Corp, Ltd. on the wetter side of the island is often limited by prolong wet weather conditions.

Activities of the intervention

According to the assessment in Fiji Forest Reference Level for the year 2006-2016, business as usual operation for the two main plantation companies indicate an average replanting rate of 1500ha per year of which 1281 ha is established by Fiji Pine Ltd. and the remaining 301 ha by Fiji Hardwood Corporation (Table 4-6). Both companies aspire to increase planting rate during the ER-P period. Fiji Pine Limited plans to plant and additional 1219 ha while Fiji Hardwood Corporation aims to plant an additional 479 ha. The later will plant until the year 2023. Fiji Pine Ltd. would plant over 12,000ha during ER-P period while Fiji Hardwood would establish over 2000 ha of mahogany plantation. Intervention from both plantation companies will occur within existing estates in the ER-P accounting area and aligned with the Management Plans that guide the operation of each company.

Plantation estates for Fiji Pine Ltd. is scattered on the leeward side of Viti Levu and Vanua Levu, largely adjacent to sugarcane farms. Fire continues to be a threat to Fiji Pine Ltd. plantation assets due to proximity to sugarcane areas. During the Reference Period, an average of 1428ha per year were burnt (see Table 4-7). Reducing the incidence of fire will lead to a reduction in emissions and will increase the likelihood of successful establishment of planted forests.

Key Actors

Key actors include Fiji Pine Ltd and Fiji Hardwood Corporation. Additionally, the MOF, Ministry of Agriculture, Ministry of iTaukei Affairs, iTaukei Lands Trust Board, Ministry of Lands and Ministry of Industry, Trade and Tourism are also important to coordinate landowner interest, monitor planting performance as well as monitor fire occurrences. Landowners are important as they play an important role in decision making. Private Forestry Companies supporting planting operations are also important and they usually impact women who work in the nursery operation. Youths and able young men are often associated with planting gangs, plantation maintenance crew and other activities are equally important.

Table 4-6: Potential areas & Impact Profile for Enhancement of Carbon Stock (Plantation)

Year	Fiji Pine Limited Area Target (ha)			Fiji Hardwood Corp. Area Target (ha)		
	Average Planting 2006-2016	Planting during ER-P Period (Ha)	Area above Business as Usual (Ha)	Average Planting 2006-2016	Planting during ER-P Period (Ha)	Area above Business as Usual (Ha)
2020	1281	2500	1219	301	780	479
2021	1281	2500	1219	301	780	479
2022	1281	2500	1219	301	780	479
2023	1281	2500	1219	301	0	0
2024	1281	2500	1219	301	0	0
Total			**6,095**			**1,437**

Table 4-7: *Forest Degradation – Reduction of Fire impact on Fiji Pine Ltd plantations*

Year	Reduction of Fire with Fiji Pine Limited Area (ha)		
	2006-2016	ER-P Period (Ha)	Area above BAU (Ha
2020	1428	1000	428
2021	1428	1000	428
2022	1428	700	728
2023	1428	700	728
2024	1428	500	928
Total			**3,240**

Subcomponent 2.3 Carbon Enhancement Community Planting

Expected Outcome

The intervention is supported by Fiji Pine Trust and the Government of Fiji 4 Million Tree Initiative. It is anticipated that a total of 5,750 ha will be planted by 2024, equivalent to a collective total of 7million trees planted during the ER-P period (Table 4-8). Levels of intervention in the period 2006-2016 is assumed at an annual rate of 100ha for Fiji Pine Trust and 300ha for MOF and other partners. The intervention is expected to have positive environmental spin off that will improve the wellbeing of local communities in the long run. It is also anticipated that the ER-P will generate interest for landowners to become more involved in restoring degraded landscapes, strengthen local governance system through platforms such as the Forest Care Group and Forest Wardens.

Description and Justification

Successful models exist for community forestry such as the Fiji Pine Trust and the Nakauvadra Community Based Reforestation Project and Reforest Fiji. Fiji Pine Trust focuses on community development and

expansion of Fiji Pine (*Pinus Caribbea var. hondurensis*) while the latter focused on mix planting of native species, mahogany and teak. Willingness of local landowning units to engage with tree planting and availability of vast idle and degraded landscapes makes this intervention promising. Details are outlined in Annex 4-2 Technical Notes 04.

Table 4-8: Impact profile for community-based carbon enhancement

Year	IMPACTED AREA DURING ER-P Period		
	Fiji Pine Trust (ha)	4 Million Trees Initiative (ha)	TOTAL AREA (ha)
2020	50	300	550
2021	50	700	950
2022	50	1100	1,350
2023	50	1500	1,750
2024	50	1900	2,150
Total	**250**	**5,500**	**5,750**

Drivers Impacted

Drivers impacted include unplanned agriculture, unplanned infrastructure and unplanned settlement.

Activities of the intervention

Community consultation and liaison is important to ensure the land is unencumbered (not leased) and that the land belongs to the LOU offering it for inclusion in the ER-P. This entails cross checking with the Provincial Council for any discussion on potential development, consolidating land boundary with iTaukei Lands Trust Board as well as collating signed agreement of at least 60% of Mataqali members (FPIC process) that consent to an agreement that the parcel of land in question can be planted with trees under the ER-P. The Provincial Council plays an important role to check the names of all Mataqali members before it is submitted to the iTaukei Lands and Fisheries Commission for verification (TLFC). Should the TLFC reject the names and signatures, field reconciliation is imperative. This means that field staff will have to revisit all the Mataqali members and secure signed consensus. Such consensus may be linked to ER-P Registry and supporting data management, measurement, reporting and verification.

Although there are 20 districts where this intervention can possibly occur, 7 districts are presented (Table 4-9) to illustrate the opportunity that exists in the ER-P accounting area. Each of the 7 Districts have more than 5,000ha of non-forest area hence the total potential area that can be subjected to carbon enhancement is estimated at 91,000ha under the column “Area of Non-Forest”. The scope of opportunity for this activity in the ER-P accounting area is more than that stated above. Although budgeted activities are limited to the 7 districts, other areas within the ER-P may be self-financed, register in the ER registry and nested under the national ER-P.

Key Actors

The key actors include MOF, Ministry of Agriculture, Ministry of iTaukei Affairs, iTaukei Lands Trust Board, Ministry of Lands, Ministry of Women as well as all Government agencies in the Province/District. In addition, the Provincial Council, District Council, representative from all villages/settlement in a district and NGOs as well as local communities and/or landowners.

Subcomponent 2.4 Afforestation/Reforestation (Riparian restoration/Shade Grown Agriculture /Alternative Livelihood)

Expected Outcome

An estimated total of 7,500 ha across all 20 districts are anticipated to be impacted under this activity (Table 4-9). Successful models for community agroforestry aimed at flood mitigation is demonstrated by the Ministry of Agriculture Land Use Division, GIZ/SPC, Conservation International and other practitioners working with local communities.

The districts are selected based on pressing need for nature-based solutions to mitigate (1) flash floods (2) landslides and (3) limited livelihood opportunities. It is anticipated that rural farmers will embrace and uptake these interventions through farmers-field school discussions and learning exchange. This intervention will result in the following:

1. Flood mitigation in 7 districts with river system that currently face flash floods;
2. Land slide mitigation in 7 districts where slope cultivation is commonly practiced by rural communities;
3. Creation of alternative streams of revenue among 6 districts that are known to actively clear forest areas to cultivate root crops.

Description and Justification

Each district in the accounting area will have unique characteristics calling for special attention to customize this intervention. Generally, farmers may integrate small timber production, fine timber, fuel woodlots and fruiting trees, with crop production. Rotational woodlot with fast growing trees would involve intercropping taro, kava, cassava, corn and others with fast growing firewood/fodder trees such as Drala (*Erythrina variegata*), Bean Tree (*Sesbania grandiflora*) or Bainicagi (*Gliricidia sepium*). It is proposed to strengthen and encourage the uptake of carbon neutral alternative interventions such as bee keeping, cultivation of marketable commodities such as vanilla, pawpaw (*Carica papaya* and other varieties), breadfruit (*Artocarpus spp*), noni (M*orinda citrifolia*), citrus (many different varieties), avacado and other local fruit tree species in woodlots of at least one-hectare.

In Fiji, the practice of slash and burn is predominant and widespread in rural villages and settlements. Acknowledging that domestic fuel wood is still common in rural areas; this intervention is also open to the establishment of firewood lots to be planted along riverbanks to serve dual purpose of flood mitigation and fuelwood. Details are outlined in Annex 4-2 Technical Note 05.

Table 4-9: Impact profile for Agroforestry & Livelihood Opportunity

	Shade Grown Agriculture		Flood Mitigation	Alternative Livelihood	
YEAR	Target Area (ha) (A)	Impact Area (ha) (B)	Riparian restoration (ha) (C)	Target Area (ha) (D)	Total Area Impacted (ha) (B+C+D)
2020	1000	300	1000	200	1500
2021	1000	300	1000	200	1500
2022	1000	300	1000	200	1500
2023	1000	300	1000	200	1500
2024	1000	300	1000	200	1500

Drivers Impacted

Drivers impacted include unplanned agriculture, unplanned logging and infrastructure and unplanned settlement.

Activities of the intervention

Riparian restoration focuses on planting riverbanks with tree crops and vetiver grass. Tree species selected will align with aspirations of local communities. Most commonly, fruit trees are the preferred species as it is beneficial and accessible to all community members. For flood mitigation, the Ministry of Agriculture and the

MOF will work closely with districts with important headwaters and those with a history of flash floods to identify critical areas for the intervention. The intervention includes restoration / planting of local tree species and vetiver grass at a buffer of 20m along riverbanks.
On slope lands, and integration of shade grown cultivation using alley cropping technique, it is assumed that shade grown cultivation will retain 0.3ha of trees per hectare. This means that in one hectare, farmers may retain 0.3ha of shade trees or plant alley cropping equivalent to 0.3ha in a mixed cropping system.

As part of alternative livelihoods, the intervention is targeted at small holder farmers that clear native forest to cultivate kava/taro. Vanilla is more valuable to kava and therefore will be advocated. Cured vanilla pods have a current market rate of FJD400 per kg compared to FJD150 per kg for kava. Proposed sites for each intervention are listed in Table 4-10.

Table 4-10: Priority areas of intervention: Subcomponent 2.4

Proposed Intervention	Priority Districts
Riparian restoration	Labasa, Sigatoka, Namataku, Tuniloa, Cuvu, Dreketi, Dogotuki
Shade grown cultivation	Tavua, Wailevu, Taveuni, Bua, Seaqaqa, Saqani, Naboubuco
Alternative Livelihood	Saivou, Vaturova, Nadarivatu, Serua, Yakete, Noikoro

Key Actors
Lead agency will be the MOF and assisted by the Ministry of Agriculture, Ministry of iTaukei Affairs, iTaukei Lands Trust Board, Ministry of Lands, Ministry of Women. Other key actors include the Province/ District Council, landowners, tenant farmers, freehold landowners and generally rural communities. At the same time, all CSO, NGO and INGO working in the District are also key actors.

Subcomponent 2.5 Forest Conservation

Expected Outcome

The intervention will support the registration and formal establishment of an additional 2% forest land to be protected and aligned to the proposed protected area identified by the Protected Area Committee through the National Environment Council. Fiji currently has 48 terrestrial protected areas covering 488 km^2 or 2.7% of the nation's land area. Fifteen Forest Reserves and eight Nature Reserves were established under Forestry legislation in 1914 and 1950-60s – all of these remain but they have never received any formal conservation management[18]. Of the 48 terrestrial protected areas, 23 meet the IUCN definition of protected areas while 25 align to the Forest Decree 1992. All 48 terrestrial protected areas include reserves, national parks, water catchments, sanctuaries and managed areas, which have been established under a range of legislative or other instruments.

Description and Justification

A list of priority and potential conservation sites have been identified and mapped for Fiji by the Protected Area Committee under the National Environment Council and aligned to Fiji's commitment to the Convention on Biological Diversity. The proposed network of Protected Area accounts for an additional 14.3% of Fiji's landmass, selected based on high biodiversity and ecosystem services. This intervention will contribute to 2% of the proposed protected area and is aligned to priority sites of the Protected Area Committee. Prioritization of critical sites include "cloud-forest" systems of the three (3) main islands. Cloud forests in Fiji hosts important endemic species that are unique to the microclimate in these areas such as the *Acmopyle sahniana*. Local and island wide benefits (regional) include retention of clean water supply, climate regulation, provision of

[18] Implementation Framework 2010-2014 for the National Biodiversity Strategy and Action Plan 2007

shelter and habitats for endemic species. Priority sites include (a) “Greater Tomaniivi” on Viti Levu; (b) “Greater Delaikoro” on Vanua Levu, and (c) the consolidation of the Taveuni and Ravilevu reserves on Taveuni island as outlined in Table 4-11.

Table 4-11: Priority Sites for Protected Area

SITE	TYPE	LOCATION	Area (Ha)	THREATS
Emalu	Lowland	Navosa, Viti Levu	7,347	Deforestation – conversion for other land use
Greater Tomaniivi	Cloud-forest	Ba, Viti Levu	5,761	Deforestation – conversion for other land use
Greater Delaikoro	Cloud-forest	Cakaudrove-Macuata, Vanua Levu	6,778	Deforestation – conversion for other land use
Taveuni + Ravilevu	Cloud-forest	Cakaudrove, Vanua Levu	15,309	Deforestation – conversion for other land use
Nadarivatu-Nadala	Cloud-forest	Ba, Viti Levu	7,400	Deforestation – conversion for other land use
Buretolu	Cloud-forest	Ba, Viti Levu	1,198	Deforestation – conversion for other land use
		Total Area Targeted	**36,446**	

Drivers Impacted

Drivers impacted include unplanned conversion of forest area into agriculture, infrastructure and for settlement and logging.

Action for intervention

It is imperative to facilitate landowner consultation and planning to reaffirm and finalize lease agreements for priority sites listed in Table 4-9 as well as to secure other priority areas as defined by the Protected Area Committee of the National Environment Council.

For each protected area, consensus from landowners is critical followed by the development of management plan and biodiversity monitoring and evaluation system that support co-management of protected areas. Co-management framework ensures active landowner participation and involvement in the local governance structure to ensure support from all stakeholders, land use plans and protected area management plans are also necessary as they could contain monitoring and evaluation frameworks for the protected area. Most importantly for each protected area, livelihood opportunities must be developed to compensate foregone opportunities by landowners that set aside area for protection. Alternative livelihood opportunities outlined in Subcomponent 2.4 above focuses on priority districts aligned to the proposed protected area listed in Table 4-12. Details are outlined in Annex 4-2 Technical Note 06.

Table 4-12: **Impact profile for Forest Conservation and Agroforestry**

Year	Hectares impacted by Conservation (Ha) (A)	Avoided Deforestation from Forest Conservation (Ha) (B)	Avoided Deforestation from Agroforestry and Alternative Livelihood (Ha) (C)	TOTAL Deforestation (areas of deforestation avoided) (B+C)
2020	5,716	1000	300	1300
2021	6,778	1000	300	1300
2022	15,309	2000	300	2300
2023	7,400	2000	300	2300
2024	1,198	2000	300	2300
Total	**36,446**	**8,000**	**1,500**	**9,500**

Key Actors

Key actors include Ministry of Forest, Ministry of Waterways and Environment, Ministry of Lands', iTaukei Lands Trust Board. Landowner are critical to the conversation on protected area as well as civil society and private sector.

Indicators for Component 2 – Integrated Landscape Management

For the interventions under Component 2 (see Table 4-13), the indicators reflect level of effectiveness in implementation and are aligned to activity schedules.

Table 4-13: Table of activities for Component 2: Promoting Integrated Landscape Management

Key Activities	Key Indicators	Key Agency to Implement	Financing
Subcomponent 2.1 Sustainable Management of Native Forests			
2.1.1 Land tenure clarification and SFM management planning	• 5 agreements between landowners and logging operators approved per year • 3 Forest Leases secured per year	**Lead Agency: MOF** Collaborators: Ministry of iTaukei Affairs iTaukei Lands Trust Board Sawmillers Association NGO, CSOs	Private Logging Companies
2.1.3 Implement & Monitor logging aligned to FFHCOP	• 10 sites monitored Quarterly • Results disseminated widely to all stakeholders through newsletter and social media	**Lead Agency: MOF** Collaborators: Ministry of iTaukei Affairs iTaukei Lands Trust Board Sawmillers Association NGO, CSOs	Govt. Funding
Subcomponent 2.2 Afforestation (plantation establishment)			
2.2.1 Investments in reforestation, short and long rotation plantation - pine plantation	• Restocking of pine plantation with 2500ha/yr with a net total of 526,262tCO2e in 5 years • Monitoring report by the MOF once a year	**Lead Agency: MOF** Collaborators: Fiji Pine Ltd.	Fiji Pine Ltd.
2.2.2. Investments in reforestation, short and long rotation plantation investments - mahogany plantation	• Restocking of logged over MAHOGANY forest plantation at 780 ha/yr. between 2020-2022 • Monitoring report by the MOF once a year	**Lead Agency: MOF** Collaborators: Fiji Hardwood Corporation Fiji Mahogany Trust	Fiji Hardwood Corporation
Subcomponent 2.3 Afforestation /Reforestation (community-based tree planting)			
2.3.1. Implement landowner engagement through Fiji Pine Trust Extension Scheme	• Fiji Pine Trust facilitate registration of at least 4 groups in ER-P per year (each group with at least 25ha) • Establishment of 200ha pine woodlot per year	**Lead Agency: MOF** Collaborators: Ministry of iTaukei Affairs iTaukei Lands Trust Board Fiji Pine Trust Fiji Pine Ltd. Provincial Council	Govt. Funding GCF

Key Activities	Key Indicators	Key Agency to Implement	Financing
		NGO, CSOs	
2.3.3. Community based restoration for 4 million Trees	• Establish an incremental 400ha per year from 2020 at the baseline of 300ha. • Establishment of 4000ha by year 3 • At least 100 communities/Mataqali register for intervention	**Lead Agency: MOF** Collaborators: MOF, Landowners Sawmillers Association NGO, CSOs	Govt. funding GCF GEF
Subcomponent 2.4 Afforestation/Reforestation (Riparian restoration/Alley Cropping/Livelihood)			
2.4.1 Implementation of Riparian restoration to mitigate flash floods	• Establish at least 6 sites annually at 300ha per site • 6 Reports of community consultation on traditional species used and preferred species for restoration. • At least 3 field schools for farmer-to-farmer exchange per year	**Lead Agency: MOF** Collaborators: Ministry of Agriculture Kava Commodity Clusters Fiji Crop and Livestock Association Kava Association Famers NGO	Govt. funding GEF GCF
2.4.2. Afforestation and restoration for ecosystem services	• Establish at least 5 sites annually at 00ha per site • 6 Reports of community consultation on traditional species used and preferred species for restoration. • At least 3 field schools for farmer-to-farmer exchange per year	**Lead Agency: MOF** Collaborators: Ministry of Agriculture Kava Commodity Clusters Fiji Crop and Livestock Association Kava Association Famers NGO	Govt. funding GEF GCF
2.4.3 Enhanced alternative livelihood and restoration	• Establish at 200ha of alternative intervention per year • 6 Reports of District alternative livelihood intervention • At least 3 field schools for farmer-to-farmer exchange per year	**Lead Agency: MOF** Collaborators: Ministry of Agriculture Kava Commodity Clusters Fiji Crop and Livestock Association Kava Association Famers NGO	Govt. funding GEF GCF
Subcomponent 2.5 Forest Conservation.			

Key Activities	Key Indicators	Key Agency to Implement	Financing
2.5.1. Implementation of natural forest conservation agreement (at the deforestation frontier	• Secure 60% community consensus at each priority site via FPIC process by 2023	**Lead Agency: MOF** • Collaborators: • Ministry of Waterways and Environment • iTaukei Lands Trust Board • Department of Lands NGO. CSOs	Govt. funding
2.5.2 Formalise protection of forest area under the Forest Decree 1992 and other instruments such as the TLTB Act	• At least 2 Discussion Paper drafted and submitted to Forestry Board per year • Endorse and enforce PA status at least one site per year • Secure at least 1 REDD+ Conservation Lease per year	**Lead Agency: MOF** • Collaborators: • Ministry of Waterways and Environment • iTaukei Lands Trust Board • Department of Lands • NGO. CSOs	Govt. funding GEF
2.5.3 Develop and Implement community-based Forest Protection Management Plan based on co-management regime between the Forest Management Enterprise and management body of the Protected Area	• At least 3 Community consultation using Open Standards and other tools to identify target specifies, key threat and management strategy for protection • 2 Forest Protection Management Plan formulated per year	**Lead Agency: MOF** • Collaborators: • Ministry of Waterways and Environment • iTaukei Lands Trust Board • Department of Lands • NGO. CSOs	Govt. funding GCF
2.5.4 Secure sustainable financing to support the long-term maintenance and upkeep of the forest protected area	• 2 Community and Stakeholder consultation develop - Business Plan • Secure Seed fund for sustainable financing of ER-P priority by 2023	**Lead Agency: MOF** • Collaborators: • Ministry of Waterways and Environment • iTaukei Lands Trust Board • Department of Lands • NGO. CSOs	• Govt. funding

- These line items may be sponsored so place holder is set as the “Govt. Funding”. These activities are typically supported by donor agencies and may be financed by interested investors for instance Global Environment Facility and other sources

Component 3: Program Management and Emissions Monitoring

The overall project management and emissions monitoring can be divided into three subcomponents as show in the Table 4.14 below. Associated budget for each component is outlined in Section 6.2.

Table 4-14: Activity and Indicators Component 3

Impact	Key Activities	How to implement; Lead Agency	Key Indicators	Financing Source
Subcomponent 3.1: Program coordination and management				
Effective Management and implementation ER program.	3.1.1 Implementation of Gender Action Plan	Lead: Ministry of Women, Children and Poverty Alleviation	Activities identified per-ER-PA and those post-ER-PA be undertaken as per the GAP	Pre-ER-PA: FCPF-REDD+ WB FMT Grant Post-ER-PA through Government Funding
	3.1.2 Implementation of ESMF	Lead MOF	Ensure that all safeguards identified in ESMF are implemented	Government Funding
	3.1.3 Support to organizational development and capacity building at the district and provincial level	Lead: MOF Institutional setup; coordination mechanism; program implementation manual; trainings; meetings	Functional Management structure of ER Program at national, Divisional and provincial level set up by 2022	Gov. funding
	3.1.4 Support the overall implementation of ER-P (MSD Unit of the MOF)	Lead: MOF Institutional arrangement and approval from the Ministry of Economy	Standard Operating Procedure developed to support institutional arrangements and reporting operational outcomes at national, Divisional and local levels	Gov. funding
	3.1.5. Capacity development to change/ adjust work processes (including support to strengthening inter-departmental cooperation mechanisms)	Collaborators: Divisional REDD+ Working Groups In-house training for REDD+ staff Presentation at interdepartmental regular meetings		Gov. funding

Impact	Key Activities	How to implement; Lead Agency	Key Indicators	Financing Source
	to better fulfil MOF functions			
Subcomponent 3.2: Monitoring and evaluation (M&E) includes monitoring of safeguards				
Objectively implemented M & E for ER program Tracked emissions and removals of the ER program	3.2.1 Implementation of M & E for ER program to measure effectiveness	Development of implementation plan for MRV; trainings; data collection and reporting	MRV plan implemented at national, divisional and provincial levels	Gov. funding
Subcomponent 3.3 MRV - Management and processing of MRV activities				
Improved national MRV system	3.3.1. Equipment and Software support incl. vehicles and high-resolution satellite images	Lead: MOF Strict adherence to procurement processes	MRV data and information is periodically reported	Gov. funding
Development of effective M&E system, including safeguards; trainings; data collection; reporting	3.3.2 Measurement, Reporting of ER	Lead: MOF Development of implementation plan for M%E; trainings; data collection and reporting	M&E Guidelines	Gov. funding
	3.3.3 Verification of ER	Lead: MOF Implementation of SOP for verification	Verification Reports	Gov. funding
	3.3.4 Information dissemination	Lead: MOF Implementation of Communication Strategy and Communication Plan	Communication Materials and Report	

4.4 Assessment of land and resource tenure in the Accounting Area

Assessment of the land and resource tenure in the accounting area is based on the wealth of information collected through SESA consultation (Section 5.2) coupled with the findings of the Drivers for Deforestation and Forest Degradation. Land and resource tenure are considered through the lens of Fiji ER activities as outlined in Section 4.3. Considerations are rendered for implementation (related land laws – Section 4.5), safeguards (Section 14) and benefit sharing (Section 15). Information were collated on perceptions of stakeholders from government, statutory, private and public sector. Informants were sought among iTaukei landowners and lease tenants on all types of land including native, state and freehold land.

Land in Fiji is classified and managed under three complementary tenure types- Crown Land, Freehold Land and native or iTaukei Land (Table 4-15).

Table 4-15:Forest-land categories in the ER-PD[19]

Land Tenure Categories	Closed Forest	Open Forest	Total Forest Area	% Total Area of Forest
iTaukei Land	528,100	326,268	854,368	89.9%
Crown Land	27,737	12,756	40,493	4.3%
Private Freehold Land	31,958	23,172	55,130	5.8%
Total	**587,795**	**362,196**	**949,991**	

Crown land: Approximately 4 percent of all land in Fiji is classified Crown Land, administered by the Department of Lands within the Ministry of Lands and Mineral Resources. All foreshore lands below mean high water mark are considered crown land under the Crown Lands Act [Cap 132], Soil under Fiji waters and the beds of navigable rivers and streams are classified as Crown Land. Crown leases are granted and managed by the Director of Lands.

Freehold land; Close to 6 percent of land in Fiji is classified as freehold land registered under Torrens system by virtue of registration titles to land are guaranteed. Freehold land can be purchased, transferred, or leased, subject to the conditions of the Land Sales Act [CAP 137] and Land Transfer Act [CAP 131] which, among other things, restrict the quantity of land which can be purchased by individuals who are not resident in Fiji, and by companies not wholly owned by Fiji citizens.

iTaukei Land: Over 1.52 million hectares of land in Fiji is communally owned and classified as native or iTaukei Land premised on traditional communal landowning units in the form of Mataqali or Tokatoka. These are recorded and denoted accordingly in the iTaukei Land Register. The iTaukei Land Trust Board (TLTB), set up in 1940, is mandated to act on behalf of the landowning units in order to secure, protect and manage landownership rights and facilitate commercial transaction for its use. The TLTB is the legal custodian and representative of all dealings pertaining to iTaukei land in Fiji. Given the Mataqali's customary origins, which are considered less formal, Courts have yet to recognize the Mataqali, as an acceptable legal entity and therefore the Mataqali offers no legal standings in legal proceedings. Alternatively, the incorporation of landowners' Trust through the TLTB - as a legal representative of Mataqali members, meets the requirement of legal standing.

Registration of customary land

All customary land in the ER accounting area has been charted on iTaukei Land Commission (TLC) maps and registered in the Register of iTaukei Lands (RTL) with the Ministry of Lands and Mineral Resources. However, only lands in urban and peri-urban areas have been topographically / cadastral surveyed to facilitate the issue

[19] Source FAO 2010 Global Forest Resources Assessment 2010- Fiji Country Report

of land lease titles. Although the land in rural areas may not have cadastral survey, its boundary is registered under the RTL while field marks take the form of registered and documented mounds and landmarks such as rivers, ridge and others. In the context of the ER-P, 100% of the land in the ER accounting area are registered either under iTaukei register, Crown Land or freehold. All lands in Fiji are registered, there are no unregistered lands.

Original description of customary land boundaries was established in the 1800s. Under this system, communal landowners are registered groups with no individual ownership being issued. Ownership of land is therefore vested in the Mataqali or Tribal group. This system is now digitized and simultaneously updated as the National Land Register, which contains information about landownership, right of possession and/or any other rights recorded, boundary co-ordinates, total areas and potential value.

All iTaukei land is registered under the provisions of the iTaukei Lands Act [Cap 133]. The iTaukei Land and Fisheries Commission (TLFC), originally established as the Native Land Commission in 1880, primarily keep all records of genealogies, details of social groupings and migration records, to identify and register ownership of iTaukei lands. As the ownership of land is vested in the Mataqali or other landowning unit classification (as registered in the RTL) titles are not issued to individual members. Individual members of the Mataqali are however recorded in the Vola ni Kawa Bula (VKB) which is the register of living descendants of the landowning unit. All leases on iTaukei land is recorded against the land title by the Registrar of Titles in the Register of iTaukei Leases whilst iTaukei licenses are kept by the TLTB in the Register of iTaukei Licenses.

The TLFC also arbitrates disputes relating to customary headships or titles and land boundaries. These disputes are mediated by the TLFC in the first instance and a decision following an enquiry may be appealed to the iTaukei Lands Appeals Tribunal (TLAT). There are occasional disputes over boundaries, and in the few pockets of iTaukei land not yet surveyed, where a 'Deeds System of Registration' was used for its leases. Once a boundary dispute is lodged, a proper survey of boundaries must be carried out.

Section 28 of Fiji's Constitution (2013), maintain and protects ownership of iTaukei, Rotuman and Banaban lands by customary owners and ensures that all land acquired by the State for public purposes must revert to the customary owners if that land is no longer required. The Forest Decree (1992) provides for the protection of customary rights relating to forests. To this effect, ownership of forest resources by the landowner limits the powers of the State to deal with forest resources without the approval of the owner. The Forest Decree clearly recognizes this principle and requires the approval of TLTB in all dealings with iTaukei land[20]. To this end, facilitated TLTB leases explicitly reserves the right of ownership of forest to the lessor as part of its special lease conditions.

Given that 90% of the land in the ER-P falls in iTaukei lands (Table 4-15), the primary target will be iTaukei landowning units and iTaukei communities. Hence the proposed ER-P will mostly be carried out on customary land preferably on land that are not leased in rural areas. Assuming, rural forest lands and degraded areas are the target for all ER activities, much of the land that will be committed to ER activities will fall on iTaukei lands. Should lease lands be incorporated, the registry system as proposed under Section 17 will ensure safeguards are put in pace to reduce risk of reversal.

Traditional Forest Tenure and Use Rights

In Fiji forests are owned by the people who own the land. The recognition of traditional forest use rights of customary landowners expressly includes the right to hunt, fish and collect fruits and vegetables growing wild, as well as the cutting or removal of forest products for domestic local use, without requirement for payment of fees or royalties. Traditional landowners are also allowed to cultivate the land for sustenance and well-being. There are, however, some strict limitations to traditional forest use rights, as for example: traditional forest

[20] A license can only be approved if it receives prior consent from a relevant authority de- pendent on the nature of the land tenure that is reserved. On reserved Crown Land prior consent is required from the Director of Lands. For forest reserves declared on native land, prior consent from the TLTB is required if there are no provision or royalties or royalties prescribed are envisaged at rate lower than prescribed. The requirement to obtain consent from TLTB is in recognition that the ownership of the trees and forest produce remains with landowner. It is an offence to conduct any of these activities without a license.

rights do not apply to nature reserves and forest reserves on iTaukei land, or do not give the right to set fire to grass or undergrowth. Such limitation on traditional use activities are precluded by reason of possible direct/indirect outcome of the exercise of use rights may run counter and are inconsistent with special purpose reservation and conservation goals.

Forest Use

While iTaukei landowners have access and removal rights of forest and non-timber forest resources for own use and sustenance, they also have the right to endorse the removal of timber for monetary returns through forest use license issued though institutional collaboration between the MOF (Forest Use Rights) and the iTaukei Land Trust Board (Land Access Rights). There are two types of timber extraction licenses in the Forest Decree 1992. These include long term concession (10-30 years) and annual licenses. Forest concessions are either held by a representative of the landowners or an incorporated group of landowners (where the incorporated body lease land from TLTB). A standard form for the iTaukei Forest Concession Agreement is available. The Agreement between TLTB, the landowner representative or landowners' body corporate and Conservator of Forest facilitates community based sustainable forest management and a mechanism advocate on ER-P activity as outlined in Section 4.3.

An occasional challenge in native forest harvesting is the issue of boundary conflict where neighboring landowners dispute common boundaries. Fijians prefer dialogue and often settle issues outside of court under oversight from the MOF and TLTB Estate Officers. In such cases the Ministry of iTaukei Affairs (Provincial Office) if often the mediator. The party at fault would compensate for over harvested logs (from neighboring clan). In the ER-P all disputes will abide with the REDD+ FGRM.

4.4.1 The range of land and resource tenure rights and categories of rights - holders present in the Accounting Area

The social structure of landowning units upon which, customary land holding patterns are predicated is represented by four tiered-social groupings and their inter-connected relations commencing with the *Vanua* (ref to Figure 17-1). There is a recorded total of 21,542 Vanua nationally. This is followed by the determination of the Yavusa (clan) of which there are 13,904 on record. Under the hierarchy of the Yavusa is the Mataqali (sub-clan) with a total 5,280. The Mataqali is predominantly the operational unit of any land-owning unit with regards to dealings with land and resources. The iTokatoka (extended family/sub-unit of the Mataqali) has a total of 9,979 recording, distributed over 1,193 villages nation- wide.

Legislation surrounding iTaukei Lands

The iTaukei Lands Act (TLA) recognize and maintain communal ownership of iTaukei lands and defines 'iTaukei owners' as 'the Mataqali". The Act does not recognize individuals in a Mataqali but structured to ensure the sustenance of generations of Mataqali members. iTaukei land is reserved for the future maintenance and support of members of the landowning units. It remains the property and provides inter-generational equity of the Mataqali members.

Statutory recognition of traditional communal ownership of iTaukei lands provides the legal basis for communal decision-making about the use and conservation of natural resources on iTaukei land. Communal decisions about land use – for example, the prohibition of felling of trees in specific areas – are binding on both members of the Mataqali and third parties, provided that such decisions are made according to custom. However, it is noteworthy that the TLTB may grant leases and licenses over iTaukei land that in accordance to its terms and conditions may take precedence over community land use decisions. By virtue of TLA CAP 134, all dealings regarding iTaukei Land is channeled through TLTB as the legal custodian of native lands. Any legal instrument which seeks to transfer, charge or encumber any iTaukei land without the consent of the Board shall be null and void.

Lease Arrangements for iTaukei Lands

iTaukei lands cannot be sold except to the State. Under limited and special considerations iTaukei Land can be appropriated by the State, for just compensation for public purposes. iTaukei land is not inimical to economic development and can be made available for long-term leasing with varying terms, between 30 years for agricultural use and up to 99 years for residential, commercial, and industrial uses.

The iTaukei Land Trust Board currently manages 35,586 leases, mostly for agricultural and residential use (see Fig 3-1). Ownership of iTaukei lands cannot be transferred nor sold, but user rights can be transferred via fixed term leases. iTaukei landowner, therefore, may lease land for land uses under specified terms and conditions over fixed period, through TLTB.

The TLTB, may grant leases or licenses over portions of iTaukei land, provided that the Board is satisfied that the land is not being beneficially occupied by the Fijian owners and is not likely to be required by the owners for their use, maintenance or support during the term of the lease or license. Leases and licenses of iTaukei land are made in the name of the TLTB as lessor and executed under the seal of the Board. Leases over iTaukei land must be recorded in the 'Register of iTaukei Leases'. Similarly, licenses over iTaukei land must be recorded in the 'Register of Licenses in respect of iTaukei Land'.

All iTaukei land leases are subject to the iTaukei Land Trust (Leases and Licenses) Regulation. The regulations set out (a) standard conditions applying to all leases on iTaukei land, and (b) conditions applying to leases for specific purposes (for example, residential, agricultural, gardening, grazing and quarrying purposes).

The standard conditions contained in the regulations supports positive conservation outcomes. For example:

- the lessee shall not fell trees or clear or burn off bush or cultivate any land within twenty-four feet from the bank of a river or stream' (agricultural leases).
- 'the lessee shall apply such measures to check soil erosion as may be required by the lessor in writing' (agricultural leases, grazing leases).
- 'the lessee shall not remove or dispose of by sale or otherwise any forest produce growing upon the demised land without the written consent of the lessor' (all leases).

The Board may also enter into leases for non-specified 'special purposes', subject to such terms and conditions as the Board deems appropriate. This power has been used by the Board to enter leases for conservation purposes, which is an option for REDD+. Furthermore, the Board may issue licenses over iTaukei land, granting rights to use the land for such purposes and subject to such terms, conditions and covenants as the Board deems appropriate.

Much of the softwood and hardwood plantations are grown on iTaukei leased land. iTaukei production forests under concessions and plantations of softwood and hardwood are effectively secure until the lease periods expire, when they either revert to landowners or the leases are extended. In the past, conflicts surrounding iTaukei leased lands have arisen, with long-term forestry leases often challenged by customary landowners. Vagueness in leasing procedures and in the wording of agreements often opens the door for legal challenges. Moreover, landowners may reject continuation of leases, which has proven to be a constraint to industrial investment. Land tenure arrangements, therefore, may be perceived by the private sector as an impediment to forestry sector development.

The TLTB have expressed the need for a TLTB REDD+ Policy and a REDD+ lease to formalize carbon ownership arrangements for REDD+ projects undertaken on iTaukei Land. TLTB may also serve as the register and issuer of carbon enhancement licenses (Section 17).

Alternatively, iTaukei Land can also now be accessed under an alternative lease regime of the Land Use Unit (LUU), facilitated in the best interest of the iTaukei landowners under the Land Use Decree (2010), administered by the Department of Lands. The LUU declares that it achieves its objective by leasing on "longer tenure" with the purpose of providing a livelihood for all parties' concern. Under the LUU lease regime, the land in question must first become "designated" before lessees can apply to lease it. A precondition to designation is that the subject land must be free from all encumbrances including any existing licenses.

Landowning units must consent to designation of iTaukei Land if 60 percent of qualifying registered members (18 years old) give written consent on the approved LUU Form. Once the PM who has wider discretionary powers, as advised by the Minister of Lands, approve of the designation, the land is entered into a register known as the Land Bank. Procedural differences aside, due consideration and risks assessment for a REDD+ Project on iTaukei Land under LUU and that a special lease/conservation lease under TLTB for the purposes of REDD+ ER-P are similar for lessees.

4.5 Analysis of laws, statutes and other regulatory frameworks

Fiji's legal framework for agriculture-related activities comprises over 30 pieces of legislation, as well as national policies, strategies and plans. A thorough treatment and analysis to apply legislation to REDD+ in Fiji is outlined in Legal Framework for REDD+. Key laws and statutes that directly impact ER-P includes:

- Forest Decree
- iTaukei Land Trust Act [Cap 134]
- Land Conservation and Improvement Act [Cap141]
- Land Use Decree
- Mining Act
- Fair Share of Royalties for Extraction of Minerals Act
- Environment Management Act
- Agricultural Landlord and Tenant Act [ALTA]
- Water Authority of Fiji Promulgation
- National Trust of Fiji Act
- Land Transfer Act

Forest Decree 1992

The Forest Decree of 1992 was developed after a review of the Forest Act of 1953 and made some attempt to consider the need for sustainable forest management and changes in the policy environment. In 2007 Cabinet approved the review of the Forest Decree 1992 to take into consideration the changing environment, the sharpened focus on sustainable forest management, increased landowner aspirations, new and emerging global concerns like climate change and globalization. To date, the Forest Bill 13 of 2016 was tabled in Parliament in February 2018 got referred to the Parliament Standing Committee on Natural Resources and is yet to be passed. Until the Bill is passed as a law, the Forest Decree of 1992 is the primary law regulating forest management in Fiji with the exclusion of Mahogany plantation land.
The ownership of forest resources by the landowner limits the scope of authority by the State to deal with forest resources without the approval of the owner. The Forest Decree clearly recognizes this principle and requires the approval of the i-Taukei Lands Trust Board (TLTB) in all dealings with i-Taukei land.

The Forest Decree provides for 2 categories of protected forests, i.e. Forest Reserves and Nature Reserves. Forest Reserves provide limited protection as logging activities and extraction of forest resources are permitted with a license issued by the Department of Forests. There are no provisions in the Forest Decree that provides for the extraction of forest resources and NTFP by iTaukei landowners in a nature reserve with or without a license. Resources owners are also prohibited from exercising their customary rights in a Forest and Nature Reserve.

Forest Bill No. 13 of 2016

The Forest Bill No. 13 aims to strengthen some of the weaknesses of the Forest Decree that may impact REDD+ activities in Fiji, including (i) the inconsistency of the Decree with the Fiji Forest Policy Statement of 2007, REDD+ Policy and administration of the forest sector; (ii) limitations in enforcing the provisions of the Fiji Forest Harvesting Code of Practice (FFHCOP). These issues are address in the Forest Bill and linked to proposed activity under ER-P under strengthening forest governance and law enforcement (see 4.4 – subcomponent 1.2.5).

iTaukei Land Trust Act [Cap. 134]

The instrument establishes the iTaukei Land Trust Board with vested control of all iTaukei land in Fiji, authorizing the Board to administer such land for the benefit of the iTaukei landowners (see 4.4). The Act links the land and forest regulations as set out in section 33 for leases and licenses on iTaukei forest lands. The ER activity is aligned to use leasing arrangements to secure land access rights as well as to register activities with the Board. ER activities such as forest conservation will require TLTB approval and issuance of Conservation Lease. The Forest Bill No. 13 advocated the issue of Forest Management License. This License will require accompanying long term forest lease to be issued by TLTB upon prior consent of at least 65% of Mataqali owners. Other ER activities such as carbon enhancement may require lease if third party interest is involved or an acknowledgment by TLTB that Mataqali members are utilizing their parcels of land for carbon enhancement under ER-activity.

Agricultural Land and Tenant Act (ALTA), 1976 (Cap. 270)

An amendment of the 1960 Agricultural Landlord and Tenant Ordinance (ALTO), ALTA covers agricultural leases and outlines the rights and responsibilities of both landlord and tenants. Principal provisions include: security of tenure; control on rents; payment of compensation by landlords for improvements made by tenants; application of certain statutory conditions to agricultural tenancies; statutory periods for reassessment of rent; a tribunal to which a landlord and tenant may apply in the case of dispute; strict limitations on and control of share cropping; and damages to the landlord in the case of deterioration or degradation to the land.

ALTA was introduced to rationalize the leasing of all crown, native and freehold land for agricultural purposes. ALTA covers all agricultural land in Fiji, except where the landholding is less than one hectare, or where tenancies are held by members of a registered co-operative society, where the society is the landlord (often indigenous Fijians), or where land is situated within a native reserve. ALTA includes provisions regarding the regulation and enforcement of appropriate land husbandry practices by tenant farmers. All native land and crown leases are subject to the land conservation provisions of ALTA. The challenge lies in non-compliance to conservation provisions as required under lease conditions. ER activity presents a soft and collaborative approach to work with farmers to apply climate smart agriculture while ensuring that officers of TLTB and Department of Lands area involved in the monitoring aspects to ensure that they are well positioned to monitor conservation provisions of the ALTA lease conditions.

The Agricultural Landlords and Tenants Act (ALTA) applies to agricultural land in Fiji, with the intent to harmonize the rights and obligations in all contracts of tenancy of agricultural land, which includes fruit farming and forestry however, ALTA does not apply to all agricultural lands. Exemptions include:

- land with an area less than 1 hectare (which effectively exempts a large population of small farmers in Fiji);
- tenancies held by members of a registered cooperative society of agricultural land, where the society is the landlord;
- all land in iTaukei Native Reserve.

Land Use Decree 2010

Supplementary to ALTA, the Land Use Decree No.36 (2010) recognizes that the requirement for tenants to vacate land once the fixed lease and grace period had expired causes both social and economic hardship. Government therefore amended the land laws to increase the flexibility of leases and to facilitate leasing of lands, which are currently idle or unutilized, under terms and conditions intended to be attractive to both the landowners and tenants. The Decree provides for longer tenure leases (up to 99 years) for agricultural and commercial development. The Land Use Decree is an alternative leasing mechanism for ER activities should landowners opt to use the Land Bank.

Environment Management Act (2005)

The Environment Management Act identifies environmental matters of national importance to ensure that consideration is made for the traditional owners and guardians of these matters of national importance, the maintenance and enhancement of amenity values, the intrinsic value of ecosystems, enhancement of heritage

value of building and sites and the finite characteristic of natural and physical resources when decisions are made under the authority of the Act.

Environmental matters of national importance include the preservation of the coastal environment, margins of wetlands, lakes and rivers, protection of outstanding natural landscapes and features, areas of significant indigenous vegetation and habitat of indigenous fauna, relationship of Fijians with their ancestral lands, waters, sites, sacred areas and other treasures and human life and health. Coastal environment, margins of wetlands, lakes and rivers, protection of outstanding natural landscapes and features, areas of and, relationship of Fijians with their ancestral lands, waters, sites, sacred areas and other treasures and human life and health. Of significance are the 15 laws listed in Schedule 1 of EMA referred to in the legislation as Scheduled Acts. Section 2 of EMA defines a scheduled Act to include the primary legislation and any subsidiary legislation made and include:

- Factories Act [Cap 99]
- Fisheries Act [Cap 158]
- Forest Decree 1992
- Ionizing Radiations Act [Cap 102]
- Litter Decree
- Marine Spaces Act [Cap.158]
- Mining Act (Cap 18)
- Water Supply Act [Cap 144] – Repealed.30
- Ozone Depleting Substances Act 1998
- Petroleum Act [Cap 90]
- Public Health Act [Cap 111]
- Rivers and Streams Act [Cap 136]
- Quarries Act [Cap 147]
- Sewerage Act [Cap 128] – Repealed.29
- Town Planning Act [Cap 139]

Requirements for Environment Impact Assessment in timber harvesting area is anticipated to contribute to reduced emission from forest degradation.

Water Authority of Fiji Promulgation 2007

Establishing the Water Authority of Fiji as a commercial statutory authority with the responsibility of ensuring the effective management of water and sewage activities; the protection, management and conservation of water resources. The Minister responsible has the power to make regulations regulating use, conservation and management of water resources and can limit development activities such as logging and mining which may affect water quality.

National Trust of Fiji Act [Cap 265]

The National Trust of Fiji (NTF) is a statutory body established in 1970 and funded by the Fiji Government, independent donors and multi-lateral projects. It is aimed to provide for the protection of Fiji's natural, cultural and national heritage. NTF currently protects 14 heritage sires of which 5 are natural and four cultural with the remaining 5 being community conservation projects. NTF is governed by a council elected by the Minister of Education. Of interest to ER-P is the provision for Conservation Covenants (CC) and declaration of Heritage Sites under the NTFA [Cap 265]. The CC are voluntary agreements between NTF and a landowning group or occupier of the land to do or refrain from doing an Act. Section 10(c) of the NTFA points to the nature of the covenant as restrictive in nature and therefore governed by the provision of the Land Transfer Act. Restrictive Convents are drawn up in a legal form that is approved by the Register of Titles and consented to in writing by landowners, lessee or registered proprietor of the mortgage. For native lands, landowners and TLTB are required to provide consent. Conservation covenants are flexible and may be applied to protect natural and cultural heritage values in the medium and long term. However, CC has not been widely used and may be considered as an opportunity for forest protection under the ER-P. For Heritage Sites, the NTFA provides recognition of the national significance of such sites but not legal protection.

Mining Act [Cap 146]

The Mining Act [Cap 146] reserves all minerals of all kinds including crude oil in or under all lands of all tenure as the property of the State. Minerals include precious metals, precious stones, earthy minerals, radioactive

minerals, monazite sand, carnotite, coal, metalliferous minerals but does not include clay, gravel, sand, stone or other common inert substances. The State also reserves the right to enter upon all lands in Fiji to search, dig and carry away all minerals. This condition has implications to ER activities, placing high risk of reversal to areas that may potentially have minerals or other substances under the Act.
The Mining Act is currently under legal review however in its present form, it can provide protection for water catchment areas, forest and nature reserves from mining however the limitation is that mining is subject to consent from the Conservator of Forests or the Commissioner of Water Supply (or equivalent). This is a good example where infrastructural development for water supply which be a driver of deforestation or degradation can be used as a barrier for another driver, in this case mining which has potentially more serious implications to forest and land resources.

Land Transfer Act [Cap 131]

The Land Transfer Act, (Cap 131), regulates land ownership and dealings in Fiji. It establishes a system of indefeasible title by registration using the Torrens System. Like the statutory systems in Australia and New Zealand. The Land Transfer Act therefore provides a secure system of land title by registration and applies to all three categories of land title ownership: Freehold, State or iTaukei lands. The Land Transfer Act defines land widely to include everything on the land including messuages, and hereditament, corporeal and incorporeal of every kind and description, together with all the buildings and other fixtures, paths, passages ways, watercourses, liberties, privileges, easements, plantations, gardens, mines, minerals and quarries, and all trees and timber, thereon or thereunder lying or being unless any such are specially excepted. An example of such exception is the ownership of all minerals which is vested in the State by the Constitution, and the Minerals Act. By this definition, land includes an interest in land even if the interest is personal and capable of being passed to an heir or a right of exclusive possession of the land. Furthermore, under this definition, where land is sold or transferred in any way under this Act, it is assumed that the forest carbon rights will also be transferred.

Fair Share of Royalties for extraction of Minerals (Act 11 of 2018)

The Act aims to give effect to section 30 of Fiji's Constitution (2013) to establish the process for fair share of royalties from the extraction of mineral and for related matters. Section 5 of the Act clearly stipulates share of royalties where 80 percent goes to the landowner and remaining 20 percent to the State. The landowner is described as owners of the land where the minerals are extracted from, or in the case of seabed would infer the holder of registered customary fishing rights in accordance with the Fisheries Act (1941).
Further, Section 5 of the Act also states that any royalty received by the State must be held in trust by the Minister until such time, the royalty is shared in accordance with this Act under section 7; where the State upon receipt of royalty must liaise with the relevant agencies and consider the relevant registers to correctly identify the owner(s) of the land. If the land is communally owned, the Act is clear in that the share of royalty paid to the owner must be equally distributed to all owners per the registered membership of the communally owned land. By way of clarification, the Act is prescriptive should it be difficult to identify the rightful landowner where the State will hold the royalty money in trust until such time the owner is found. Finally, section 8 provides for Ministerial powers where regulatory provisions are necessary for carrying out or giving effect to achieving the purposes of the Act.

4.6 Expected lifetime of the proposed ER Program

The proposed duration of the ER-P is approximately 5 years from 2020 to 2024. It is proposed to conduct two verifications at the end of 2022 and 2024 to demonstrate the results of the ER program. For the purpose of financial and economic projections, a total of 10 year is assumed.

The Fiji Government anticipates the implementation of ER-P with support from international community. At the end of the ER-P it is anticipated that activities implemented will merge with the national REDD+ Program and will be implemented with a prospect for result based payments from a variety of funding and market sources.

5 STAKEHOLDER CONSULTATION, AND PARTICIPATION

5.1 Description of stakeholder consultation process

National level stakeholder consultations at various levels included indigenous communities, non-indigenous commercial investors, private sector, government, non-government organizations/civil society, academic and research institutions, international agencies, faith-based organizations, urban based indigenous decision makers, National iTaukei Resource Owners Council (NTROC), Provincial and District representatives from the 11 provinces, community groups and statutory bodies. A stakeholder analysis to determine consultation process was carried out early on in Fiji's REDD+ process, during the scoping work that preceded REDD+ policy development. Subsequent efforts in recognition of the importance of stakeholder consultation and participation resulted in the development, validation and endorsement (by the REDD+ Steering Committee) of the REDD+ Consultation Strategy and Consultation Plan.

Vigorous stakeholder consultations were undertaken under the different phases of the REDD plus work in Fiji. These consultations were to ensure transparent stakeholder information sharing using consultation mechanisms that could guarantee broad community support and the full and effective participation of relevant stakeholders. This was especially regarding affected Indigenous Peoples and local communities. One safeguard promoted for the design and implementation of REDD+ is to recognise the 'full and effective' participation of relevant stakeholders, indigenous peoples and local communities (UNFCCC 2010). Legal recognition of traditional communal ownership of native lands provides a legal basis for community level decision-making about the use and conservation of natural resources on native land, thus the importance of inclusion of landowners and communities.

Village/community awareness programme were carried out by a multi-sector team which included Forestry Department, Agriculture Department (Land Use Section), trained landowners, Provincial Office, SPC and GIZ. Regular feedback and information sharing on the progress of REDD+ was also undertaken with the pilot site landowners**.** Participatory land use planning in targeted districts including Tokaimalo, Naiyalayala and Naroko in Nakauvadra, Western Viti *Levu*, included the analysis of physical and socio-economic conditions and development pathways discussed amongst the stakeholders. Multi-stakeholder consultation was conducted across various government stakeholders which facilitated discussions to address issues such as clear ownership of land boundaries between the Mataqali Namako and Nabunilagi in the Vunivia REDD + site in Vanua Levu.

Four sites were originally considered as potential REDD+ sites. The primary aim of each site is focused on biodiversity conservation. Proponents of each site presented detailed information about their site pertaining to the scope, number of landowning units involved, level of endemicity of species recorded through Rapid Biodiversity Assessments, methodology of carbon accounting and verification framework adopted. The REDD+ SC deliberated on each site to assess eligibility as a REDD+ site. Of the four, three were accepted including the Emalu Pilot Site (originally sponsored by GIZ who have recently handed the project to the Fiji Govt.), Nakau Project, Drawa Vanua Levu (supported by Live & Learn) and Nakuvadra Community Based Reforestation Project (supported by Conservation International). The fourth site, Vunivia REDD+ site in Vanua Levu was dropped after unanimous agreement of the REDD+ SC on account of the continual land dispute between two Mataqali and confirmation from the Biodiversity Rapid Assessment Team (University of the South Pacific) of the absence of endemic species. The Nakauvadra Community Based Project is an ecosystems services project financially supported by Fiji Water in partnership with Conservation International. The Project has been validated against the Climate Community and Biodiversity Standard.

Consultations in the ER-P Accounting Area

Fiji has adopted a hybrid approach for REDD+ implementation (Fiji Govt. 2014)[21]. This allows flow of funds at national, programmatic and project-scale in alignment with the Fiji REDD+ Policy. A wide range of consultation have been undertaken to support the REDD+ readiness phase. With a Communication Officer in place to coordinate the extensive consultations required for REDD+ readiness, majority of the intervention were guided by the Consultation Strategy and Plan which advocated methodologies via workshops, meetings,

[21]Fiji Government. 2014. Readiness Preparation Proposal (R-PP) Fiji. Date of Submission or revision:22 January 2014. Forest Carbon Partnership Facility.

written comments, informal get-together, focus group discussion, website, Facebook and Twitter which have proven to be effective. A list of consultation done by key agencies in support of REDD+ readiness work and or associated with REDD+ project sites is listed in Annex 5-1.

Stakeholder consultations conducted to support the development of the ER-P included;

- The SESA team conducting participatory rural appraisals in eleven villages and two non-iTaukei settlements of Indian descent from November 2016 to March 2017;
- The ER-PD Team did stakeholder consultations using participatory approaches to all the outer islands and held village level meetings in seven villages from July to August 2018;
- REDD+ demonstrations included training and awareness raising activities at:1) Emalu REDD+ pilot site, Navosa; 2) Nakau Project Site, Drawa, Macuata; and the 3) Nakauvadra Community Based Reforestation Project. Other related REDD+ projects include the REFOREST Fiji Project implemented by SPC.

Consultations on the proposed ER interventions and its potential impacts/risks in the ER-P commenced on the 29th of November 2016 and concluded on the 27th of February 2017 with field visits by multidisciplinary teams to the proposed ER-P accounting area and included work with villages and districts which contributed to the SESA process (See Table 5.1). Further information on consultation can be found in Section 5 of this ER-PD, the SESA and the REDD+ R-Package. Additional consultations in July and August 2018, included Taveuni in Cakaudrove Province of the Northern Region (which was not included in the original field-based studies) were undertaken and consultations specifically targeted women and other vulnerable households in selected ER-P provinces and were undertaken in the language of choice requested by each community group.

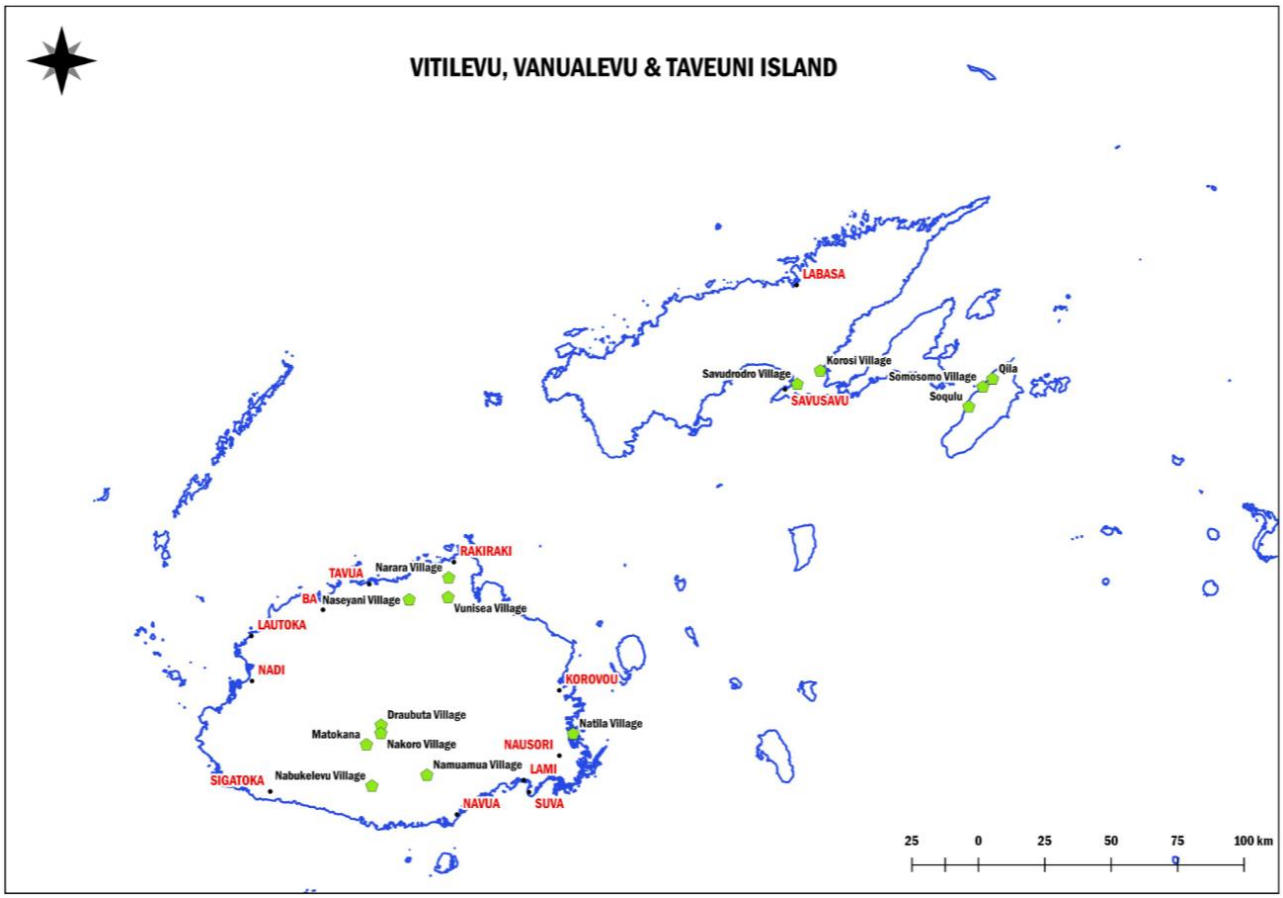


Figure 5-1: Map showing the quantitative survey sites

Several important studies have been completed to inform the REDD+ Readiness process. Key reports are available but not limited to the following listing:

- Fiji REDD Policy Scoping Report 2009
- Fiji National Forest Carbon Stock Assessment 2011
- Fiji REDD+ Strategy Workshop Report
- Fiji Forest Policy Statement 2007
- Fiji REDD+ Policy 2011
- Reduced Impact Logging and Fiji's National Harvest Code of Practice 2012
- Rural Land Use policy for Fiji 2005
- Forest Stratification in Fiji using Very High-Resolution Satellite Imagery 2014
- Fiji Forest Harvesting Code of Practice 2013
- Carbon Emission Factors of Differently Managed Natural Rainforests in Fiji 2014
- Development of technical parameters for the integration of Sustainable Forest Management 2011
- Pacific Islands Regional Policy Framework for REDD+ 2013
- REDD+ and Forest Carbon Rights in Fiji 2013

In Nakauvadra, in the Province of Ra of the Western Division of Viti *Levu* consultations were undertaken with traditional landowning iTaukei communities and where leasehold Indian-Fijian communities are located, specifically communities that either relied to some extent on livelihoods derived from the forests. Most of the iTaukei communities consulted, irrespective of gender and economic status understood the importance of forest resources to their material and spiritual well-being.

Specific consultation was carried out in selected representative communities to inform the design of the ER-P and possible non carbon benefits to consider. A list of the communities visited is outlined in Table 5-1. During all consultation's participants expressed concern that if the ER-P were to negatively impact upon their livelihoods it would need to identify sustainable livelihood activities that would benefit the household and be provided with income support during the period it would take to restore their livelihoods. However, because of the consultations, and as part of the SESA process an ESMF is drafted to ensure that the program would minimize and address any negative impacts while ensuring the positive impacts from program implementation are equitably shared. (See Section 15 on Benefit Sharing and Section 16 for Non-Carbon Benefits.)

Table 5-1: Summary of consultation visits in the ER-P region

Division	Province	Village	District	Island	Remarks
Central/ Easter	Serua	Nabukelevu Village	Serua	Viti Levu	Largely Forest Dependent
	Tailevu	Natila Village	Bau	Viti Levu	Coastal Mangrove and Upland Forest Land
	Namosi	Namuamua	Wainikoroiluva	Viti Levu	High land Forest
Western	Nadroga Navosa	Motokana	Nasikawa	Viti Levu	Degraded landscape
		Draubuta	NoiKoro	Viti Levu	High Conservation Value Forest, Degraded Grasslands
		Nakoro	NoiKoro	Viti Levu	Sugarcane and low dry forest land
	Ra	Narara	Saivou	Viti Levu	Forest Converted into Grassland
		Naseyani	Rakiraki	Viti Levu	Grassland with Pine Plantation
		Vunisea	Tokaimalo		Forest land, kava driven deforestation
Northern	Cakaudrove	Savudrodro	Savusavu	Vanua Levu	Grassland and Native Forest
		Korosi	Navatu	Vanua Levu	Largely Forest Dependent
		Qila	Cakaudrove	Taveuni	Recent Kava Driven Deforestation

Division	Province	Village	District	Island	Remarks
		Somosomo	Cakaudrove	*Taveuni*	Recent Kava Driven Deforestation
		Soqulu	Cakaudrove	*Taveuni*	Recent Kava Driven Deforestation

During July and August 2018 an additional round of consultations were undertaken by the National REDD Program Office with support from the WB Consultants who were contracted to assist Fiji complement the original consultations. There were largely qualitative in nature and details of the villages visited and their locations are listed in Table 5-2.

Table 5-2. Number of consultation meetings and socio-economic survey for ER-PD development

Island	Province	Village	District	Key Issues Discussed	Female participants (%)
Viti Levu	Serua	Nabukelevu Village	Serua	Dissatisfaction with payment of logging royalties; Boundary demarcation disputes; Poor communication with forestry officials; and, TLTB not as transparent as it could be.	37.5% M:20 F:12
Viti Levu	Tailevu	Natila Village	Bau	Disputes over access to and use of mangrove aquatic products and relatively poor communication with forestry officials.	50.0% M:25 F:25
Viti Levu	Ra	Narara	Saivou	Converted land not suitable for productive grassland-based livelihoods; quality of watershed now very poor; and, landslides becoming more of an issue.	33.3% M:12 F:06
Viti Levu	Ra	Naseyani	Rakiraki	As with Nasara except that Fiji Pine has very poor outreach and does little to improve livelihoods.	37.1% M:22 F:13
Vanua Levu	Cakaudrove	Savudrodro	Savusavu	People do not understand native forest being converted to grassland is not a sustainable activity and there are negative impacts of a trans-generational nature.	23.0% M:18 F:06
Vanua Levu	Cakaudrove	Korosi	Navatu	Conserving forests is very important for cultural and environmental reason, but livelihoods also must be considered.	50.0% M: 25 F: 25
Taveuni	Cakaudrove	Qila	Cakaudrove	Kava is a cash crop that is making local villagers quite well off and conserving the forests does not pay for children's	28.5% M:15

Island	Province	Village	District	Key Issues Discussed	Female participants (%)
				school expenses or other livelihood needs.	F:06
Taveuni	Cakaudrove	Somosomo	Cakaudrove	Much the same as Qila Village except some "blame" apportioned to "outsiders" from other Islands.	42.8% M: 12 F: 09
Taveuni	Cakaudrove	Soqulu	Cakaudrove	To save the forests REDD+ needs to engage more effectively with local communities and forest experts cannot explain to us why we should deforest the slopes to plant Kava.	30.7% M: 09 F: 04

5.2 Summary of the comments received and how these views have been considered in the design and implementation of the ER Program

Issues raised during the consultation process related to illegal logging, forest values, livelihoods, tenure, forest protection and management, planning and others relevant to REDD+ are summarized in Table 5.3

Table 5-3 Specific issues raised during different consultations with village communities

Consultation	Issues raised	Notes
Narara/Vunisea - Nakauvadra	Concerns were expressed about food and nutritional insecurity (especially traditional crops that are increasingly stressed possibly as a result of climate change), increasing water shortages (poor management of watersheds in forested areas), poor road access and lack of electricity (government's inability to finance such infrastructural developments).	The Reforestation Project in Nakauvadra addressed food and nutritional insecurity by the introduction of traditional crops and fruits and sustainable agriculture amongst other initiatives under livelihoods projects in the district where reforestation was introduced. Increasing water shortages and poor management of watershed areas were addressed through targeted reforestation of watershed areas in some of the sites. Underpins the need for climate resilient crops and that re afforestation activity have the real potential to bring drastic changes to rural communities through introduction of new revenue streams. For instance, several communities worked together on reforesting an allocated piece of land and the funds went to the payment of electricity for all the villages in the district.
Emalu, Nadroga.	Root crops, water shortage, Poor road access and no electricity	These issues were addressed through the land use plan developed for areas around the pilot site. The land use plan (LUP) considers economic, environmental, social and cultural issues. The Approach and lessons learnt will be fed into the district land use planning guidelines. Positive experience indicating relevance of the land use plan and how landowners use the LUP to rationalize resource use.

Consultation	Issues raised	Notes
Dreketi, Macuata	Poor road access and severe seasonal water shortages.	Multi-stakeholder consultation was conducted across various government stakeholders which facilitated discussions to address issues raised by the communities. Resource owners' consultations were conducted to raise awareness on REDD+ and its objectives and the opportunities and conditions for the two Mataqali to ensure the adherence of the FPIC process. Discussion with landowners confirmed willingness to engage with replanting and restoration of degraded areas.
General issues from different phases of REDD+ Work	Stakeholder interviews reveal that customary rights are inconsistently treated under current leasing regimes. Customary rights to land are by nature inalienable but this is not considered as part of the valuation of customary land, nor is this considered part of negotiations towards specific benefit sharing aspects. The interplay of customary and common law has meant that the valuation of customary land has an unclear and non-market basis compared to the informed and consistent considerations basis used on freehold lands.	Information sharing with local communities also takes place through non-governmental avenues, such as through NGOs or civil society groups. For example, the Live and Learn REDD+ project in Drawa on *Vanua Levu* Island includes community education activities regarding the value of forests and the ability of forests to provide important yet non-tangible benefits and ecosystem services other than the potential monetary value of forests that can result from logging activities.
General issues from different phases of REDD+ Work	Cultural intangibles are similarly absent as part of the compensation matrix, especially the social impact of long-term leases on rights informing deliberations on whether adverse effects will result in impairment, suspension or termination of these rights at the end of a lease	Nature Fiji-Mareqeti Viti, has been assisting the Fiji Department of Forests in the communication of the Fiji Forest Policy, capacity building on the valuation of forest-based ecosystem services, awareness on the Fiji Forest Harvesting Code of Practice and consultations on the establishment of permanent forest estates. Discussion with landowners affirm interest to co-manage long term leases where they are actively involved in the management of the resources.
General issues from different phases of REDD+ Work	Community-based and district and provincial level land-use plans to be incorporated into a national land use plan (LUP)	Drawa community-based resource management had been a model for sustainable forest management and other sector demands, such as agricultural livelihood activities community development, and food security. Nakauvadra Reforestation Project include the drawing up of district land use plans, which then fits into the Provincial Plan and should be aligned to a National Land Use Plan. Field experience affirms that District LUP is an opportunity to collectively discuss resource allocation and make communal decisions on land uses. The challenge lies in the institutionalization of such plans to be recognized by authorities such as TLTB and others. The ER-P provides a platform to facilitate national

Consultation	Issues raised	Notes
		recognition of District Land Use Plans which could inform the National Land Use Plan. .
General issues from different phases of REDD+ Work	Men, mainly the landowners of the actual REDD+ site, village headmen, and youth leaders, are well informed on the REDD+ project. In some iTaukei communities, women are not directly engaged in conservation efforts or initiatives such as REDD+ despite the very important role they play in the utilization of resources from the forests. And they are not currently represented in decision making processes relevant to REDD+.	A gender action plan as part of the ESMF has been prepared to ensure that women benefit from ER-P interventions. The action plan includes gender specific indicators to monitor outcomes and impacts of the intervention Gender inclusion continue to be part of the REDD plus Strategies for future inclusion in all REDD sites. The DODD Component of the REDD + work has included a Gender Mainstreaming Strategy to specifically address gender inclusiveness in communities.
General issues from different phases of REDD+ Work	Non-iTaukei communities, specifically the Indo-Fijians and Chinese farmers, have yet to be fully engaged in land conservation work, including REDD+.	Under the SESA stakeholder consultation Indo-Fijian farmers in the Nakauvadra communities were also part of the discussions, most live in the lowland areas thus in most cases, did not have access to forested land but some communities are located contiguous to forested areas and coastal mangroves.
General issues from different phases of REDD+ Work	Need for alternative livelihoods where a management intervention is implemented to safeguard their livelihoods.	In Nakauvadra and other REDD sites alternative livelihoods have been implemented through smart agriculture practices, bee keeping, aquaculture, model farms, planting of traditional crops and other income generation activities.
General issues from different phases of REDD+ Work	Illegal logging, forest values, forest management	Illegal logging, protection of forest values and forest management have been addressed via a wide range of community-based initiatives in existing REDD + sites and will continue to be addressed in management interventions through policies, traditional management and awareness and training at community level,
General issues from different phases of REDD+ Work	Land tenure, access to resources and livelihoods have been cited as the most important social issues identified through the SESA and quantitative survey with relation to the implementation of REDD+ activities in the ER-P	All people residing on native land are either landowners or tenants who have the permission of the landowning clan. Residents on native land have either formalized status through legal lease arrangements with the TLTB or have informal (Vakavanua) agreements with the landowning Mataqali. Livelihoods projects have been introduced as part of reforestation and management in all sites.
General issues from different phases of REDD+ Work	Some dissatisfaction was expressed by a “minority” of people consulted with the existing leasing agreements and whether the TLTB could look for ways to assist iTaukei landowners economically better off as a result of investing leasing monies in sound business ventures that would generate higher returns. This group of people do not consider investing in	This is not a criticism of the TLTB per se and few are interested in entering into leasing arrangements with the Land Bank because they see the TLTB as protecting the customary land of the iTaukei, but they want the TLTB to be more proactive rather than reactive. And women would also like to see the TLTB be a bit more gender sensitive.

Consultation	Issues raised	Notes
	forest-based activities – as much as they love the forests – as able to grow wealth for their children and grandchildren.	

6 OPERATIONAL AND FINANCIAL PLANNING

6.1 Institutional and implementation arrangements

National oversight

The ER-P program implementation spans 4 four main divisions, i.e. Central, Eastern, Western, and Northern which are divided into 11 provinces (*Yasana*), 155 districts (Tikina) and 982 registered villages (Koro) spread over the islands of Viti Levu and Vanua Levu and Taveuni. Figure 6.1 presents an overview of the institutional and implementation arrangements of the ER program at national, divisional, districts and village levels.

The MOF is the lead agency and national REDD+ focal point responsible to coordinate and implement REDD+ activities. The Conservator of Forests approves all REDD+ ER program activities after consulting with the REDD+ Steering Committee.

The REDD+ Steering Committee (SC) provides the administrative oversight for REDD+ activities in Fiji. Members of the REDD+ SC at national level include:

- **The Ministry of Economy** is the national focal point for UNFCCC and lead negotiator in international climate change meetings and coordinates with the MOF in representing Fiji's REDD+ agenda at international meetings.
- **The Ministry of iTaukei Affairs** is responsible for developing and promoting policies to ensure good governance and welfare of the *iTaukei*. This Ministry strives to ensure that the rights and interests of the iTaukei are safeguarded in the REDD+ process.
- **The iTaukei Land Trust Board** is the custodian of iTaukei land in the country. Almost 90% of land in Fiji is customary owned. The Board provides guidance on the use of iTaukei land and represents the interests of iTaukei landowners.
- **The Department of Environment** is the national focal point for the Convention on Biological Diversity (CBD). This is the lead agency in ensuring biodiversity is protected and monitored at the national level.
- **The Ministry of Lands and Mineral Resources** manages State land including mangroves. This Department hosts the Land Bank where landowners can "deposit" their land to be invested on their behalf. The Ministry provides guidance on the use of State land and on land deposited in the Land Bank. The Ministry is also responsible for regulating the exploration and development of Fiji's mineral, petroleum and other related non-living resources of the country.
- **The Department of Agriculture** is the lead agency for the agricultural sector and is the national focal point for UNCCD. The department guides the development and implementation of agriculture policies and incentives to support REDD+ strategies. Given that agriculture is the main cause for deforestation in Fiji, the department plays an important role in addressing this issue.
- **The Ministry of Rural and Maritime Development, Natural Disaster and Meteorological Services i**s responsible for administering government activities at the rural and provincial levels. The Provincial Administrators (PA) are close to the ground and support coordination and monitoring of REDD+ pilot site activities. The office of the PA reports directly to the Commissioner in each subregion (North, West and Central/Eastern). The Commissioner in each subregion is the Chairperson of the REDD+ Divisional Working Group.
- **Representatives of non-governmental organizations** carry out REDD+ activities and contribute to the development of national-scale M&E, provide inputs to guidelines on safeguards, ensure compliance of national procedures, exchange of experience and lessons learned, facilitate community engagement, ensure good governance and transparency and represent the interests of various social groups. The NGOs in the committee are Conservation International and Live and Learn Environmental Education.
- **Private forestry sector (timber industry)** plays an important role in reducing forest degradation and in the implementation of the Fiji Harvesting Code of Practice.
- **Fiji Pine Limited** is a public enterprise and one of the largest plantation industries in Fiji. The company will support and identify opportunities for REDD+ activities pertaining to plantations.
- **Fiji Hardwood Corporation Limited** owns majority of the mahogany plantations in Fiji. The company will support and identify opportunities for REDD+ activities pertaining to plantations.

- **REDD+ iTaukei resource owner representatives** ensure that landowner rights and interests are addressed as most of Fiji's forests are owned by indigenous communities.
- **The Department of Women** looks after interests of women and is the responsible agency for the National Gender Policy
- **The Ministry of Youth and Sports** ensures the representation of youth interests and coordinates the country's largest network of youth groups in rural and urban areas

Divisional Oversight

The program will be under the management of the MOF through direct oversight of the REDD+ Unit. The REDD+ Unit will oversee the ER Program implementation. The REDD+ Unit is a part of the Management Services Division (see Section 9.2).

The REDD+ Unit is supported at sub-regional level by REDD+ Divisional Working Groups. Members of the REDD+ Divisional Working Group consist of:

- **Chairperson**: Commissioner – designated officer responsible for oversight of public and private interventions across administrative boundary of North, Central/Eastern and Western Divisions.
- **Members:**
  1. Senior Administrators of all Government Agencies, private entities and participating NGOs of the REDD+ SC through their offices at Divisional level.
  2. Conservation Officers at Provincial Council Offices
  3. Forest Wardens (FW)
  4. Representatives of Land Care Groups such as relevant Commodity Clusters (Kava, Taro, Livestock and others)
  5. Representatives of Forest Care Groups

A schematic representation of the hierarchy of relationships between the national, divisional, district and village level administration are presented in Figure 6-1; governance and implementation arrangements of ER Program activities at different levels are presented in Figure 6-2.

Site Level Implementation

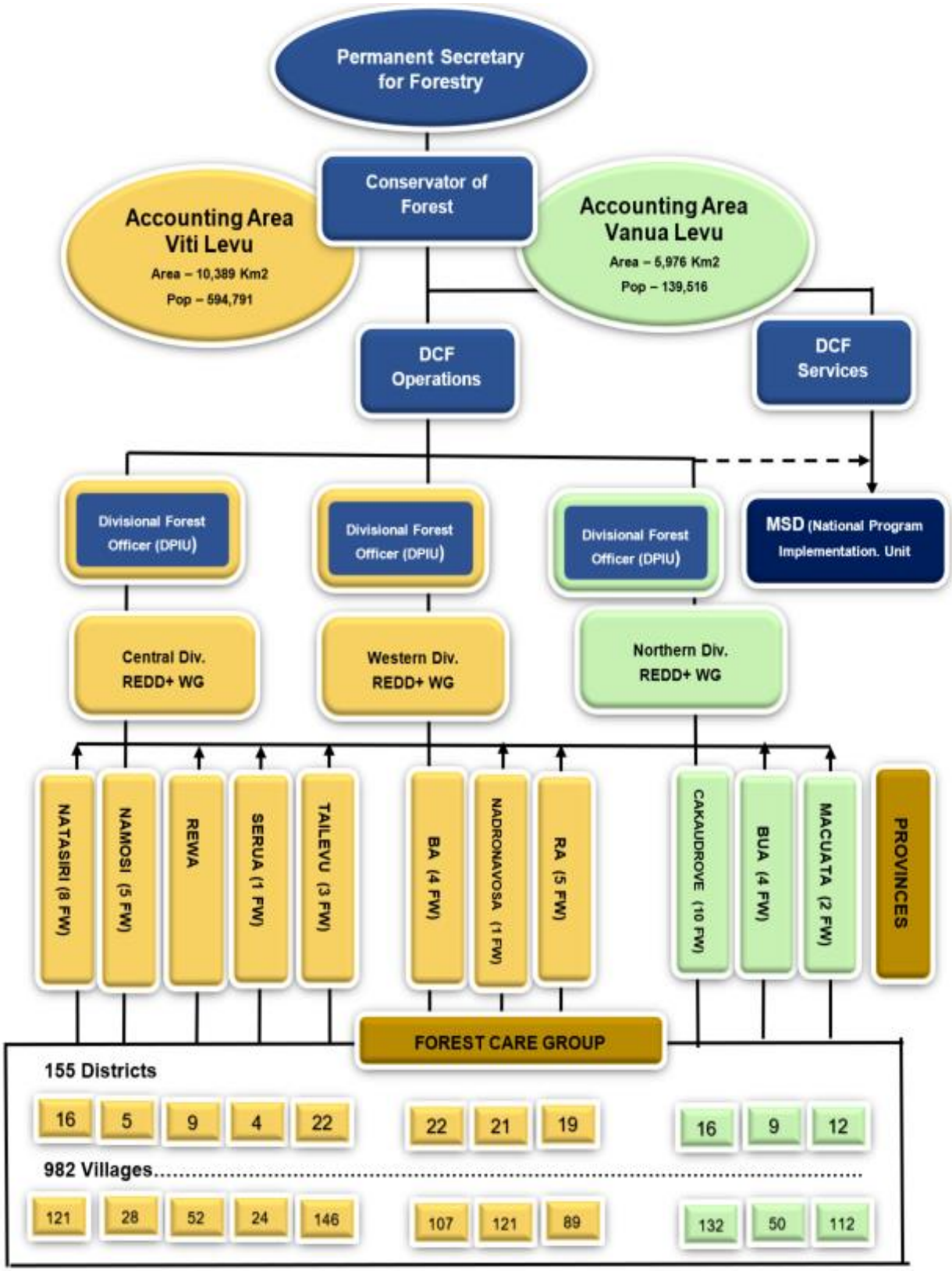
At the site level, the Forestry Beat Officer will be assisted by the Forest Warden (FW) to lead site-level implementation of activities and will be supported by the Agriculture Extension Officers. Community monitoring will be led by the Provincial Council Chief Executive Officer or Roko Tui and/or Conservation Officer.

FW will be the point of contact at the village level. FW will work closely with the *Yaubula Management Support Teams (YMST)* as well as other voluntary community groups such as the Forest Care Group, Land Care Groups, the Commodity Cluster Groups.

The FW will be required to report on (a) the progress of implementation of ER-P activities at site level, (b) landowner grievances and issues that require immediate intervention and redress; (c) on opportunities that may arise to strengthens ER- P national position, and (d) advice on options for efficient and effective implementation and delivery of ER products and services with the widest coverage and greatest impact. Reports are submitted monthly to the Divisional Forest Officer who will collate and present to the REDD+ Divisional Working Group.

Implementation of Benefit Sharing Plan and Safeguard Plan

Successful implementation of the benefit sharing plan will depend solid assessment of existing mechanisms and the development of strong legal frameworks with clear definitions of carbon rights and ownership. It is anticipated that carbon rights, once defined will be enshrined in a policy and linked to strong legislative framework that would support and guide implementation of safeguards (Section 14) and benefit sharing (Section 15).



DCF: Deputy Conservator of Forest; **DPIU** – District Program Implementation Unit; **MSD**: Management Services Division/REDD+ Unit; **Div:** Divisional; **WG**: Working Group**; FW**: Forest Warden. Note the Divisional Working Group includes representatives from Private Sector

Figure 6-1: Implementation Arrangement: Forest Warden (FW) and Ministry of Forestry

Recommendation from the study on FGRM will be adopted and mainstreamed into the REDD+ ER-P via the REDD+ Steering Committee through community consultation.

Stakeholder consultations and information sharing

Stakeholder consultation of the ER-P activities will align with existing framework such as the Ministry of iTaukei Affairs, Provincial Council Office as well as the Commissioner's Office under the Ministry or Rural and Maritime Development and National Disaster Management. Information dissemination will be coordinated by

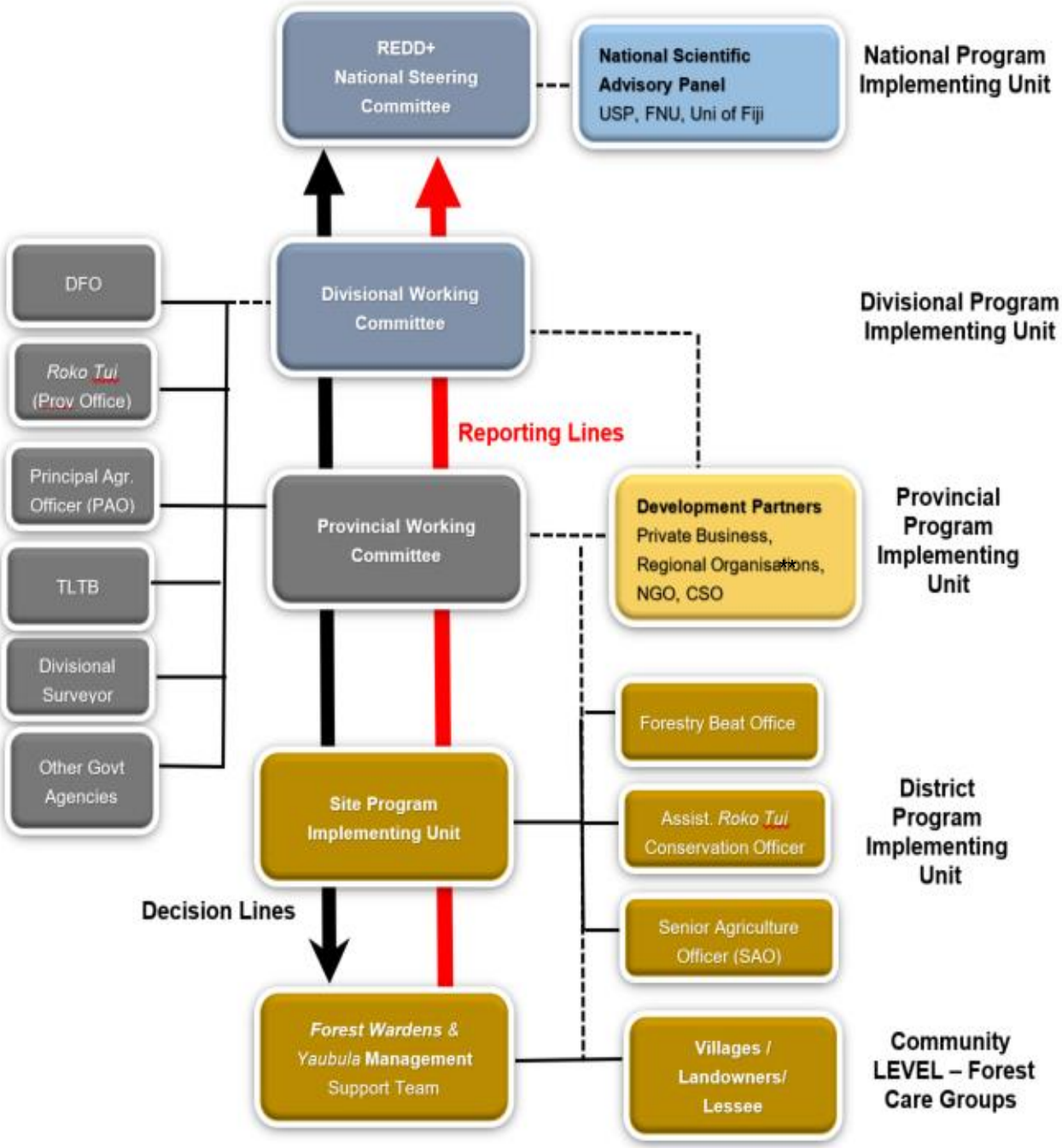


Figure 6-2:Governance & Implementation Arrangement of ER program from National to Site Level

***Note – Private Business includes all forest sector enterprise operating in the ER-P accounting area*

the MOF through the Divisional REDD+ Working Groups and through newsletters, radio programs, newspapers and social media. Decision and reporting channel are outlined in Figure 6-2.

6.2 ER-Program budget and financing plan

6.2.1. ER Program Budget (uses of funds)

The draft financing plan estimates a total **ER-Program budget of USD $42.446 million** for the implementation time 2020-2024. See Table 6-1 for summary of the costs. It is divided into three major components which are closely linked to the ER-P design components outlined in Section 4.3.

Component 1: Strengthening Enabling Conditions for Emission Reductions (~USD $1.648 million)
This component involves Integrated District Land Use Planning to promote integrated landscape management and strengthening forest governance and law enforcement. It also aims to invest in an improved forest information system to support forest sector planning and decision making.

Component 2: Promoting integrated landscape management (~ USD $36.681 million)
This is the core component of the ER-P and will have the largest contribution to the reduction of emissions and enhancement of removals by sinks. It will focus on:

- Sustainable natural forest management contributing to reduction of forest degradation;
- Afforestation and reforestation; and softwood and hardwood plantations contributing to the enhancement of forest carbon stocks;
- Afforestation and reforestation to restore ecosystem services
- Promotion of agroforestry and enhanced livelihoods contributing to the reduction of deforestation pressure and
- Promotion of forest protection, to conserve and restore natural forests.

Sub-component 2.1: Sustainable natural forest management (USD $0.974 million) will involve adherence to the FFHCOP in the lease agreements and will require at least 5 lease agreements to be approved per year. Furthermore, this sub-component will require monitoring of logging to required standards. This is expected to take place on 10 sites per year.

Sub-component 2.2: Afforestation and reforestation – softwood and hardwood timber plantations (USD $7.845 million) will involve investments in reforestation in pine (2,500 ha/year) by Fiji Pine Ltd., mahogany (780 ha/year) in cooperation with the Fiji Hardwood Corporation.

Sub-component 2.3: Afforestation and reforestation - restoration of ecosystem services (USD $13.847 million). The sub-component will finance the landowner engagement through Fiji Pine Trust Extension Scheme through annual reforestation of at least 200 ha/year of Pine woodlots in degraded woodlands (total of 1,000 ha over ER-P period). It will also finance restoration of 1,200 ha of afforestation/reforestation per year.

Sub-component 2.4: Promotion of climate-smart agriculture and enhanced livelihoods (USD $10.750 million) will aim to implement climate smart agriculture using riparian restoration and using shade grown agriculture. Furthermore, this sub-component will support alternative livelihoods through connecting farmers to markets and improvement in the value chain of agroforestry products.

Sub-component 2.5: Promotion of forest protection to conserve existing natural forest carbon stocks (USD $3.265 million) will protect forest areas by strengthening legal and policy environment surrounding protected areas. This will involve implementing a natural forest community conservation agreement, formalizing protection of forest area under the Forest Decree 1992 and other instruments such as the TLTB Act and developing and implementing a community-based Forest Protection Management Plan based on co-management regime between the Forest Management Enterprise and management body of the Protected Area (50,000 ha). This sub-component will also secure sustainable financing to support conservation of forests in protected areas and to provide for seed funding to establish additional protected areas.

Component 3: Program Management and Emissions Monitoring (USD $4.117 million)
This component includes the program administration and financial management of the ER-P. It also includes the monitoring and evaluation, safeguards compliance, MRV system, communication and awareness raising programs of the ER-P implementation.

6.2.2. Financing strategy (sources of finance)

The ER program financing is categorized into domestic and international sources and Carbon Fund contributions. Eighty percent of financing is from the Fiji Government, International sources and the Carbon Fund. The remaining 20 percent will be funded from private enterprise in Fiji. The details of the cost of the program are presented in Table 6-2 and details of the anticipated financing sources are presented in Table 6-3.

The ex-ante estimates (see section 13) predict at least 2.5 million tCO2 net emission reductions over the period 2020-2024 after allowing for a conservativeness factor of 8 percent for uncertainty in the emissions from deforestation; and afforestation and reforestation; and 15 percent for uncertainty based on the proxy approach to the estimation of emissions from forest degradation; and a reversal risk buffer of 26% of the ex-ante emissions reductions. Valuing the 2.5 million tCO2 at a price of USD $5 /tCO2, the Carbon Fund results-based payment will contribute approximately USD $12.5 million to the financing of the program.

Table 6-3

6.2.1.1 Domestic financing

Public (government budget plus external sources)

The government budget will contribute USD $13,327,225 million over the ER-P timeframe. It is expected that this will be complemented by International Financing and Carbon Fund Financing to meet the total project costs. A review of the existing governmental programs and supported projects was conducted to assess their potential to finance the ER-P interventions. The MOF is well positioned to provide budgetary support during ER-P subject to annual budgetary approval from the Ministry of Economy. Government of Fiji has demonstrated commitment to provide additional budgetary support to the ER program in future should there be shortfall in international financing sources. Projected budget to the MOF over the next five years is outlined in Table 6-1.

Table 6-1: Projected Budgetary allocation for the MOF

Agency	Fiji Government USD	YR:2020	YR:2021	YR:2022	YR:2023	YR:2024	TOTAL
MOF	Reforestation of Degraded Forest	500,000	2,088,002	2,130,614	2,309,736.	2,245,163	9,273,515
	Reforestation of indigenous species	125,000	250,000	255,102	276,548	268,817	1,175,467
	Reducing Emissions from Deforestation and Forest Degradation (REDD+)	245,350	514,700	525,229	569,358	553,440	2,408,077
	Sandalwood Development Program	50,000	100,000	102,040	110,619	107,526	470,185
	TOTAL (USD$)	**920,350**	**2,952,702**	**3,012,960**	**3,266,261**	**3,174,946**	**13,327,244**

6.2.1.2 International financing sources

The secured International financing sources include Global Environmental Finance (GEF) will provide USD $2.1 million in financing to facilitate the implementation of the ER-P. This funding will go exclusively towards investments in restoration of degraded forests and enhanced carbon stocks. The project is anticipated to kick off in January 2020.

While not secured, a restoration project initiated by the Ministry of Forest and UNFCC in 2017 is in submission to the Green Climate Fund. The prospect appears to be good for the project and once approved will span a total of 10 years at a total cost of US$31.477million. In addition, Government of Fiji is in discussions with several bilateral and multilateral agencies for securing additional sources of funding in support of the ER program. The information on international financing sources is expected to be updated by the MOF on annual basis during the program implementation.

Private

Private sector financing is expected to contribute USD $8.4 million to program implementation (20% of total budget). The investment is expected support revenue-generating reforestation and afforestation activities and sustainable natural forest management (reduced impact logging and agricultural interventions).

Private sector investment has been committed by Fiji Pine and Fiji Hardwood (mahogany) and smaller companies and farms to fully fund the activities implemented under sub-component 2.2 – Afforestation and reforestation – softwood and hardwood timber plantations. To a large extend the financing of the private sector activities will be generated from cash flows of forestry and agricultural production activities under the sub-component 2.2.

Table 6-2 Summary of the total ER-Program costs (expected uses of funds)

	Activity	USD	Year 2020	Year 2021	Year 2022	Year 2023	Year 2024	Total
1	**Strengthening enabling conditions for emissions reduction**	**USD**	**437,530**	**407,651**	**315,862**	**296,929**	**189,658**	**1,647,630**
1.1	Integrated District Land Use Planning (IDLUP) to promote more sustainable long-term integrated landscape management	USD	367,630	337,751	246,962	230,029	124,758	1,307,130
1.2	Strengthening forest governance and law enforcement	USD	50,400	50,400	49,400	47,400	45,400	243,000
1.3	Forest information system	USD	19,500	19,500	19,500	19,500	19,500	97,500
2	**Component 2: Integrated Landscape Management**	**USD**	**5,396,113**	**6,459,686**	**8,041,725**	**8,109,078**	**8,674,540**	**36,681,142**
2.1	Sustainable natural forest management	USD	194,828	194,828	194,828	194,828	194,828	974,140
2.2	Afforestation and reforestation plantation	USD	1,721,226	1,721,226	1,721,226	1,340,900	1,340,900	7,845,478
2.3	Afforestation and reforestation restoration of ecosystem services	USD	782,550	1,775,950	2,769,350	3,762,750	4,756,150	13,846,750
2.4	Agroforestry and enhanced livelihoods	USD	2,150,000	2,150,000	2,150,000	2,150,000	2,150,000	10,750,000
2.5	Promotion of forest protection, to conserve existing natural forest carbon stocks.		547,509	617,682	1,206,321	660,600	232,662	3,264,774
3	**Component 3: Program Management and Emissions Monitoring**	**USD**	**1,076,585**	**776,586**	**1,236,585**	**776,585**	**988,974**	**4,855,315**
3.1	Program coordination and management[22]	USD	605,525	605,526	605,525	605,525	605,525	3,027,626
3.2	Monitoring and evaluation (M&E), including monitoring of safeguards	USD	15,000	15,000	15,000	15,000	15,000	75,000
3.3	MRV - Implementation and management	USD	456,060	156,060	616,060	156,060	368,449	1,752,689
	Total	**USD**	**6,910,228**	**7,643,923**	**9,594,172**	**9,182,592**	**9,853,172**	**43,184,087**

[22] This includes Safeguards and ESMF implementation including Gender Action Plan (See Table 4-14)

FCPF Carbon Fund

The Letter of Intent (LOI (see Annex 6-1) between the Government of Fiji and Carbon Fund permits up to 3.5 million tCO_{2e} emission reductions to be offered to the Carbon Fund. Assuming a negotiated carbon price of USD \$5/tCO_2 results-based payment could add up to about USD \$12.5 million based on the available estimated emission reductions which can be used to support the implementation of the ER-P and for benefit sharing with communities.

The ex-ante estimates (see section 13) predict at least 2.5 million tCO2 net emission reductions over the period 2020-2024 after allowing for a conservativeness factor of 8 percent for uncertainty in the emissions from deforestation; and afforestation and reforestation; and 15 percent for uncertainty based on the proxy approach to the estimation of emissions from forest degradation; and a reversal risk buffer of 26% of the ex-ante emissions reductions. Valuing the 2.5 million tCO2 at a price of USD \$5 /tCO2, the Carbon Fund results-based payment will contribute approximately USD \$12.5 million to the financing of the program.

Table 6-3 Total Financing Sources (Sources of funds)

Expected Sources of Funds	Unit	Total
Total program cost (uses of funds)	USD	42,446,398
Financing Sources		
Fiji Government	USD	13,327,244
External Sources (anticipated)	USD	8,889,071
Carbon Fund results-based payment[23]	USD	12,573,154
Fiji Pine Ltd.	USD	6,704,500
Fiji Hardwood Corporation	USD	1,140,978
Logging Industry (private)	USD	549,140
TOTAL sources	**USD**	**43,184,087**

6.2.3. Financial and economic analysis

The **financial and economic analysis** or cost-benefit analysis is conducted to assess the contribution of the project to society's welfare and to inform the decision of whether to invest into a project. The analysis gives monetary value to the benefits (positive welfare) and to the costs (negative welfare) effects of the project by applying a discounted cash flow analysis. Discounting allows the comparison of future costs and revenues in present day terms. For financial analysis, a discount rate of 12% is used, with sensitivity analysis also conducted to assess how project net benefit changes with differing discount rates.

The **financial analysis** takes into consideration the costs and revenues that constitute financial flows between actors and for which actual functioning market exists, while the **economic analysis** integrates externalities such as environmental cost and benefit, e.g. biodiversity, carbon, soil productivity or avoided losses due to natural catastrophes.

The net present value (NPV) and internal rate of return (financial - FRR / economic – ERR) are used as performance indicators. The NPV is the result of the discounted cash flow analysis. The FRR and ERR is the discount rate (%) that would result in the net present value of zero.

Financial analysis
The financial analysis considers the total costs of the program over a period of 20 years that will be incurred by the Government of Fiji and the various implementation agencies. These were estimated at USD $212.57 million (valued at current costs). To account for the financial benefits of the program implementation, forest products from natural and plantation forests and agricultural products were valued at current market prices. In total the benefit will amount to USD $758 million over 20 years. The Financial Analysis also incorporates carbon revenue and uses the agreed USD $5 per tonne value of carbon to show carbon revenues.

Based on these estimates the **Financial Rate of Return (FRR) for the ER-Program is 14.5% after 10 years and results in an NPV of USD $4.7 million**. The FRR after 20 years is 28.07% and the Net Present Value of the project is USD $87.39 million. This analysis indicates that the financial returns from the program investment are justified in the medium and long term.

Economic analysis
The economic analysis assumes additional economic benefits for the national economy and integrates additional imputed benefits in the analysis. The costs remain the same as in the financial analysis. The economic analysis incorporates a social discount rate of 6%[24]. All other specifications remain the same.

The economic analysis results in an NPV of USD $22.5 million over 10 years and USD $215.37 million over 20 years. The ERR is the same as for the financial analysis, namely 14.5% after 10 years and 28.07% after 20 years.

[24] This follows World Bank guidance: *Discounting Costs and Benefits in Economic Analysis of World Bank Projects, May 9th 2016*

7 CARBON POOLS, SOURCES AND SINKS

7.1 Description of Sources and Sinks selected

The deforestation and forest degradation sources contribute significant emissions in the ER Program. However, there also exist significant removals by sinks from forest enhancement and reforestation. The sources and sinks of the program are presented in the Table 7.1.

Table 7-1: Justification of sources and sinks included in the ER program

Sources/ Sinks	Included?	Justification / Explanation
Emissions from deforestation	Yes	Deforestation has mainly taken place in natural forests such as conversion of forests to commercial and subsistence agricultural cultivation, infrastructure development etc. ER Programs must account for emissions from this REDD+ activity.
Emissions from forest degradation	Yes	The source 'forest degradation' is included in Fiji's FRL. Emissions from forest degradation are considered significant [ER-PIN, 2016]. Currently unsustainable forest management practices are widespread in Fiji, causing a decline of carbon stocks in Natural Forests. The Government of Fiji is planning to increase the area of natural forest under sustainable management. Additionally, fire contributes to degradation predominately of softwood plantations and is included in the estimation of emissions. Management of fire has become a National priority through the establishment of a National Fire Strategy in 2018/2019. Additionally, fire contributes to degradation predominately of softwood plantations and is included in the estimation of emissions. Management of fire has become a National priority through the establishment of a National Fire Strategy in 2018/2019.
Removal from enhancement of forest carbon stocks	Yes	The sink 'enhancement of forest carbon stocks' is included in Fiji's FRL. The ER-PIN [2016] identifies afforestation/reforestation (AR) activities on degraded lands as key to increase greenhouse gas (GHGs) removals. The sink 'enhancement of forest carbon stocks' also includes areas belonging to the stratum Forest Plantations. In collaboration with the private sector, the MOF (MOF) is planning to increase the area of sustainably managed forest plantations.
Emissions and/or removals from conservation of carbon stock	No	The national REDD+ activities are not clearly defined at this stage for the monitoring and reporting of conservation of carbon stock.
Emissions and/or removals from sustainable management of forests	No	There is unclear definition of this activity under national REDD+ scheme and there are no clear boundaries for forest areas under sustainable management. Therefore, this activity is assumed to be included in the above REDD+ activities.

7.2 Description of Carbon Pools and greenhouse gases selected

The selection of carbon pools and greenhouse gases for the construction of FREL/FRL in the ER-PD is presented the tables below:

Table 7-2: Carbon pools and gases included in the construction of the FREL/REL

Carbon Pools	Selected?	Justification / Explanation
Above Ground Biomass (AGB)	Yes	This is the largest carbon pool and is impacted by the sources of deforestation and forest degradation.
Below Ground Biomass (BGB)	Yes	This is a significant carbon pool. As there is no country specific data on BGB, it is estimated using IPCC 2006 default values.
Dead wood	No	No national data is currently available for deadwood. IPCC 2006 (Vol 4, Chapter 2) notes that Tier 1: Carbon stock of DOM is assumed to be 0 for non-forestland use categories. Deadwood data has not been estimated in the Fiji national forest inventory. In the future, a stepwise approach is proposed to be applied in MMR to improve the measurement of this carbon pool.
Litter	No	No national data is currently available for litter. IPCC 2006 (Vol 4, Chapter 2) notes that Tier 1: Carbon stock of DOM is assumed to be 0 for non-forestland use categories. Litter data has not been estimated in the Fiji national forest inventory. In the future, a stepwise approach is proposed to be applied in MMR to improve the measurement of this carbon pool.
Soils	No	Soil organic carbon data has not been estimated in the Fiji national forest inventory. IPCC 2006 (Ch. 4, Section 4.2.3.1) Tier 1 method states there is no change in forest soil carbon with management or soil carbon change is zero for mineral soils. This has been assumed in Fiji as there are no Peat soils. Additionally, as per the "Tool for estimation of change in soil organic carbon in the implementation of A/R CDM activities", estimation is required for afforestation/reforestation activities in which site disturbance is more than 10 percent of the area (Clean Development Mechanism Executive Board 55, Annex 21). Site disturbance in approaches to afforestation/reforestation in Fiji will result in less than 10 percent of the area due to the forest establishment techniques. Additionally, such activities will focus on degraded lands and it is assumed that planting trees in these areas will cause a net increase in SOC. On this basis SOC is not included in the Reference Scenario. In the future, a stepwise approach is proposed to be applied to improve the estimation of this carbon pool.
Harvested Wood Products	No	Not required by the Methodological Framework and is thus excluded.

Table 7-3: Gases included in the construction of FREL/REL

Greenhouse gases	Selected?	Justification / Explanation
CO_2	Yes	The ER Program shall always account for CO_2 emissions and removals. The emissions are caused by deforestation and forest degradation. The removals are generated from reforestation and forest enhancement.
CH_4	Yes	Methane (CH_4) associated with forest fires are included.
N_2O	Yes	Nitrous oxide (N_2O) sources include fires and fertilizer application. N_2O emissions from forest fires only are included in the FRL. As forest management practices in Fiji do not include application of nitrogen fertilizer, N_2O emissions from fertilizer application are not covered in the FRL.

8 REFERENCE LEVEL

8.1 Reference Period

The Reference Period of Fiji's ER-Program provides an estimate of net historical forest-related emissions/removals for the period 2006 to 2016.

8.2 Forest definition used in the construction of the Reference Level

8.2.1 Forest Definition

For its national REDD+ Policy (MPI, 2011), Fiji has adopted the forest definition provided in FAO (2006):

> "Land spanning more than 0.5 hectares with trees higher than five meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agriculture or urban use. Forest is determined both by the presence of trees and the absence of other predominant land uses. Areas under reforestation that have not yet reached but are expected to reach a canopy cover of 10 percent and a tree height of five meters are included, as are temporarily unstocked areas, resulting from human intervention or natural causes, which are expected to regenerate. Includes: areas with bamboo and palms, provided that height and canopy cover criteria are met; forest roads, fire breaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of scientific, historical, cultural or spiritual interest; windbreaks, shelterbelts and corridors of trees with an area of more than 0.5 hectares and width of more than 20 meters; plantations primarily used for forestry or protected purposes. Excludes tree stands in agricultural production systems, for example in fruit plantations and agroforestry systems. The term also excludes trees in urban parks and gardens".

Fiji's most recent country report to the FRA [FRA-Fiji, 2015] lists four forest classes within its forest area, namely (i) closed forest, (ii) open forest, (iii) pine plantations, and (iv) hardwood plantations.

The 'strata' closed and open forest were not retained as the methods used to map forest areas did not produce reliable estimates of closed and open forest areas or forest area changes between these forest types. Additionally, a preliminary analysis of the NFI 2006 data did not demonstrate any significant difference between classified closed and open forest carbon stocks (see Annex 8-3).

The decision to distinguish between Lowland and Upland Natural Forest was based on findings by Mueller-Dombois & Fosberg [1998], who identified significant changes in structural and floristic characteristics in forests in Fiji below and above approximately 600 m above sea level (a.s.l) Mueller-Dombois & Fosberg [1998] found that above 600 m a.s.l. Fijian forests show characteristics typical for mountain forests systems, whereas forest located below 600 m a.s.l. show characteristics of either tropical rain forests or tropical moist deciduous forests. An analysis of the NFI data supported the findings of this scientific study, whereby a significant difference was found between the carbon stocks estimated on NFI plots above 600m when compared to that below 600m.

In a stepwise approach, a priority of the NFMS MRV (see Chapter 9) is to improve the NFI sample frame to capture carbon stocks and stock changes in open and closed forest within the upland and lowland strata. In parallel to NFI data collection improvements, the semi-automated algorithms for mapping land cover change will be calibrated to enable the capturing of changes in and between open and closed forest classes. These combined improvements will facilitate a move away from a proxy approach to monitoring and reporting degradation to a direct approach using a combination of remote sensing and ground-based data.

Mangrove is not listed under forest in Fiji's FRA country report, partly because the areas of mangrove, defined here as the habitat and entire plant assemblage in which species of the plant family Rhizophoraceae dominate, is located below the high tide water mark (i.e., not considered as land). Moreover, mangrove was not included in the FRL because (i) at least three governmental agencies have regulatory jurisdiction over mangrove and, therefore, the MOF refrained from including mangrove in the FRL to avoid potential conflict between the

agencies involved, (ii) mangrove may be considered under “Coastal Wetlands (Blue Carbon)” in the Low Emission Development Strategy (LEDS), and (iii) to ensure consistency with other reporting requirements (i.e., FRA reporting). Also note that coconut plantations are not considered as forest in Fiji (see FRA-Fiji [2015] and Anonymous [2005]).

8.2.2 Forest stratification

For Fiji’s FRL, the IPCC land-use category ‘Forest Land’ was disaggregated into two sub-categories (‘Natural Forest’ and ’Forest Plantation’). Each sub-category holds two forest strata: the sub-category ‘Natural Forest’ contains the strata ‘Lowland forest’ and ‘Upland forest’ and the sub-category ‘Forest Plantation’ contains the strata ‘Softwood plantation’ and ‘Hardwood plantation’ (Table 8-1).

The boundary between ‘Lowland forest’ and ‘Upland forest’ was drawn at 600 m above sea level (a.s.l.). ‘Lowland forest’ is located below 600 m a.s.l. and ‘Upland forest’ equal or above 600 m a.s.l. This threshold value was set based on findings of Mueller-Dombois & Fosberg (1998), who identified structural and floristic changes below and above the threshold. A preliminary analysis of the NFI 2006 data revealed significant differences in average carbon stocks [t ha^{-1}] between the two strata.

The strata ‘Softwood plantations’ and ‘Hardwood plantations’ within the sub-category ‘Forest Plantations’ cover the areas leased by Fiji Pine Limited (FPL) and Fiji Hardwood Corporation Limited (FHCL), respectively. The sub-category ‘Forest Plantations’ does not include areas outside the plantation lease areas of FPL and FHCL that are planted with e.g., pine or mahogany. These generally small areas (~1 ha) of planted forest are privately owned for personal use such as house renovations. These reforested areas are considered part of the fragmented forest land landscape and included as part of natural forest which is monitored using wall-to-wall analysis of remote sensing data. Remote sensing methods to distinguish these areas and classify them as plantations will be considered in stepwise improvements to activity data generation (see Section 8.3.2) now they are reported under the class ‘Natural Forest’. Figure 8-1 displays a land-cover map of Fiji (2006), showing areas of Lowland Natural Forest, Upland Natural Forest, Hardwood Plantations, Softwood Plantations and Non-Forest.

The stratification of forests applied differs from the one given in Fiji’s Country Report to FAO’s Global Forest Resources Assessment (FRA) (FRA-Fiji, 2015). The stratification provided in the FRA is based on forest cover maps produced by the Geoscience Division of the Pacific Community (SPC-GSD). To differentiate between closed and open natural forest unsupervised classification techniques were used. However, no rigorous accuracy assessment has been conducted on these historical maps, and their quality remains unknown.

Therefore, a new activity data set was generated for the FRL using semi-automated classification algorithms to generate map predictions upon which an accuracy assessment was conducted using a stratified random sampling approach to generate error adjusted areas of deforestation and afforestation/reforestation (see Section 8.3.2 and Annex 8-1). This wall-to-wall annual times-series dataset has been produced from Landsat imagery and currently enables the distinction between upland and lowland forests. The NFMS improvement plan (Chapter 9) includes activities for improvement of MRV capabilities to eventually report forest degradation from remote sensing by mapping open and closed forest classes. The NFMS improvement plan also includes improvements to the ground data collection through the design and implementation of a repeatable NFI which will enable reporting of more forest classes, including open and closed, in a stepwise approach.

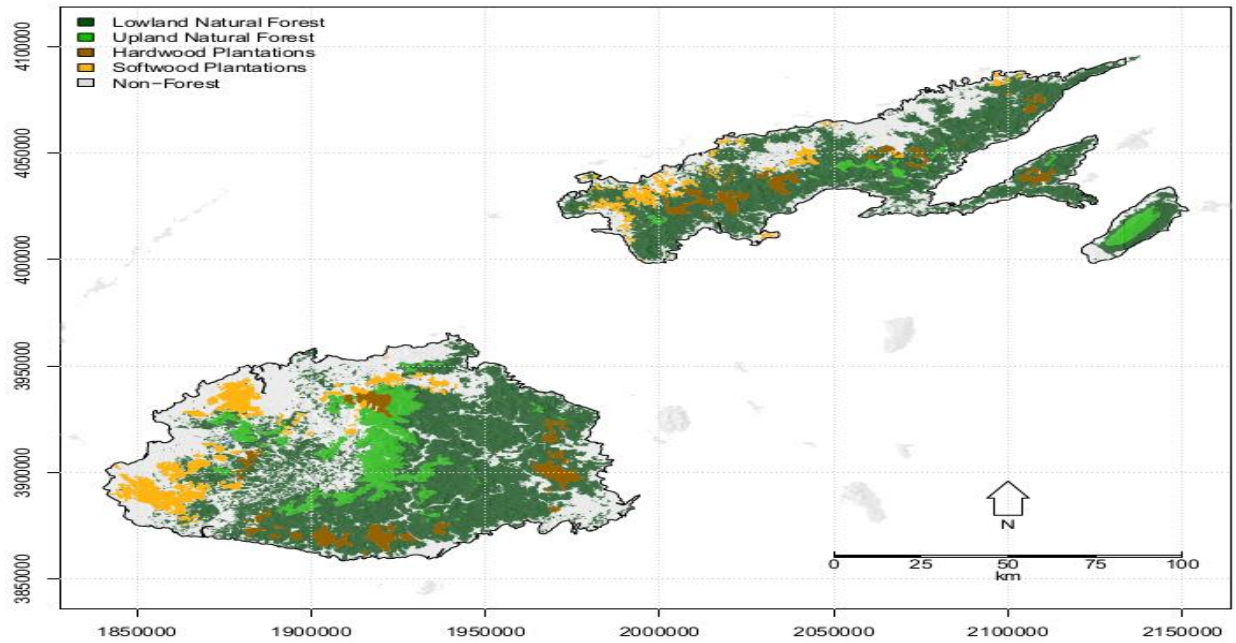


Figure 8-1: Land-cover map of Fiji (2006), showing areas of Lowland Natural Forest, Upland Natural Forest, Hardwood Plantations, Softwood Plantations and Non-Forest. Coordinate Reference System: Fiji 1986 Map Grid (EPSG code: 3460).

The stratification used for the FRL is described in Table 8-1.

Table 8-1: Stratification of land use types used in calculations for the FRL

IPCC Category	Sub-Category	Stratum	Description
Forest Land	Natural Forest	Lowland forest	The stratum 'Lowland forest' includes all areas classified as forest that are located <600 m a.s.l. It includes primary (native) forest, human modified forests as well as small areas planted with native or introduced tree species which don't require concessions and cannot be distinguished from medium resolution imagery. It excludes forest in plantation lease areas.
		Upland forest	The stratum 'Upland forest' includes all areas classified as forest that are located ≥600 m a.s.l. It includes primary (native) forest, human modified forests as well as small areas planted with native or introduced tree species which don't require concessions and cannot be distinguished from medium resolution imagery. It excludes forest in plantation lease areas.
	Forest Plantation	Softwood plantation	The stratum `Softwood plantation' includes all areas leased by Fiji Pine Limited (FPL). Areas not currently stocked with trees (crown cover percent is zero) but which are situated within FPL's lease area are classified as forest.
		Hardwood plantation	The stratum `Hardwood plantation' includes all areas leased by Fiji Hardwood Corporation Limited (FHCL). Areas not currently stocked with trees (crown cover percent is zero) but which are situated within FHCL's lease area are classified as forest.

IPCC Category	Sub-Category	Stratum	Description
Non-Forest Land		Non-forest	The land-use category `Non-Forest Land' includes all areas not classified as `Forest Land'. Note that `Non-Forest Land' is not an IPCC land-use category. For the FRL, the land-use category `Non-Forest Land' includes all IPCC land-use categories, i.e., `Grassland', `Cropland', `Wetlands', `Settlements' and `Other Land', except the category `Forest Land'.

8.3 Average annual historical emissions over the Reference Period

8.3.1 Description of method used for calculating the average annual historical emissions over the Reference Period

The method for calculating the average annual historical emissions over the Reference Period applies, in general, the IPCC Good Practice Guidelines generic equation:

$$Emissions = AD \times EF \quad (8.1)$$

where the *AD* is the activity data and *EF* is the emission factor.

For each source and sink included in the FRL, average annual net emissions are reported. Net emissions are computed as the difference between gross emissions and gross removals for a source/sink. The FRL is computed as a historical average and is estimated by taking the sum of the average annual net emissions over all sources and sinks considered. An overview of the sources and sinks considered in Fiji's FRL is presented in Figure 8-2.

A brief description on the method adopted for each REDD+ activity included in the FRL is provided below. Detailed step by step calculations can be found in Annex 8-1. More detail can be found in Mundhenk, Neupane and Köhl, 2018.

The FRL estimates are generated by running a Monte Carlo simulation, where values are sampled at random from the input probability distributions for each variable. The outputs from Equation 1 become the inputs to the Monte Carlo simulation which runs through iterations until it lands on the most likely estimate with a confidence interval. Each set of samples is called an iteration, and the resulting outcome from that sample is recorded. The Monte Carlo simulation was run 40,000 times, and the result is a probability distribution of possible outcomes for the FRL. In this way, the Monte Carlo simulation provides a much more comprehensive view of the emissions estimate by estimating what the ERs will be with a confidence interval. As a result of the Monte Carlo simulations the 'final estimates' can be slightly different to the simple AD x EF multiplication presented in Equation 8.1.This should be noted when attempting to replicate the numbers as they could marginally vary from the simple linear multiplication of variables as the confidence interval around each individual variable influences the final result (University of Hamburg, 2018).

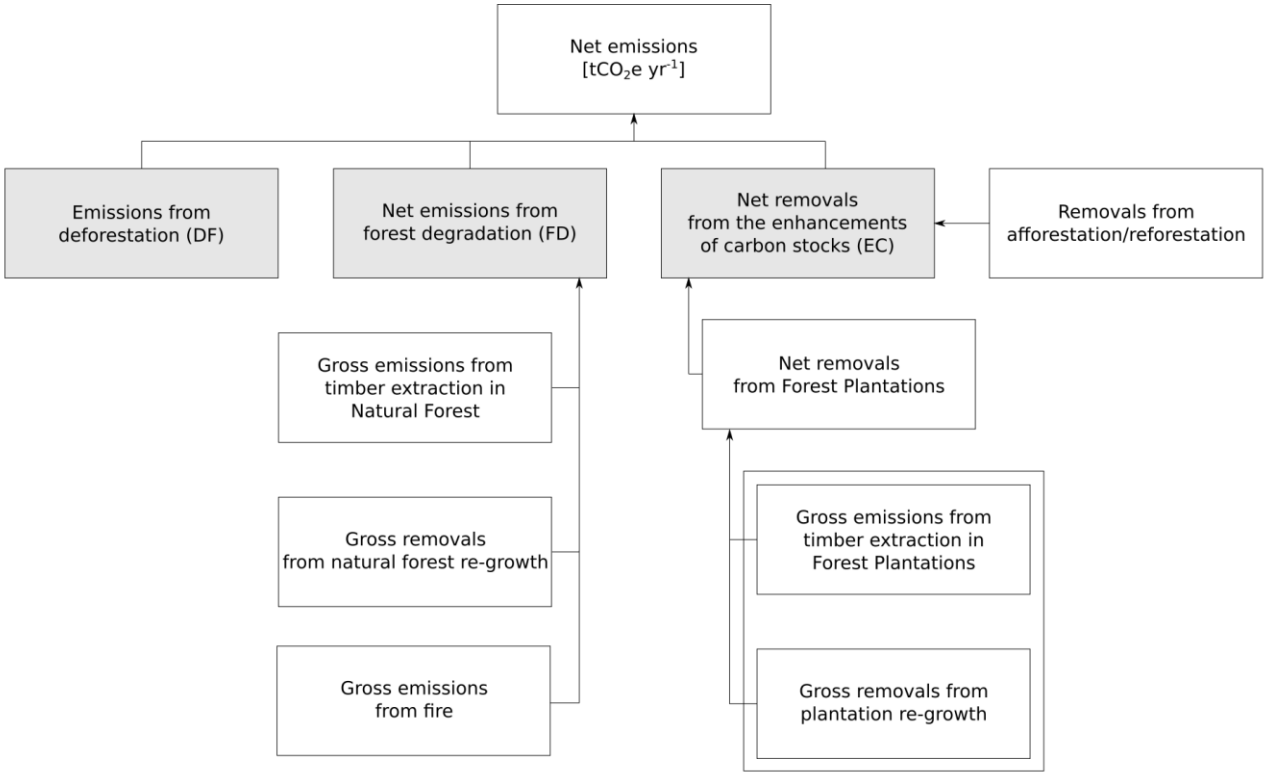


Figure 8-2: Overview of the sources and sinks considered in Fiji's Forest Reference Level (FRL), including the sub-sources and sinks for forest degradation and enhancement of forest carbon stocks

The average annual net emissions removals during the reference period are estimated as outlined in Table 8-2.

Table 8-2: Average annual net removal during reference period

Forest Reference Emission Level	**Emission / Removal** ($tCO_2e\ yr^{-1}$)	**Lower Confidence Interval** ($tCO_2e\ yr^{-1}$)	**Upper Confidence Interval** ($tCO_2e\ yr^{-1}$)
Deforestation	2,696,831	2,143,830	3,373,850
Forest Degradation	310,442	321,925	467,501
Enhancement of Carbon Stocks	-1,370,469	-960,855	-1,791,358
Net FRL	**1,636,804**	**953,458**	**2,444,030**

8.3.2 Activity Data used in emissions and removals estimates

Activity Data from Remote Sensing

Fiji's MOF, supported by CSIRO's Remote Sensing Image Integration Group, adopted a multi-temporal wall-to-wall semi-automated approach to generate IPCC Approach 3 activity data covering the islands of Viti Levu, Vanua Levu and Taveuni for a period of at least 10 years between 2006 - 2016[25].

The technique adopted is consistent with that used by the CSIRO team in Australia, Indonesia and Kenya. More detail on the processing steps is provided in Annex 8-2. Fiji selected this technique because of its operational status, demonstration of successful application in large mountainous areas where cloud cover is frequent (e.g. Indonesia) and the availability of expertise to support training and operational processing to enable the local Fijian team to replicate the process themselves for future MRV cycles.

Some features of the technique used are:

- Assembly of multi-year data series (e.g. annual time series)
- Classification of each image date using supervised classification methods
- Multi-temporal processing of the full time series of classifications in a joint temporal model; this has the effect of inferring classification for areas of missing data. The result, given appropriate inputs to the model, is to improve the accuracy and particularly to reduce error on mapped change.
- Accuracy assessment and resulting area adjustment to produce unbiased estimates of the LULC changes, and some measure of uncertainty associated with each of the estimates.

The technique overcame the major limitation identified with Fiji's previously used activity data set which relied on mapping change (i.e. deforestation, reforestation) from two or more dates of imagery using a 'hard' classification scheme (i.e. manual). When differencing 'hard classifications" 'errors add up'; that is, errors of omission or commission at any date are likely to introduce false areas of change. Since areas of change are usually a small proportion of the forest area, the result is (typically) large error rates on derived change products. This was the main reason Fiji opted to make the change to semi-automated processing. The semi-automated processing was also preferred as it can provide a more consistent interpretation of images through time when compared to manual digitisation.

The process applied to generate the new activity data set results in processing the full times series jointly; errors are resolved progressively using quality assurance (QA) checks using inferences from the sequence of classification probabilities. As a simple example, an agricultural land pixel may appear spectrally similar to forest at one date because of its particular crop at that time and be classified (with a high probability but incorrectly) as forest on that date. If it is (correctly) classified as non-forest in the surrounding years, it is inferred from knowledge of landcover transitions that the forest label is incorrect.

The joint time series processing uses mathematical models to resolve time series forest probabilities in this way. Figures 8-3 illustrates the process. For a formal description see Caccetta et al (2012). For ongoing monitoring using Landsat, the approach can be immediately applied to produce updates.

[25] Analysis was extended to 1 year prior (i.e. 2015) and 1 year post the reference period.

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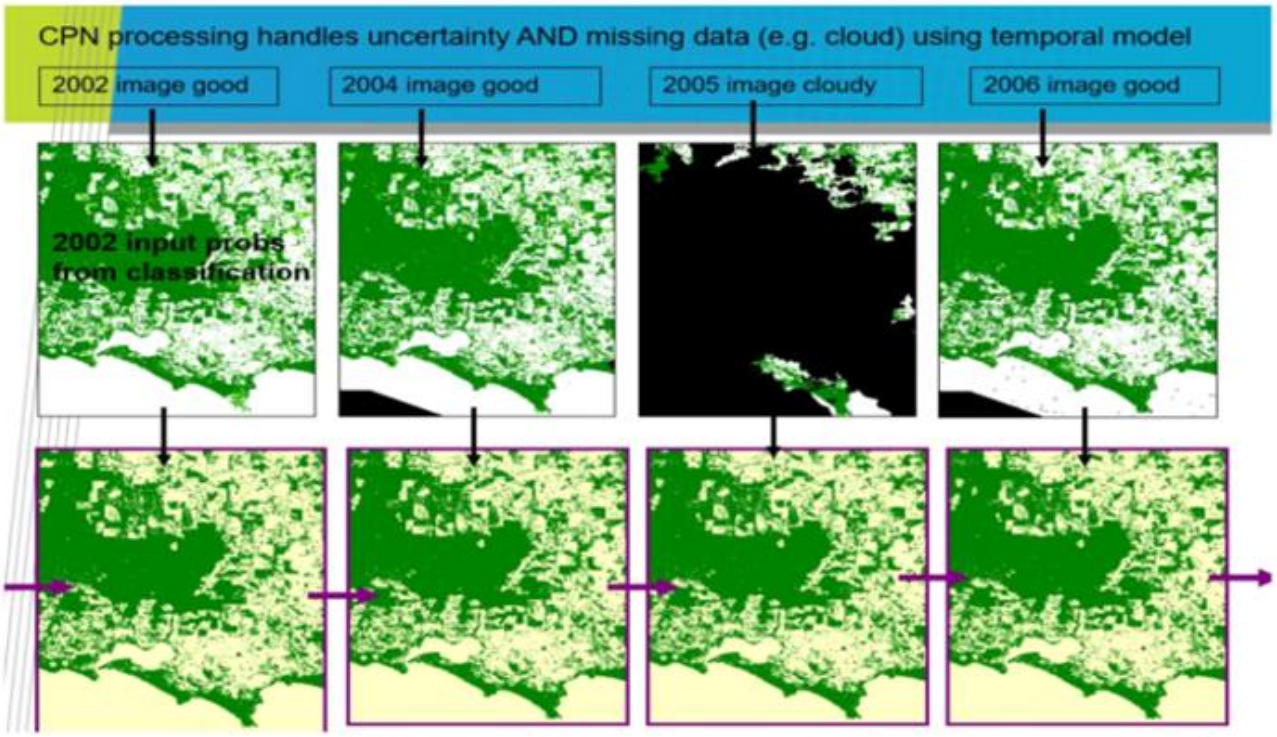

Example of input and output to multi-temporal forest classification. The top row shows the individual year classifications from 4 time periods (Forest in dark green; light green colours in top row indicate uncertainty in forest classifications). The 2005 map has large areas of missing data due to cloud. The bottom row shows the output forest maps after multi-temporal processing. Source: CSIRO.

Figure 8-3: Process for Activity Data Remote Sensing

Figure 8-4 below shows a high-level flow chart of the steps in the approach. QA checks are conducted at all stages to ensure data and results are as accurate as possible. Failure of QA triggers a repeat of the processing step. The final stage 'attribution' is conducted in GIS to attach labels or to remove particular errors which cannot be resolved by spectral signatures.

Attribution is conducted to address potential errors from misclassification of land use, for example classifying forest loss as deforestation rather than temporary loss from harvest or loss due to natural disturbance. GIS layers and local knowledge were used to attribute change. For example, change data sets for deforestation and reforestation in Natural Forest areas were generated by masking out areas of mangroves, softwood and hardwood plantations, and areas subject to harvest in Natural Forest **to ensure that there is no double counting of emissions within these areas which adopt proxy methods to generate emissions reduction from Forest Degradation or Enhancement of Carbon Stock activities.**

The remaining area was then stratified into Upland and Lowland Forest Classes using the digital elevation model to distinguish change above (Upland) and below (Lowland) 600m a.s.l. to align with available emission factors in Fiji (see section 8.3.3).

The archived data for attribution consists of a set of GIS vectors and rules applied to these vectors. This set of data is a 'library' which can be improved over time and applied to new images or products as appropriate.

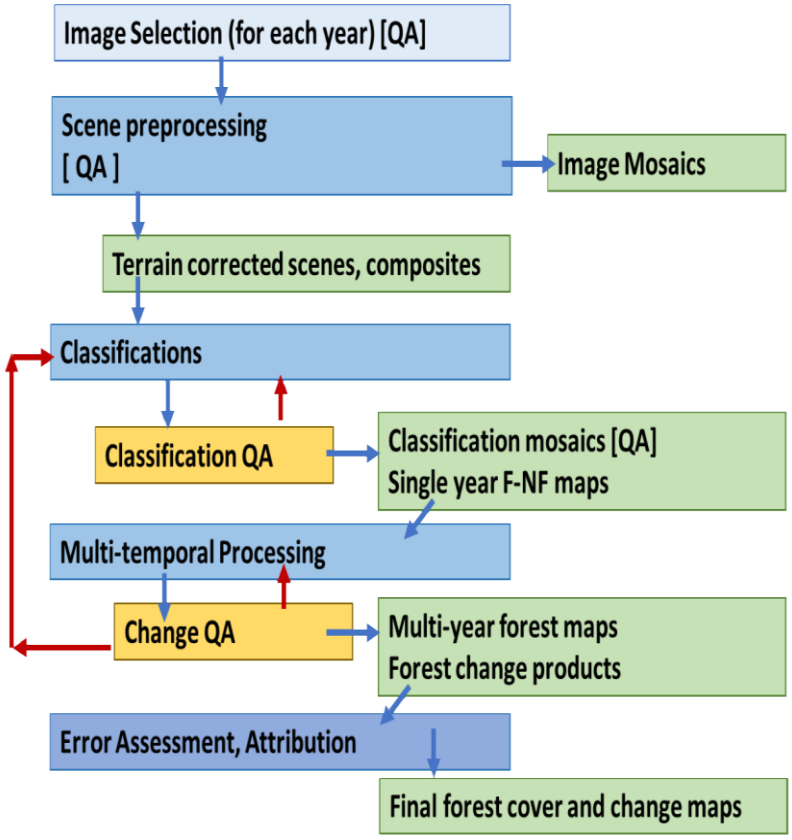

Figure 8-4: Schematic diagram of the multitemporal classification workflow.
Note: Outputs *are shown in green boxes. The* ***red arrows*** *indicate iterative refinement processes following assessment of map and change products.*

Attribution is relevant for multiple reasons. The first is to label extent and change data within specified areas differently for accounting purposes. Vector boundaries and rules need to be defined and recorded. Another reason for attribution is persistent error in classification due to spectral overlap and ground cover or bad data. The bad data are mostly caused by 'errors' in the terrain correction; (1) due to steep terrain (peaks, ridgetops) where slight misregistration causes small bright and dark faults; and (2) areas where the SRTM DEM was missing or missing and replaced with coarse 90m data. These areas are small and in the same locations each year – the recommended approach is to build a GIS library of such areas and re-label to the known cover (e.g. in central Taveuni, these ridge effects are forest). Spectral overlap causing false change can occur in special lands – e.g. grassy wetlands where water and vegetation changes give false forest and change signals.

On completion of the classification of the remote sensing images, an accuracy assessment was conducted following methods outlined in Olosson et al. (2014). This process relied on the comparison of predictions from the image classification and observations from a sample of reference data to assess errors of omission and commission in the predicted data set. The accuracy assessment process was fully independent of the generation of the LULC change maps being verified. A more detailed description of Accuracy Assessment process is included in Annex 8-2.

Error adjusted areas of annual deforestation and afforestation/reforestation during the reference period are listed in Table 8-3 and Table 8-4.

Table 8-3: Average Area of Deforestation during the Reference Period

Average Annual Deforestation	Estimate	Lower Confidence Interval	Upper Confidence Interval
	[ha]	[ha]	[ha]
Lowland	8,332	5,531	8,437
Upland	2,681	1,627	2,889

Table 8-4: Average Area of Afforestation/Reforestation during the Reference Period

Average Annual A/R	Estimate	Lower Confidence Interval	Upper Confidence Interval
	[ha]	[ha]	[ha]
	6,180	4,415	8,124

Use of proxy methods for activity data

Activity data for the estimation of emissions and removals from harvested areas are from commercial logging statistics; both in natural forests and plantations. Information related to timber extraction from native forest concessions is collected by the MOF, this includes area harvested and volumes extracted. Plantation management companies Fiji Pine Limited and Fiji Hardwood Corporation also submit areas harvested, volume extracted, and areas replanted, to the Ministry in accordance with standard operating procedures. The Ministry also has field crew who regularly conduct training in the data collection methods and QA/QC checks on the submitted data.

Harvest volumes are self-reported by Fiji Pine and Fiji Hardwood Limited and natural forest logging contractors to the MOF. The volume data provided is a census of actual timber volume extracted, therefore there is no sampling error. The systematic measurement error of logs (i.e. diameters, lengths and number of logs) is likely to be small as standard operating procedures are used for these measurements. There may be random errors related to unreported logs, however QA/QC checks by MOF staff are in place and therefore the incidence of unreported logs is considered minimal.

Digital maps of harvested areas from the logging plans provided by the loggers within natural and planation forests were used to determine the area logged and the area of re-growth/replanting after logging. This approach has some inherent limitations as it does not account for failures in establishment of plantations and can therefore lead to an over estimation of carbon stock regrowth following replanting or natural regeneration in natural forest areas after harvest.

A QA/QC check of the harvested and replanted areas conducted by the MOF found that the self-reported data on area harvested and area replanted was not accurate and some corrections were made based on random sampling (both in the field and from google earth data) of a proportion of logged and replanted areas. Additionally, checks of the data against the improved dense time series of change data indicate some remaining inconsistencies/uncertainty. This source of uncertainty is considered relevant to the emissions reductions estimates related to Forest Degradation and Enhancement of Carbon Stocks (Plantations) activities. Therefore, in the Mote Carlo simulation the uncertainty related to harvested areas is categorized as medium and that related to replanted areas is classified as large (see Chapter 12, Annex 12.1 for more detail).

The activity data used in the proxy approach to estimate emissions from Forest Degradation and Enhancement of Carbon Stocks (Plantations) are listed in Table 8.4 – 8.7.

Table 8-5: Annual volume extracted from logging operations in natural and plantation forests

Year	Natural Forest Volumes Extracted (m^3)	Softwood Plantation Volumes Extacted (m^3)	Hardwood Plantation Volumes Extracted (m^3)
2006	79,480	282,102	37,216
2007	45,122	294,685	5,0092
2008	81,706	265,046	79,869
2009	59,614	249,769	63,758
2010	49,814	256,040	92,283
2011	36,499	306,684	91,025
2012	30,517	158,214	53,737
2013	26,947	668,833	63,251
2014	46,431	393,519	58,542
2015	51,091	544,902	54,568
2016	50,825	259,301	39,854

Table 8-6:Annual area harvested during the Reference Period

Year	Native Forest Area Harvested (ha)	Softwood Plantation Area Harvested (ha)	Hardwood Plantation Area Harvested (ha)
2006	3,513	1,082	212
2007	2,546	1,130	278
2008	3,259	1,016	736
2009	1,165	958	165
2010	1,641	982	432
2011	905	1,176	132
2012	796	607	110
2013	1,354	2,564	310
2014	1,428	2,089	394
2015	1,738	1,509	375
2016	1,438	994	172

Table 8-7: Annual area of plantation planted

Year	Softwood Plantation Area Planted (ha)	Hardwood Plantation Area Planted (ha)
2006	1,478	305
2007	3	305
2008	14	305
2009	17	305
2010	177	305
2011	273	228

Year	Softwood Plantation Area Planted (ha)	Hardwood Plantation Area Planted (ha)
2012	871	1000
2013	13	0
2014	202	0
2015	1,032	0
2016	0.00	300

More detailed information on the methods used for estimating emissions and removals using this activity data can be found in Annex 8-1.

In a step-wise approach, the MOF is working on multiple ways to improve the data quality of the area harvested and area of regrowth, including improvements to the data collection methods for self-reported data and ways to integrate the use of the wall-to-wall data in tracking harvest and regrowth activities. A stepwise improvement plan for the National Forest Monitoring System can be found in Chapter 9.

8.3.3 Emissions Factors used in emissions and removals estimates

Emissions factors have been developed using national data collected from national inventories in combination with some sub-national and project level studies. Carbon stocks of above- and below ground biomass of natural forests were generated using two primary datasets - the National Forest Inventory and the Permanent Sample Plot Inventory. Data from these sources enabled the generation of carbon stock estimates for Upland and Lowland forest classes with the application of allometric equation of Chave et al. [2014] parameterized with Fiji data to generate Fiji specific allometric equations. A detailed description of these national data sets and how they have been used in the NFMS can be found in Annex 8-3.

Post deforestation and pre-afforestation carbon stocks as well as growth rates were taken from multiple project level studies and expert judgement. The limitations of these data sources are acknowledged by attributing high level of uncertainty to the data in the Monte Carlo simulation.

All factors, their source and uncertainty that are used in the National Forest Monitoring System are summarised in Table 8-9 and Table 8-10.

Table 8-8: Default variables and values applied in the Forest Reference Emission Level

Default variable	Description	Value	Units	Source	Uncertainty
η_{CC}	ratio of the molecular weights of CO_2 and C	$^{44}/_{12}$	$tCO_2\ (C)^{-1}$	Default	Small source, not relevant; not included in the quantification of uncertainty.
$\boldsymbol{T} = \{\mathbf{2006}, \mathbf{2007}, \ldots, \boldsymbol{t}, \ldots, \mathbf{2016}\}$	length of the FRL Reference Period	11	years	ER Program Design	Not relevant; not included in the quantification of uncertainty.
η_{CF}	Conversion factor for biomass to carbon	0.47	$C\ (tB)^{-1}$	IPCC,2006, Vol. 4, Chap. 4, Tab. 4.3	Small source, not relevant; not included in the quantification of uncertainty.

Default variable	Description	Value	Units	Source	Uncertainty
R_{wl}	Root-to-shoot ratio for tropical rainforest	0.37	dimensionless	IPCC, 2006, Vol. 4; Chap. 4; Tab. 4.4	Sampled from a Triangular distribution with lower bound $a = R_{wl} - R_{wl} \times 0.25$ upper bound $b = R_{wl} + R_{wl} \times 0.25$ and mode $c = R_{wl}$
R_{dll}	Root-to-shoot ratio for tropical moist deciduous forest < 125 tB ha^{-1}	0.20	dimensionless	IPCC, 2006, Vol. 4; Chap. 4; Tab. 4.4	Sampled from a Triangular distribution with lower bound a = 0.09, upper bound b = 0.25, mode c = 0.20; a, b and c were taken from IPCC [2006, Vol. 4, Chap. 4, Tab. 4.4].
R_{dlh}	Root-to-shoot ratio for tropical moist deciduous forest > 125 tB ha^{-1}	0.24	dimensionless	IPCC, 2006, Vol. 4; Chap. 4; Tab. 4.4	Sampled from a Triangular distribution with lower bound a = 0.22, upper bound b = 0.33, mode c = 0.24; a, b and c were taken from IPCC [2006, Vol. 4, Chap. 4, Tab. 4.4].
R_u	shoot ratio for tropical mountain systems	0.27	dimensionless	IPCC, 2006, Vol. 4; Chap. 4; Tab. 4.4	Sampled from a Triangular distribution with lower bound a = 0.269, upper bound b = 0.0.28, mode c = 0.27; a, b and c were taken from IPCC [2006, Vol. 4, Chap. 4, Tab. 4.4].
$BCEF_{AR,I}$	biomass conversion and expansion factor for volume increments in humid tropical natural forests	1.1	tB $(m^3)^{-1}$	IPCC [2006, Vol. 4, Chap.4, Tab. 4.5]; (growing stock level 21-40 m^3 ha^{-1})	Sampled from a triangular distribution with lower bound $a = BCEF_{AR,I} - BCEF_{AR,I} \times 0.25$ upper bound $a = BCEF_{AR,I} + BCEF_{AR,I} \times 0.25$and mode $c = BCEF_{AR,I}$

Default variable	Description	Value	Units	Source	Uncertainty
$BCEF_{HW,R}$	biomass conversion and expansion factor for logging;	1.05	tB $(m^3)^{-1}$	IPCC [2006, Vol. 4, Chap.4, Tab. 4.5]; (growing stock level >200 m^3 ha^{-1})	Sampled from a triangular distribution with lower bound $a = BCEF_{HW,R} - BCEF_{HW,R} \times 0.25$ upper bound $a = BCEF_{HW,R} + BCEF_{HW,R} \times 0.25$, and mode $c = BCEF_{HW,R}$
$BCEF_{HW,I}$	biomass conversion and expansion factor for increment taken from	1.1	tB. $(m^3)^{-1}$	IPCC, 2006, Vol.4, Chap. 4, Tab. 4.5; growing stock level 21-40 m^3 ha^{-1})	Sampled from a triangular distribution with lower bound $a = BCEF_{HW,I} - BCEF_{HW,I} \times 0.25$ upper bound $b = BCEF_{HW,I} + BCEF_{HW,I} \times 0.25$, mode $c = BCEF_{HW,I}$
$COMF_i$	Combustion factor – proportion of pre-fire fuel biomass consumed)	0.46	dimensionless	(IPCC 2006 Vol. 2, Table 2.6)	Sampled from a Triangular distribution with lower bound a and b were 50% and 150% of the mode c.
$G_{g,CO2}$		1580	g CO_2 kg^{-1} Dry matter burnt	IPCC 2006 Vol. 4, chapter 2, Table 2.5)	Sampled from a normal distribution N(μ= $G_{g,CO2;}$ σ^2=902; see Table 2.5 in IPCC, 2006, Vol 4, Chap. 2, Tropical Forest).
$G_{g,N2O}$		0.2	g N_2O kg^{-1} Dry matter burnt	(IPCC 2006 Vol. 4, chapter 2, Table 2.5)	Sampled from a Triangular distribution with lower bound a and b were 50% and 150% of the mode c
$G_{g,CH4}$		6.8	g CH_4 kg^{-1} Dry matter burnt	IPCC 2006 Vol. 4, chapter 2, Table 2.5)	Sampled from a Triangular distribution with lower bound a and b were 50% and 150% of the mode c

Table 8-9: Variables with Fiji specific values

Variables with Fiji specific values	Description	Value	Units	Source	Uncertainty
C_{AFTER}	C stock in biomass due to the conversion of Natural Forest to grassland	17.11	tC ha^{-1}	Rounds [2013]	Lower CI[8.31] Upper CI[25.96]
$C_{BEFORE,Lowland}$	Estimated C stocks stored in AGB and BGB in Lowland Natural Forest	87.86	tC ha^{-1}	Appendix A2 - Fiji FRL Report, 2018	Lower CI[84.25] Upper CI[93.21]
$C_{BEFORE,Upland}$	Estimated C stocks stored in AGB and BGB in Upland Natural Forest	71.57	tC ha^{-1}	Appendix A2 - Fiji FRL Report, 2018	Lower CI[66.45] Upper CI[78.58]
EM_{FELL}	carbon loss from the extracted logs, including logging residues	0.69	tC $(m^3)^{-1}$	Haas [2015]	Assessed in uncertainty emission factor TEF.
EM_{DAM}	damage to the remaining stand (all killed [snapped and up-rooted] trees 10 cm DBH), crown damage	0.15	tC $(m^3)^{-1}$	Haas [2015]	Assessed in uncertainty emission factor TEF.
EM_{INFR}	infrastructure development (all trees _ 10 cm DBH on logging roads, skid trails and log landings)	0.21	tC $(m^3)^{-1}$	Haas [2015]	Assessed in uncertainty emission factor TEF.
δ_{tm}	the length of time interval available for growth on areas conventionally logged in year *t*	{10,9,…, δ_{tm},…1 }	Yrs.	Based on Fiji's Reference Period	None
$MAIV_{AR}$	mean annual volume increment for afforestation/reforestation	3.71	m^3 ha^{-1} yr^{-1}	Derived from data provided from Fiji Hardwood Corporation Limited	Sampled from a Triangular distribution with lower bound $a = \mathrm{MAIV_{AR}} - \mathrm{MAIV_{AR}} \times 0.5$ upper bound $b = \mathrm{MAIV_{AR}} + \mathrm{MAIV_{AR}} \times 0.5$ and mode $c = \mathrm{MAIV_{AR}}$

Variables with Fiji specific values	Description	Value	Units	Source	Uncertainty
$MAIC_{FD}$	mean annual C increment after logging (above ground and belowground)	0.99	tC ha^{-1} yr^{-1}	Personal Communication Based on measurements from projects within Fiji	Triangular distribution with lower bound $a = \mathrm{MAIC_{FD}} - \mathrm{MAIC_{FD}} \times 0.5$ upper bound $a = \mathrm{MAIC_{FD}} + \mathrm{MAIB_{SW}} \times 0.5$, mode $c = \mathrm{MAIC_{FD}}$.
λ_{Pine}	Softwood plantation recovery rate following harvest	0.76	Ratio - dimensionless	Waterloo [1994]	Drawn from a Normal distribution with $\mu = \lambda_{\mathrm{Pine}}$ and $\sigma^2 = [\lambda_{\mathrm{Pine}} \times 0.1]^2$
ρ_{Pine}	Pine tree wood density	0.47	g cm^{-1}	Cown [1981]	Drawn from a Normal distribution with $\mu = \rho_{\mathrm{Pine}}$ and $\sigma^2 = 0.0031$
$MAIB_{SW}$	mean annual increment of above and belowground biomass in softwood plantations	10	tB ha^{-1} yr^{-1}	Waterloo [1994]	Triangular distribution with lower bound $a = \mathrm{MAIB_{SW}} - \mathrm{MAIB_{SW}} \times 0.25$ upper bound $a = \mathrm{MAIB_{SW}} + \mathrm{MAIB_{SW}} \times 0.25$, mode $c = \mathrm{MAIB_{SW}}$.
CC_{SW}	length of the harvest cycle in softwood plantations	20	Yrs.	Personal communication Fiji Pine Limited (FPL) indicated that most pine plantations are harvested around 20 years ranging between 15 to 25 years.	Sampled from a Triangular distribution with lower bound $a = CC_{SW} - 5$, upper bound $a = CC_{SW} + 5$, mode $c = CC_{SW}$
$\overline{MAIV}_{HW}$	Average mean annual increment in Fiji hardwood plantations	5.85	m^3 ha^{-1} yr^{-1}	derived from data provided from Fiji Hardwood Corporation Limited	Sampled from a Triangular distribution with lower bound $a = \overline{\mathrm{MAIV}}_{\mathrm{HW}} - \overline{\mathrm{MAIV}}_{\mathrm{HW}} \times 0.25$, upper bound $b = \overline{\mathrm{MAIV}}_{\mathrm{HW}} - \overline{\mathrm{MAIV}}_{\mathrm{HW}} \times 0.25$, mode $c = \overline{\mathrm{MAIV}}_{\mathrm{HW}}$

More details of the selection justification and calculation methods for estimating the FRL are presented in Annex 8-1. Uncertainty methods and a description of how this is applied to these factors is presented in Section 12.

The MOF has identified a number of priority improvement areas related to improving Nationally relevant emissions factors. This includes improvements to the NFI design with the aim of determining Open and Closed Forest carbon stocks within the upland and lowland forest classifications to be conducted in conjunction with the step-wise approach to incorporating direct measurement and estimation of forest degradation in Fiji's

National Forest Monitoring System (see improvement plan outlined in Section 9). Should this be completed, utilising this forest classification to improve the proxy methods applied to estimate emissions related to forest degradation will be investigated as part of the continuous improvement process.

8.3.4 Estimating emissions from Deforestation

Deforestation is defined as the conversion from land in the land-use sub-category Natural Forest, to land in the land-use sub-category Non-Forest. As Natural Forest is defined by a minimum crown-cover percent and a minimum area, deforestation occurs if the crown-cover percent drops from equal or above to below 10%, the area of a patch of Natural Forest becomes less than 0.5 ha in size, or both. Emissions from deforestation were estimated on the basis of Equation 8.1. The activity data (*AD*) are data on the average annual area of forest loss [ha yr^{-1}] over the reference period (Table 2), and the emission factor (*EF*) is the amount of CO_2 released to the atmosphere if one hectare of forest is lost [$tCO_2e\ ha^{-1}$].

Average annual emissions from deforestation were estimated separately for the two strata *Lowland Natural Forest* and *Upland Natural Forest*. The two estimates were subsequently aggregated to provide a single estimate of the average annual emissions from deforestation. The carbon stock change for deforestation was estimated as the difference between the estimated average carbon stock in Low- or Upland Natural Forest (see Annex 8-3) and the estimated carbon stock in grassland (Rounds, 2013).

Estimation of annual emissions from deforestation is outlined in **Table 8-10**.

Table 8-10: Annual Emission from Deforestation

Emissions from Deforestation	**Emission** ($tCO_2e\ yr^{-1}$)	**Lower Confidence Interval** ($tCO_2e\ yr^{-1}$)	**Upper Confidence Interval** ($tCO_2e\ yr^{-1}$)
Lowland	2,161,364	1,667,836	2,763,108
Upland	535,466	371,765	739,937
Total	**2,696,831**	**2,143,830**	**3,373,850**

8.3.5 Estimating emissions from Forest Degradation

The net source 'forest degradation' entails the sub-source 'emissions from logging and the sub-sink 'removals from forest growth' within Natural Forest areas (see Figure 8-5). Emissions from fire in softwood plantations are also included in estimates of forest degradation.

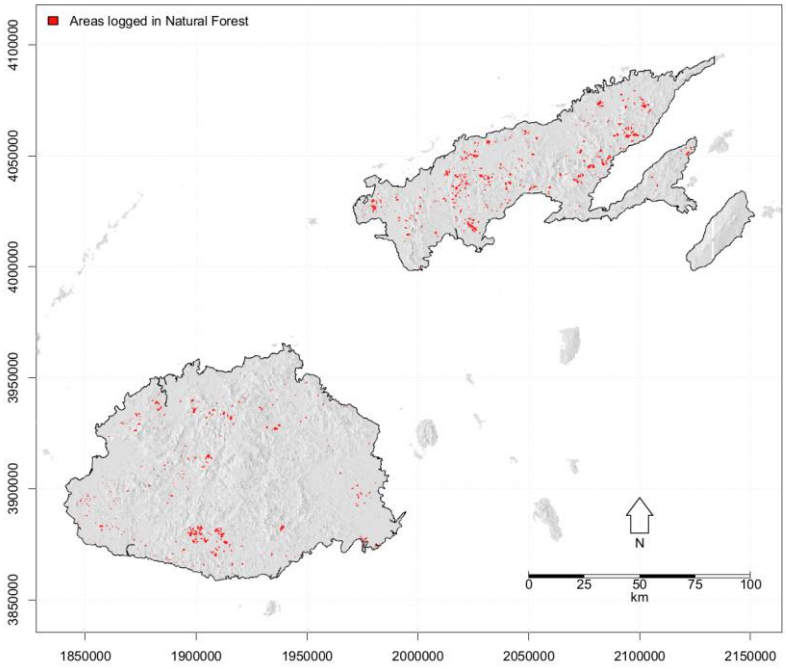

Figure 8-5: Areas logged in Natural Forest between 2006 and 2016 (total area: 19783 ha). Coordinate Reference System: Fiji 1986 Map Grid (EPSG code: 3460

Emissions from logging were estimated using a proxy method to reflect contribution of logging to unsustainable management of Natural Forest (i.e., forest degradation). Gross emissions from forest degradation were estimated using IPCC's [2006] generic equation (Equation (8.1), where the volumes served as AD and a nationally derived TEF value served as the basis for the EF.

Areas of harvested natural forest are demarcated by concession boundaries. These are masked out from the wall-to-wall activity data used to monitor changes in natural forest to report deforestation emission and Carbon Stock Enhancement (AR). There is no double counting of changes in natural forest subject to harvesting using this proxy approach.

In this approach records of volumes extracted during logging operations are converted to total C loss using a so-called "Total Emissions Factor" (TEF). Carbon losses due to logging include the loss from the felled tree (AGB and BGB), logging residues of the felled tree, logging damages to the remaining stand (AGB and BGB), and losses due to the establishment of logging infrastructure (e.g., skid trails, logging roads and log-landings). For emissions from forest degradation, committed emissions were assumed. That is, the carbon loss associated with timber extraction and infrastructure development is emitted directly to the atmosphere and is not stored in HWPs.

Removals from forest growth were also estimated on areas in logged Natural Forest where carbon stock gains were assumed to not fully recover until the next harvest. The estimate of removals requires knowledge of the year of planting to estimate the length of time available for regrowth on the conventionally logged areas as well the mean annual increment following logging.

Estimates of the emissions from Logging in Natural Forest is outlined in Table 8-12.

Table 8-11: Emission from Logging in Natural Forests

Emissions/Removals from Forest Degradation (Logging)	Estimate ($tCO_2e\ yr^{-1}$)	Lower Confidence Interval ($tCO_2e\ yr^{-1}$)	Upper Confidence Interval ($tCO_2e\ yr^{-1}$)
Emissions	195,316	167,487	223,343
Removals	-42,362	-57,222	-27,794
Net Total	**152,955**	**121,701**	**184,309**

Based on the available data, fire is known to have a significant impact on softwood plantation areas. The proximity to grassland areas combined with the harvest cycle make this forest type particularly vulnerable. Area burnt data provided by Fiji Pine between 2015 – 2018 was used to estimate an annual average area burnt to include emissions from fire in softwood plantation in the FRL. Checks against the MODIS hotspots for the same period were made to confirm the data was reliable.

Table 8-12: Burnt areas within Pine Plantations provided by Fiji Pine Limited

Year	Area Burnt (ha)	Average age of pine plantation burnt (Years)
2015	1447	17.5
2016	830	16.3
2017	2709	10.2
2018	729	9.8

IPCC GPG 2006 Tier 1 default methods and factors in combination with National spatial data was used to provide an initial estimate of emissions from fire in softwood plantations (See Annex 8-4). The aboveground biomass available for burning was calculated based on the age of the plantation at the time of the burn (provided by Fiji Pine) multiplied by the average carbon increment value provided by Fiji Pine and used in the estimation of removals from regrowth in the FRL calculations. CO_2 and non-CO_2 gases were included in the estimates from fires.

Estimates of emissions from Fire in Pine Plantations is outlined in Table 8-14.

Table 8-13: Emissions from Fire in Pine Plantations

Emissions/Removals from Forest Degradation (Fire)	Estimate ($tCO_2e\ yr^{-1}$)	Lower Confidence Interval ($tCO_2e\ yr^{-1}$)	Upper Confidence Interval ($tCO_2e\ yr^{-1}$)
Emissions from fire	157,488	98,855	219,937

As emissions and removals from plantation areas are estimated using data from the same source (i.e. Fiji Pine Limited) the risk of double counting is limited.

Estimates of emissions from Forest Degradation is outlined in Table 8-15.

Table 8-14: Emissions from Forest Degradation

Emissions/Removals from Forest Degradation	Estimate ($tCO_2e\ yr^{-1}$)	Lower Confidence Interval ($tCO_2e\ yr^{-1}$)	Upper Confidence Interval ($tCO_2e\ yr^{-1}$)
Emissions from Logging	195,316	167,487	223,343
Removals from re-growth on logged areas	-42,362	-57,222	-27,794
Emissions from Fire	157,488	98,855	219,937
Net Total	**310,442**	**321,925**	**467,501**

An assessment of a sample of MODIS hot spots data corresponding to Natural Forest areas indicate that fire in Natural Forest in Fiji is not a significant source of emissions (See Annex 8-4).

8.3.6 Enhancement of Carbon Stock – Afforestation/Reforestation

The sink 'enhancement of forest carbon stock' is linked to afforestation/reforestation (AR) activities defined as the conversion of land in the land-use sub-category Non-Forest to land in the sub-category Natural Forest (Low- or Upland) or plantations (Softwood or Hardwood). Afforestation/reforestation occurs if the crown-cover percent on a patch of land (min.0.5 ha) reaches or exceeds the threshold value of 10%. The initial carbon stock on land afforested/reforested was considered to be zero. Gross removals from A/R were estimated using IPCC's [2006] generic equation (Equation (8.1)). Activity data on forest area gain were taken from the land-cover change maps. This activity data was combined with a mean annual increment of natural forests in Fiji. Due to a lack of data the same mean annual increment figure was applied to both upland and lowland forests.

Removals on AR land were estimated by taking the average forest area gain and multiplied the average by the mean annual carbon increment (MAIC). Carbon gains for each year following establishment are multiplied by the time elapsed since the A/R event to compute carbon gains over the FRL Reference Period for each year. Finally, the average annual carbon gain over the Reference Period was computed by taking the average of the carbon gains of each year over the Reference Period.

Estimates of removals from Afforestation/Reforestation is outlined in Table 8-16.

Table 8-15: Removals from Afforestation/Reforestation

Removals from A/R	Estimate ($tCO_2e\ yr^{-1}$)	Lower Confidence Interval ($tCO_2e\ yr^{-1}$)	Upper Confidence Interval ($tCO_2e\ yr^{-1}$)
	-327,541	-470,832	-202,971

8.3.7 Enhancement of Carbon Stock – Existing Forests (Plantations)

Enhancement of Carbon Stocks – Existing Forests cover areas of forest plantation in Fiji that exist prior to the start of the Reference Period. Areas defined as Forest Plantations are demarcated by GIS concession boundaries and remain in the land-use category Forest Land even if the crown-cover is completely removed, e.g., temporarily unstocked. As with the natural forest timber concessions these areas are masked from the

wall-to-wall activity data and excluded from those statistics. Proxy methods using self-reported data are applied to estimate emission and removals on these lands.

Fiji's forest definition lists two types of Forest Plantations, namely hardwood plantations and softwood (or Pine) plantations. Hardwood plantations are managed by the Fiji Hardwood Corporation Limited (FHCL). Softwood plantations are managed by Fiji Pine Limited (FPL). The spatial distribution of the plantations is presented in Figure 8.5.

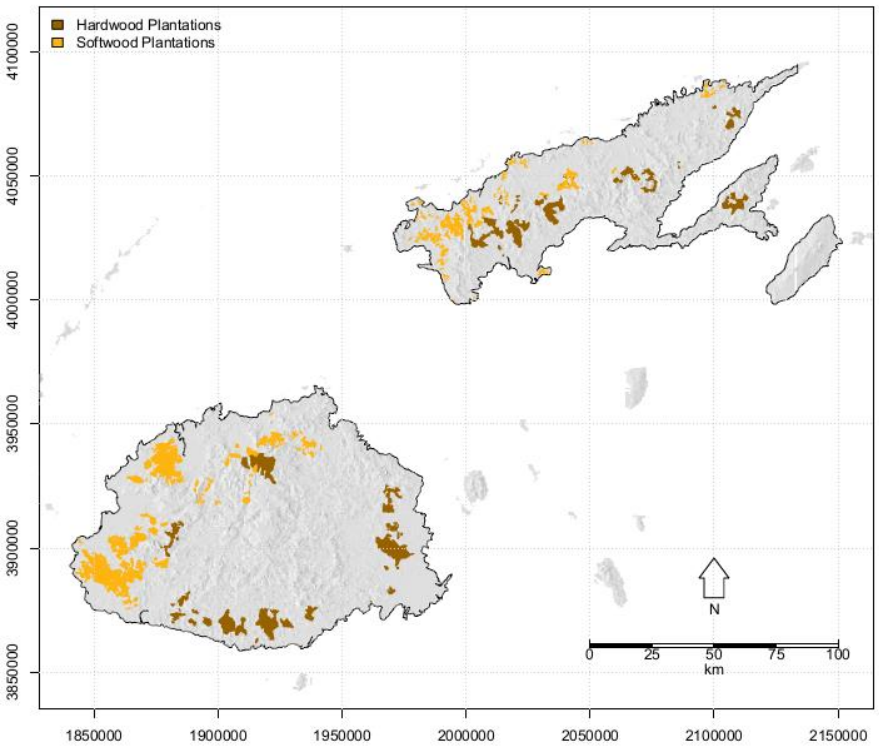

Figure 8-6: Map of Hard-and Softwood Plantations in Fiji (2006). Hardwood Plantations are managed by the Fiji Hardwood Corporation Limited (FHCL), Softwood Plantations are managed by Fiji Pine Limited (FPL). Coordinate Reference System: Fiji 1986 Map Grid (EPSG code: 3460).

To estimate gross emissions from Forest Plantations, records provided by FPL and FHCL on the timber volumes extracted in the years 2006 to 2016 were used. Timber volumes extracted were converted to total tree biomass, then to total carbon and finally to CO_2 emissions. Removals from Forest Plantations were estimated based on the mean annual increment (MAI) reported for hard- and softwood plantations. Removals originate from areas that were planted during the FRL Reference Period and plantations that were planted before the start year 2006 and were not harvested by the end of the Reference Period

Inconsistencies in historical data collection between FPL and FHCL as well as some data quality issues lead to some variation in the equations used to estimate emissions and removals from hardwood and softwood plantations. For example, i) FHCL commenced reporting planted areas annually after 2010. To estimate annual planted area between 2006 -2010 the total planted by 2010 was divided by 5 years to get the average annual planting during this period ii) spatial data on harvest areas provided by FPL were not considered erroneous and not used. Therefore, the area harvested (used for estimate removals) was estimated using data on harvested volumes. To estimate harvested areas, data on the mean annual increment, the cutting cycle (currently 20 years in Softwood Plantations) and the carbon loss due to harvests in each year was used.

The net emissions from Forest Plantations were estimated to be:

Emissions/Removals from Forest Plantations	**Estimate** (tCO$_2$e yr^{-1})	**Lower Confidence Interval** (tCO$_2$e yr^{-1})	**Upper Confidence Interval** (tCO$_2$e yr^{-1})
Emissions from Plantations	596,195	513,925	701,282
Removals from Plantations	-1,639,123	-2,034,655	-1,279,843
Net Total	**-1,042,928**	**-1,445,834**	**-656,927**

To improve estimates from plantation activities, Fiji plans to improve data collection protocols between the MOF and Plantation Companies, equip and train field staff to collect higher quality data and to enhance the remote sensing capabilities of the Ministry to improve monitoring of harvest, regrowth and fire within Forest Plantation areas. These improvements are present in the improvement Plan (see Chapter 9).

8.3.8 Treatment of illegal logging and non-commercial timber extraction activities

Data on logging activities that escape official commercial logging statistics is not available in Fiji. This includes any logging without a licence (e.g. either illegal extraction or removals by landowners that use the wood for subsistence use to build homes[26]or other subsistence wood use).

Illegal logging has been effectively mitigated by the Ministry of the Environment and the MOF in collaboration with landowners. Any illegal activity is on a small scale as to be effectively undetectable. The rules around timber extraction are generally respected by the members of the land-owning units and when breaches occur, action from within the members is taken[27].

From a subsistence use point of view, members of the landowning units (or clan) are not required to gain permission to harvest trees for subsistence purposes. However, if timber is to be extracted on another clan's land then permission to harvest is sought through traditional channels otherwise it is considered illegal logging. The timber extracted in both cases cannot be sold for commercial purposes and can only be used for house building or other subsistence use. The quantities of wood for subsistence use are taken from areas outside of forests demarcated as plantations or for native timber harvest under the control of the MOF. As such subsistence harvesting only occurs in native forest and not in MOF controlled forests such as nature or forest reserves or pine or mahogany plantations.

Some communities have small pine and mahogany woodlots which they harvest occasionally for timber. These activities are not captured in the commercial logging statistics used in the NFMS, but are captured as clearing and regeneration (if they are replanted) in the wall-to-wall activity data with associated emissions or removals reported under the Deforestation or Enhancement of Carbon Stocks (AR) activities under the MRV framework of the NFMS as these areas are not demarcated as plantations by a GIS layer.

Fiji's plan to improve its remote sensing methods and capabilities to enable monitoring of closed and open forest (see Chapter 9) which will assist in improving its capability to capture non-commercial timber extraction activities that do not lead to deforestation. Combining this improved remote sensing data related to forest degradation (and forest enhancement) with a study of timber volumes extracted for subsistence use represents an opportunity for stepwise improvement of monitoring and reporting of timber extraction for subsistence use.

The priority of any improvements to the NFMS and its data sources and methodologies will be to ensure consistency between the FRL developed for the FREL for the ER-PD, and the eventual FRL submission to the UNFCCC as well as with the National Greenhouse Gas Inventory reporting.

[26] Individual members of a landowning unit can typically get permission from the landholding unit to use selected trees within their land unit, to build their own houses for example, but they cannot harvest to sell the timber.
[27] See a recent article recently published in the Fiji Times related to self-reporting of suspected illegal activity https://www.fijitimes.com/pine-trees-illegally-logged-to-build-homes/

8.3.9 Treatment of Private Projects

Within Fiji there is one private project which has completed validation and verification under the Plan Vivo standard and has issued credits. This project is known as “the Drawa Project”. This project estimated net annual emissions removals represents only 1.5% of the annual emissions reductions expected under the ER Program. representing a very small proportion. As an early mover, the Drawa Rainforest Conservation Project made its first sale of carbon credits in 2018. There are other REDD+ pilot sites in Fiji however these sites are not eligible for issuance of carbon credits under any standard (see Section 18.1).

Fiji is currently working on a nesting guideline that will outline the process for all projects to nest in the National System. This Nesting Guideline is scheduled to be completed by the end of 2020 (see Chapter 18.1). In the absence of this nesting guideline being operational combined with the small contribution that the Drawa Project makes to the ER Program, **this project will operate independently for the period of the ER-PA. As such its spatial extent (i.e. approximately 4,120ha) has been excluded (i.e. masked) from the ER program accounting area to avoid double counting.** The Drawa project will be expected to align with the national methodology by 2025 in accordance with the yet to be finalised Nesting Guidelines.

8.4 Estimated Reference Level

Historical emissions associated with deforestation and forest degradation and removals generated by reforestation and forest enhancement are estimated for Reference Period and presented in Table 8-17 below.

Table 8-16: Estimated ER Program Reference Level

	Emissions					**Removals**				**Net**
	A	**B**	**C**	**D**	**E = A+B+C+D**	**F**	**G**	**H**	**I = F+G+H**	**J = E+I**
	Deforestation	**Forest Degradation**		**Carbon Stock Enhancement - Plantations**	**Total Gross Emissions**	**Forest Degradation**	**Carbon Stock Enhancement – A/R**	**Carbon Stock Enhancement - Plantations**	**Total Gross Removals**	
year *t*	Average annual emissions from deforestation in natural forests (tCO_{2-e}/yr)	Average annual gross emissions from logging in natural forests (tCO_{2-e}/yr)	Average annual emissions from biomass burning in softwood plantations (tCO_{2-e}/yr)	Average annual gross emissions from harvesting in Hardwood and Softwood Plantations (tCO_{2-e}/yr)	**Average annual emissions (tCO_{2-e}/yr)**	Average annual removals from logging in natural forests (tCO_{2-e}/yr)	Average annual removals from afforestation / reforestation (tCO_{2-e}/yr)	Average annual removals from Hardwood and Softwood Plantations (tCO_{2-e}/yr)	**Total removals over the Reference Period (tCO_{2-e}/yr)**	**Net Reference Emissions Level (tCO_{2-e}/yr)**
2006	2,696,831	195,316	157,488	596,195	**3,645,830**	- 42,362	- 327,541	- 1,639,123	**- 2,009,026**	**1,636,804**
2007	2,696,831	195,316	157,488	596,195	**3,645,830**	- 42,362	- 327,541	- 1,639,123	**- 2,009,026**	**1,636,804**
2008	2,696,831	195,316	157,488	596,195	**3,645,830**	- 42,362	- 327,541	- 1,639,123	**- 2,009,026**	**1,636,804**
2009	2,696,831	195,316	157,488	596,195	**3,645,830**	- 42,362	- 327,541	- 1,639,123	**- 2,009,026**	**1,636,804**
2010	2,696,831	195,316	157,488	596,195	**3,645,830**	- 42,362	- 327,541	- 1,639,123	**- 2,009,026**	**1,636,804**
2011	2,696,831	195,316	157,488	596,195	**3,645,830**	- 42,362	- 327,541	- 1,639,123	**- 2,009,026**	**1,636,804**
2012	2,696,831	195,316	157,488	596,195	**3,645,830**	- 42,362	- 327,541	- 1,639,123	**- 2,009,026**	**1,636,804**
2013	2,696,831	195,316	157,488	596,195	**3,645,830**	- 42,362	- 327,541	- 1,639,123	**- 2,009,026**	**1,636,804**
2014	2,696,831	195,316	157,488	596,195	**3,645,830**	- 42,362	- 327,541	- 1,639,123	**- 2,009,026**	**1,636,804**
2015	2,696,831	195,316	157,488	596,195	**3,645,830**	- 42,362	- 327,541	- 1,639,123	**- 2,009,026**	**1,636,804**
2016	2,696,831	195,316	157,488	596,195	**3,645,830**	- 42,362	- 327,541	- 1,639,123	**- 2,009,026**	**1,636,804**
Total	**29,665,141**	**2,148,476**	**1,732,368**	**6,558,145**	**40,104,130**	**-465,982**	**-3,602,951**	**-18,030,353**	**-22,099,286**	**18,004,844**
Annual FRL	**2,696,831**	**195,316**	**157,488**	**596,195**	**3,645,830**	**- 42,362**	**- 327,541**	**- 1,639,123**	**- 2,009,026**	**1,636,804**

The contributions (in %) of the different sub-sources and sub-sinks considered in the FRL on gross emissions, gross removals and net emissions are shown in the series of graphs below.

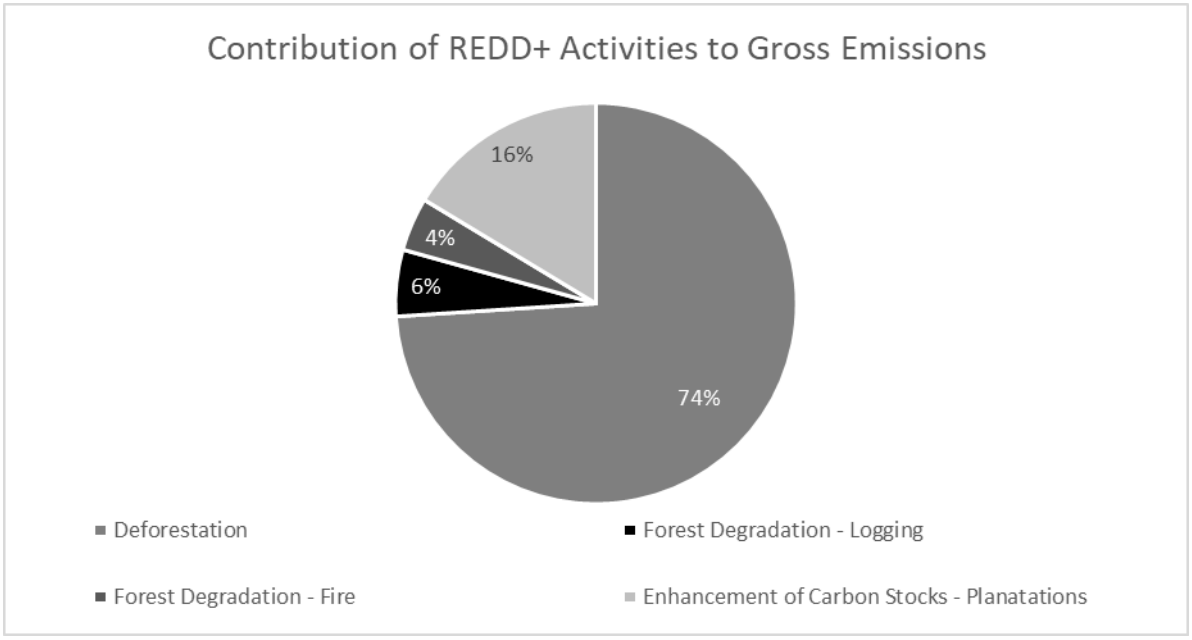

Figure 8-7: Relative Contribution of each REDD+ Activity to Gross Emissions

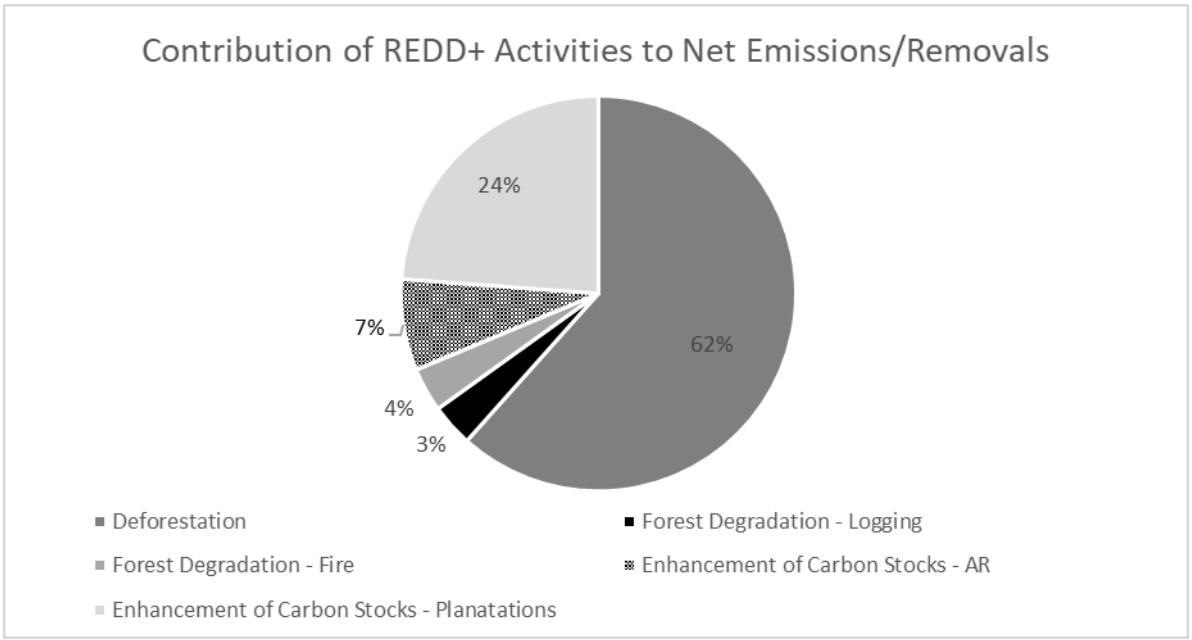

Figure 8-8: Relative Contribution of each REDD+ Activity to Gross Removals

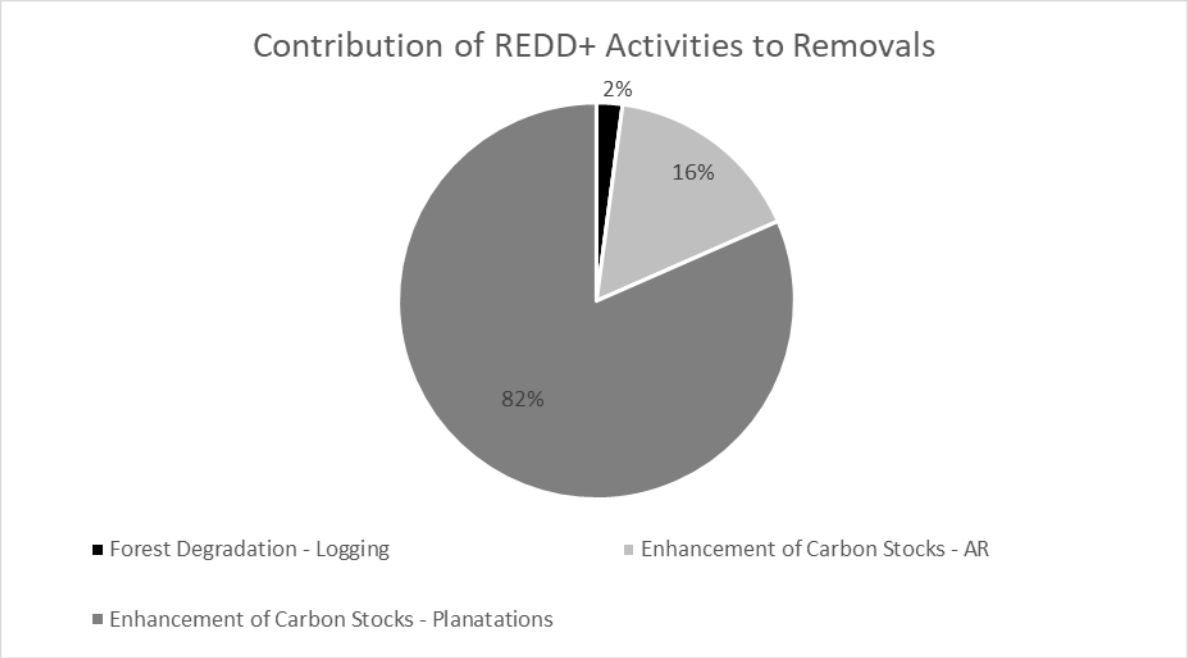

Figure 8-9: Relative Contribution of each REDD+ Activity to Net Emissions/Removals

8.5 Relation between the Reference Level, the development of a FREL/FRL for the UNFCCC and the country's existing or emerging greenhouse gas inventory

The FRL has been developed using a new data set for activity data as well as more refined National Specific emissions factors for above-ground biomass. The national reference level is proposed to be developed following the methods and procedures used for ER program forest reference level. Activity data covering the other major islands will be generated and used to develop a national FREL that will be submitted to the UNFCCC (refer to improvement plan item, section 9.4)

Consistencies include the design characteristics of the FRL such as forest definition, carbon pools, gases. Any variations relating to stratification and reporting of REDD+ activities in the Forest Remaining Forest category of the GHGI will be transparently explained.

Consistency in the methodology and data sources applied to generate the ER-Programme FRL will be prioritised for any reports provided to the UNFCCC, specifically the FRL, National Greenhouse Gas Inventory (GHGI) estimates and National Communications for the forestry sector.

9 APPROACH FOR MEASUREMENT, MONITORING AND REPORTING

9.1 Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area

This Chapter is based on the information presented in Fiji's Forest Reference Level (Mundhenk et al, 2019) and National Forest Monitoring System for Monitoring, Reporting and Verifying (MRV) (Köhl et al, 2018). These documents could be referred for more detailed information.

9.1.1 Approach for estimating emissions and/or removals

The approach for estimating emissions and removals follows the IPCC guidelines generic equation for Tier 1 and 2 estimations, multiplying the activity data (AD) with the emission factors (EF).

$$Emissions = AD \times EF \quad (9.1)$$

Fiji's approach to measuring and monitoring of emissions and/or removals against its Reference Level will result in reporting emissions/removals every two years. Monitoring of activity data (e.g. harvest volumes and land use change) will occur annually. Monitoring of parameters used to develop emission factors are unlikely to be repeated in the Program Period (2020 – 2025). Detail of each monitored variable are presented in Section 9.1.5.

9.1.2 Monitoring activity data for forests using remote sensing

Annual monitoring of activity data is proposed as follows: (1) using Landsat medium (10-30m) resolution, remote sensing imagery to identify the potential forest change areas; (2) using either ground surveys and/or high resolution remote sensing imagery to verify the identified areas of change.
Areas of afforestation/reforestation established during the programme period are unlikely to be visible in medium resolution imagery, therefore ground surveys will be used to support monitoring of these areas. All activity data variables that will be monitored as part of the ER-PD are listed in Section 9.1.5.

9.1.3 Monitoring of ground data sources

Emission factors are estimated from a combination of national data (e.g. from National Forest Inventory (NFI) and Permanent Sample Plots (PSP)) and IPCC default values (see Chapter 8, Annex 8-2 and Mundhenk et al 2019 for more detail). Whilst national ground data will be collected during the Program Period (from PSPs and possibly from a National Forest Inventory plots), emission factors are likely to remain constant.

The ER Program involves a number of community-based activities as well as activities related to the timber harvest. The collection of ground data related to activities such as harvesting, replanting, establishment of new forests and minimizing fire incidents will build on existing relationships between the Management Serviced Division of the MOF and timber industry stakeholders (and communities under new arrangements, see section 9.5) responsible for collecting and making available such data.

For example, three of the five input data sources used for constructing emissions/removals estimates relate to timber harvesting in both Natural Forests and Plantations are proxy data collected via the Timber Revenue System (TRS) (natural forest logging) or self-reporting by Plantation Management Companies (harvest and planting). The existing protocols for collection of this proxy data as well as QA/QC processes applied by the MOF are shown in Figure 9-3.

Experiences from the collection of data through these processes, (e.g. related to timely data capture, QA/QC and appropriate training), will be included when refining or establishing new data collection processes and protocols (e.g. related to community monitoring to be established under the ER Programme.

Any ground data collected will be collated, assessed and improved as part of the technical corrections to the emissions and removals in the reference period and stepwise improvement process (see Section 9.4) to mature national data collection programs. The technical corrections to the GHG emissions and removals reported in the reference period are expected to be carried out in compliance of the Guidance Document 2 of the Methodological Framework of the FCPF Carbon Fund.

9.1.4 Calculation of emissions reduction and/or removals enhancement

The method for estimating emission removals (ERs) will be consistent with that used to estimate the Forest Reference Level (FRL), with all equations and emissions factors being consistent. The monitored activity data (AD) will be inputted into the estimation framework and ERs estimated based on the variation from the FRL. The same Monte Carlo method used in the FRL will be used for uncertainty assessment of the estimated ERs.

9.1.5 Monitored Parameters

The following series of tables summarizes the parameters monitored within the National Forest Monitoring System for each REDD+ Activity.

Data and parameters to be measured for Deforestation

Table 9-1: Deforestation in Natural Forest, Lowland

Variable:	$\hat{A}_{DF,Lowland,t_j}$
Description:	Area of deforestation in Natural Forest, Lowland stratum in year t;
Data unit:	Ha
Source of data or measurement/calculation methods and procedures to be applied, including the spatial level of the data and if and how the data or methods will be approved during the Term of the ER-PA:	This data will be generated from medium resolution satellite imagery; LandSAT. Land use change statistics of forest strata will be generated annually for Viti Levu, Vanua Levu and Taveuni.
Frequency of monitoring/recording:	Annual
Monitoring equipment:	Remote sensing analysis software and GIS software
Quality Assurance/Quality Control procedures to be applied:	QA/QC will be accomplished in a two-step process: i) A set of SOPs for land use change classification have been developed and all interpreters trained in the classification process. ii) Remote sensing analysis is verified using ground data and/or other independent remote sensing data that is available. High resolution data will be prioritised over medium resolution data where possible.
Identification of sources of uncertainty for this parameter	Key uncertainties include error in remote sensing classification due to haze, cloud cover, differences in seasonal greenness, and reflectance differences between Landsat images.
Process for managing and reducing uncertainty associated with this parameter	All personnel will be trained in remote sensing classification and how to conduct associated QA/QC tasks in generating the Activity Data. Consistency in the methods and algorithms used in establishing the Reference Level change data will be maintained in the generation of activity data during the Programme period.

Roles and Responsibilities	The Management Services Division (MSD) of the Ministry of Forests is responsible for image acquisition and processing to generate the required activity data. MSD is also responsible for the collection of training data sets. An external third Party will be engaged to conduct the accuracy assessment.

Table 9-2: Deforestation in Natural Forest, Upland

Variable:	$\hat{A}_{DF,Upland,t_i}$
Description:	Area of deforestation in Natural Forest Upland stratum in year t;
Data unit:	Ha
Source of data or measurement/calculation methods and procedures to be applied, including the spatial level of the data and if and how the data or methods will be approved during the Term of the ER-PA:	This data will be generated from medium resolution remote sensing data; LandSAT. Land use change statistics of forest strata will be generated annually for Viti Levu, Vanua Levu and Taveuni.
Frequency of monitoring/recording:	Annual
Monitoring equipment:	Remote sensing analysis software and GIS software
Quality Assurance/Quality Control procedures to be applied:	QA/QC will be accomplished in a two-step process— i) A set of SOPs for land use change classification has been developed and all interpreters trained in the classification process. ii) Remote sensing analysis is verified using ground data and/or other independent remote sensing data that is available. High resolution data will be prioritised over medium resolution data where possible.
Identification of sources of uncertainty for this parameter	Key uncertainties include error in remote sensing classification due to haze, cloud cover, differences in seasonal greenness, and reflectance differences between Landsat images.
Process for managing and reducing uncertainty associated with this parameter	All personnel will be trained in remote sensing classification and how to conduct associated QA/QC tasks in generating the Activity Data. Consistency in the methods and algorithms used in establishing the Reference Level change data will be maintained in the generation of activity data during the Programme period.
Roles and Responsibilities	The Management Services Division (MSD) of the Ministry of Forests is responsible for image acquisition and processing to generate the required activity data. MSD is also responsible for the collection of training data sets. An external third Party will be engaged to conduct the accuracy assessment.

Data and parameters to be measured for Forest Degradation

Table 9-3: Forest Degradation in Natural Forest

Variable:	$V_{FD,t}$
Description:	wood volume extracted from Natural Forest in year t;
Data unit:	m^3
Source of data or measurement/calculation methods and procedures to be applied, including the spatial level of the data and if and how the data or methods will be approved during the Term of the ER-PA:	The total wood volume of logs extracted annually from Natural Forests subject to logging activities is collected by the Management Services Divisions of the Ministry of Forestry (MOF) through Division of Forest Offices (DFO) staff, known as Log Scalers. On issuance of a licence to log, logging companies can proceed to extract the agreed volume. The logging contractors haul the timber to the log-landings and log-scalers from the Division Forest Offices (DFOs) assess the amount of timber extracted and enter the data into the Timber Revenue System (TRS) database. This volume is used to determine the amount of royalty fees the logger has to transfer to the MOF. As the accuracy of the data is linked to royalties there is confidence in these figures. The volume estimates are derived from diameter measurements at both ends of the bole in cm as well as the length of the bole in meters. The parameters measured are then used to estimate the volume.
Frequency of monitoring/recording:	Annually
Monitoring equipment:	Field Measurements
Quality Assurance/Quality Control procedures to be applied:	Standard operating procedures exist for field measurement and data by Forest Beat Staff who collect the data and staff from the Forest Divisional Offices who conduct the data collation. Staff from the Management Services Division conduct a QA/QC check at the data entry point and any issues are rectified in collaboration with Beat Staff and Divisional Officers. All staff are trained in their roles and responsibilities.
Identification of sources of uncertainty for this parameter	Data from this census of actual timber volume extracted is considered to have small uncertainty — most likely as measurement error of the logs (diameters, lengths and number of logs). The staff (i.e. log-scalers) from the Division of Forest Offices (DFOs) are trained in the collection of this information which is also linked to royalty collection. It is on the basis of these points that the uncertainty was considered small.
Process for managing and reducing uncertainty associated with this parameter	Periodic training of DFO staff and documentation of data collection and archiving processes.
Roles and Responsibilities	Division of Forest Offices staff are responsible for collecting the data and entering it into the Timber Revenue System from where Management Services Division staff can retrieve it for the purposes of estimating and reporting Emission Reductions.

Table 9-4: Forest Degradation in Logged Natural Forest

Variable:	$A_{FD,t}$
Description:	area of Natural Forest logged in year t
Data unit:	Ha
Source of data or measurement/calculation methods and procedures to be applied, including the spatial level of the data and if and how the data or methods will be approved during the Term of the ER-PA:	Annual data on the areas harvested are available from digital logging maps which are provided by logging companies to the Ministry of Forests as part of the process of obtaining a logging licence. This data is collected from all sites issued with a logging licence throughout Fiji, however only areas of natural forest logged within the Fijian islands of Viti Levu, Vanua Levu and Taveuni will be included for monitoring in the ER program.
Frequency of monitoring/recording:	As logging licences are included in the digital boundaries submitted, all the area of the boundaries submitted in the year of reporting will be included to generate this parameter.
Monitoring equipment:	GIS software and in some cases handheld GPS equipment.
Quality Assurance/Quality Control procedures to be applied:	Maps/GIS layers are checked and if necessary, corrected by staff from the Management Service Division (MSD) where discrepancies are found.
Identification of sources of uncertainty for this parameter	The data for the areas logged are census data (i.e., no sampling error). There may be some small errors in boundaries because of GPS instruments.
Process for managing and reducing uncertainty associated with this parameter	The effective QA/QC process in place combined with this being census data (i.e. no sampling error) indicates that the uncertainty associated with this area is low.
Roles and Responsibilities	Divisional Forest Offices and Management Services Division staff are responsible for collecting the data from the Logging Contractors as part of the monitoring of the activities of logging licenses. This is a well-established process within the Ministry of Forests.

Table 9-5: Burnt Softwood Plantation

Variable:	A_{l,t_b}
Description:	Area burnt in softwood plantations at time t.
Data unit:	Ha
Source of data or measurement/calculation methods and procedures to be applied, including the spatial level of the data and if and how the data or methods will be approved during the Term of the ER-PA:	Annual areas of burnt plantations have been historically collected by Fiji Pine Limited. This data is collected by Fiji Pine Limited. The information collected includes the spatial location (forest coup), the year of planting, the year of burn and the total hectares burnt.
Frequency of monitoring/recording:	In response to fire event.
Monitoring equipment:	Field measurements – GPS used to mark boundary of fire scar Remote Sensing – MODIS hot spot data set and potentially Sentinel data to verify fire scars.
Quality Assurance/Quality Control procedures to be applied:	The Ministry of Forests will establish data collection protocols with FPL for this data to be supplied to the Management Services Division. The protocols will include processes for verifying the areas burnt with both field checks and use of remote sensing products such as MODIS hotspots and satellite imagery to corelate the information with fire scars.
Identification of sources of uncertainty for this parameter	The main sources of uncertainty relate to the measurement of areas burnt using the field GPS and random and systematic errors in data entry.
Process for managing and reducing uncertainty associated with this parameter	This uncertainty will be managed with appropriate training and QA/QC processes documented and conducted to reduce such uncertainty.
Roles and Responsibilities	Fiji Pine Limited is responsible for data collection, data entry and making the data available to Ministry of Forest Management Services Division in a timely manner. Management Services Division is responsible for defining data collection protocols and conducting QA/QC processes.

Data and parameters to be measured for Enhancement of Carbon Stocks – Afforestation/Reforestation

Table 9-6: Carbon Enhancement in Natural Forest

Variable:	$\hat{A}_{AR,T_1}$
Description:	area of afforestation/reforestation in Natural Forest year t;
Data unit:	Ha
Source of data or measurement/calculation methods and procedures to be applied, including the spatial level of the data and if and how the data or methods will be approved during the Term of the ER-PA:	Areas of afforestation/reforestation may be difficult to detect using Landsat in the early years of growth. The area of the natural forest establishment will be captured by the landowners/managers of the planted area using GPS. Annual reporting of the successfully established areas and any failed areas will be reported to the Management Services Division. The existing process of data collection related to replanted and harvested plantations areas will be built upon and appropriate adjustments, training and support provided. In addition to the planted GPS boundaries, the wall-to-wall remote sensing analysis of Fiji will continue and eventually as the forest grows Landsat will detect the afforestation/reforestation areas as regrowth. The processes established will ensure there is no double counting of the GPS layers and the detected change (i.e. afforestation/reforestation) from the wall-to-wall remote sensing analysis.
Frequency of monitoring/recording:	Annual
Monitoring equipment:	GPS for marking boundaries of planted area.
Quality Assurance/Quality Control procedures to be applied:	The Ministry of Forests check the afforestation/reforestation areas by visiting a sample of sites.
Identification of sources of uncertainty for this parameter	Afforestation/reforestation data collected using GPS are considered census data hence there are no sampling errors. Small uncertainty from the instruments (GPS) may be expected. Due to training and QA/QC processes in place, measurement random and systematic errors are considered minimal.
Process for managing and reducing uncertainty associated with this parameter	Consistency in the methods and algorithms used in establishing the Reference Level change data will be maintained in the generation of activity data during the Programme period
Roles and Responsibilities	The landowners/managers of areas subjected to afforestation/reforestation are responsible for providing the GPS boundaries of the planted are to the Beat Officers, who submit the data to the Divisional Officers for QA/QC checks. The Divisional Office ensures any corrections required are conducted prior to submitting the data electronically to the Management Services Division of the Ministry of Forests. The Management Services Division is responsible for setting the data collection protocols and processes, enabling required training and capacity building to be conducted and for the generation of Emission/Removals upon which the collected data rely.

Data and parameters to be measured for Enhancement of Carbon Stocks – Forest Plantations

Table 9-7: Carbon Enhancement Softwood Plantation: Wood Volume Harvested

Variable	$V_{SW,L,t}$
Description:	wood volumes harvested in softwood plantations in year t
Data unit:	m^3
Source of data or measurement/calculation methods and procedures to be applied, including the spatial level of the data and if and how the data or methods will be approved during the Term of the ER-PA:	Fiji Pine Limited manages the plantations of softwood. The company provides volume of softwood (Pine) and green weight of harvested wood annually to the Ministry of Forests. Harvesting details are published annually in the Ministry of Forests annual progress report and all relevant data are inputted into the TRS database system.
Frequency of monitoring/recording:	Quarterly to the Ministry of Forests
Monitoring equipment:	Wood volume and green weight of harvested wood are calculated at the Fiji Pine main gate using weighing machine.
Quality Assurance/Quality Control procedures to be applied:	Ministry of Forests staff from the Management Services Division will check samples of the measurement to assess the accuracy of the data provided.
Identification of sources of uncertainty for this parameter	Harvested volume is census hence small source of uncertainty and no sampling error. Uncertainty in weighing machine.
Process for managing and reducing uncertainty associated with this parameter	Maintaining the training of Divisional Forest Office staff and documentation of data collection and archiving processes
Roles and Responsibilities	Fiji Pine Limited is responsible for data collection, data entry and making the data available to Ministry of Forest Management Services Division in a timely manner. Management Services Division is responsible for defining data collection protocols and conducting QA/QC processes.

Table 9-8: Carbon Enhancement Softwood Plantation: Area Planted

Variable:	$A_{SW,PL,t}$
Description:	area planted in softwood plantations in year t
Data unit:	Ha
Source of data or measurement/calculation methods and procedures to be applied, including the spatial level of the data and if and how the data or methods will be approved during the Term of the ER-PA:	Fiji Pine Limited manages the plantations of softwood. The company provides area of softwood (Pine) planted annually to the Ministry of Forests. Simultaneously, Fiji Pine Limited provides polygons for the area planted annually.
Frequency of monitoring/recording:	Annually
Monitoring equipment:	GPS for marking boundaries of planted area.
Quality Assurance/Quality Control procedures to be applied:	Fiji Pine Limited uses an internal monitoring system to report the area of pine planted. Ministry of Forests staff visit a sample of sites to check the quality of the data reported by Fiji Pine.
Identification of sources of uncertainty for this parameter	Areas of forest harvested are census data (no sampling error) therefore only source of uncertainty is instrumental error (GPS).

Process for managing and reducing uncertainty associated with this parameter	GPS instrument having relatively high accuracy will be used. Ministry of Forests staff will visit a sample of sites to check the quality of the data reported by Fiji Pine. An assessment of data accuracy will be made following such checks.
Roles and Responsibilities	Fiji Pine Limited is responsible for data collection, data entry and making the data available to Ministry of Forest Management Services Division in a timely manner. Management Services Division is responsible for defining data collection protocols and conducting QA/QC processes.

Table 9-9: Carbon Enhancement Softwood Plantation Area Logged

Variable:	$A_{SW,LG,t}$
Description:	area logged in softwood plantations in year t;
Data unit:	Ha
Source of data or measurement/calculation methods and procedures to be applied, including the spatial level of the data and if and how the data or methods will be approved during the Term of the ER-PA:	Fiji Pine Plantation Limited will provide area of softwood logged annually. Simultaneously Fiji Pine Limited will provide polygons (with spatial information) of the plantation area logged.
Frequency of monitoring/recording:	Annually
Monitoring equipment:	GPS
Quality Assurance/Quality Control procedures to be applied:	The Ministry of Forests check the planted areas by visiting the sample sites. Additionally, the Ministry of Forests will use Landsat images to identify the area of pine logged using the annual satellite images.
Identification of sources of uncertainty for this parameter	Area of logged softwood plantations are census data hence there are no sampling errors. Small uncertainty from the instruments (GPS) may be expected.
Process for managing and reducing uncertainty associated with this parameter	GPS having relatively high accuracy will be utilized. Remote sensing classification and accuracy assessment will be improved using new technologies that allow for enhanced removal of atmospheric interference and improved classification schemes.
Roles and Responsibilities	Fiji Pine Limited is responsible for data collection, data entry and making the data available to Ministry of Forest Management Services Division in a timely manner. Management Services Division is responsible for defining data collection protocols and conducting QA/QC processes.

Table 9-10: Carbon Enhancement Hardwood Plantation: Wood Volume Harvested

Variable:	$V_{HW,L}$
Description:	wood volumes harvested in hardwood plantations in year t;
Data unit:	m^3
Source of data or measurement/calculation methods and procedures to be applied, including the spatial level of the data and if and how	Fiji Hardwood Corporation Limited will provide wood volume harvested annually. The data on wood volume harvested also include harvested plantation area with area polygons (with spatial information).

the data or methods will be approved during the Term of the ER-PA:	
Frequency of monitoring/recording:	Annually
Monitoring equipment:	GPS and weighing machine
Quality Assurance/Quality Control procedures to be applied:	Fiji Hardwood Corporation Limited will monitor volume harvested internally Ministry of Forests staff will monitor the volume of wood harvested taking samples.
Identification of sources of uncertainty for this parameter	Harvested volume will be census based hence small source of uncertainty and no sampling error. Uncertainty in weighing machine.
Process for managing and reducing uncertainty associated with this parameter	Maintaining the trainings of staff and documentation of data collection and archiving processes
Roles and Responsibilities	Fiji Pine Limited is responsible for data collection, data entry and making the data available to Ministry of Forest Management Services Division in a timely manner. Management Services Division is responsible for defining data collection protocols and conducting QA/QC processes.

Table 9-11: Carbon Enhancement Hardwood Plantation: Area Planted

Variable:	$A_{HW,PL,t}$
Description:	area planted in hardwood plantations in year t
Data unit:	Ha
Source of data or measurement/calculation methods and procedures to be applied, including the spatial level of the data and if and how the data or methods will be approved during the Term of the ER-PA:	Fiji Hardwood Corporation Limited provides hardwood area planted with area polygons (with spatial details) annually to the Ministry of Forests.
Frequency of monitoring/recording:	Annually
Monitoring equipment:	Satellite images, remote sensing and GIS software
Quality Assurance/Quality Control procedures to be applied:	Fiji Hardwood Corporation Limited will monitor the area of hardwood harvested internally. Management Service Division of Ministry of Forests will also identify the area of hardwood harvested using satellite images.
Identification of sources of uncertainty for this parameter	The area of hardwood is census data hence there is no sampling error. However main source of uncertainty is GPS equipment. GPS is used to calculate the hardwood harvested area.
Process for managing and reducing uncertainty associated with this parameter	GPS having relatively high accuracy will be used for mapping hardwood harvested area. A standard operating procedure will be developed for mapping of the harvested area.
Roles and Responsibilities	Fiji Harwood Corporation Limited is responsible for data collection, data entry and making the data available to Ministry of Forest Management Services Division in a timely manner. Management Services Division is responsible for defining data collection protocols and conducting QA/QC processes.

Table 9-12: Carbon Enhancement Hardwood Plantation: Area Logged

Variable:	$A_{HW,LG,t}$
Description:	area logged in hardwood plantations in year t;
Data unit:	Ha
Source of data or measurement/calculation methods and procedures to be applied, including the spatial level of the data and if and how the data or methods will be approved during the Term of the ER-PA:	Fiji Hardwood Corporation Limited will provide area of hardwood logged annually. Simultaneously Fiji Hardwood Corporation Limited will provide polygons (with spatial information) of the plantation area logged.
Frequency of monitoring/recording:	Annually
Monitoring equipment:	GPS
Quality Assurance/Quality Control procedures to be applied:	Ministry of Forests will monitor the planted area by visiting the sample sites; and will use Landsat images to identify the area of hardwood planted. Fiji Hardwood Limited will use internal auditing process to make the area of pine planted is accurate.
Identification of sources of uncertainty for this parameter	Area of logged in hardwood plantations will be census based hence there is no source of uncertainly due to sampling (no sampling error). Uncertainty will be mainly from the use of instruments (GPS). Key uncertainties include error in remote sensing classification due to haze, cloud cover, differences in seasonal greenness, and reflectance differences between Landsat images if Landsat images are used.
Process for managing and reducing uncertainty associated with this parameter	A standard operating procedure will be developed to map areas of hardwood harvested. A GPS having relatively high accuracy will be used. Staff involved in the mapping activity will be trained on use of the SOP.
Roles and Responsibilities	Fiji Harwood Corporation Limited is responsible for data collection, data entry and making the data available to Ministry of Forest Management Services Division in a timely manner. Management Services Division is responsible for defining data collection protocols and conducting QA/QC processes.

9.2 Organizational structure for measurement, monitoring and reporting

Fiji's institutional hierarchy related to National Forest Monitoring shown in Figure 9.1. The **authority** lies with the Ministry of Economy Climate Change and International Cooperation Division is the UNFCCC National Focal Point and Designated National Authority for the National Communication (NC) and the biennial update reports (BUR). The MOF is **responsible** for overall management of Fiji's National Forest Management System which enables reporting on information relating to greenhouse gas emissions and removals from forests as well as safeguards and biodiversity. These two Ministries **inform and consult** a range of stakeholders, including the REDD+ Steering Committee, which represents a cross section of civil society and business interests, as well as other government Ministries.

The MOF is mandated to sustainably manage Fiji's forest resources and as such performs the following functions:

- Coordinate and facilitate the implementation of Forest strategies and policies in partnership with Government entities and the industry;

- Monitor and evaluate the current strategies, policies and deliverables;
- Maintain coordination with other ministries;
- Allocate responsibilities of all divisions ensuring that each division has clear leading role for different components of carbon emission and removal reports;
- Develop and monitor a time frame and schedule for the preparation of the reports and Deliverables;
- Identifying constraints and gaps and related financial and technical and capacity needs;
- Developing and overseeing the implementation of a quality assurance and quality control strategy for all reports related to emissions and removals;
- Developing and maintaining systems and archiving data to ensure institutional memory;
- Managing budget for entire activities of monitoring and measurement, reporting and reporting system;
- Documenting systematically all the assumptions, data and method used;
- Conducting evaluations to identify key lesson learned and areas for improvement.

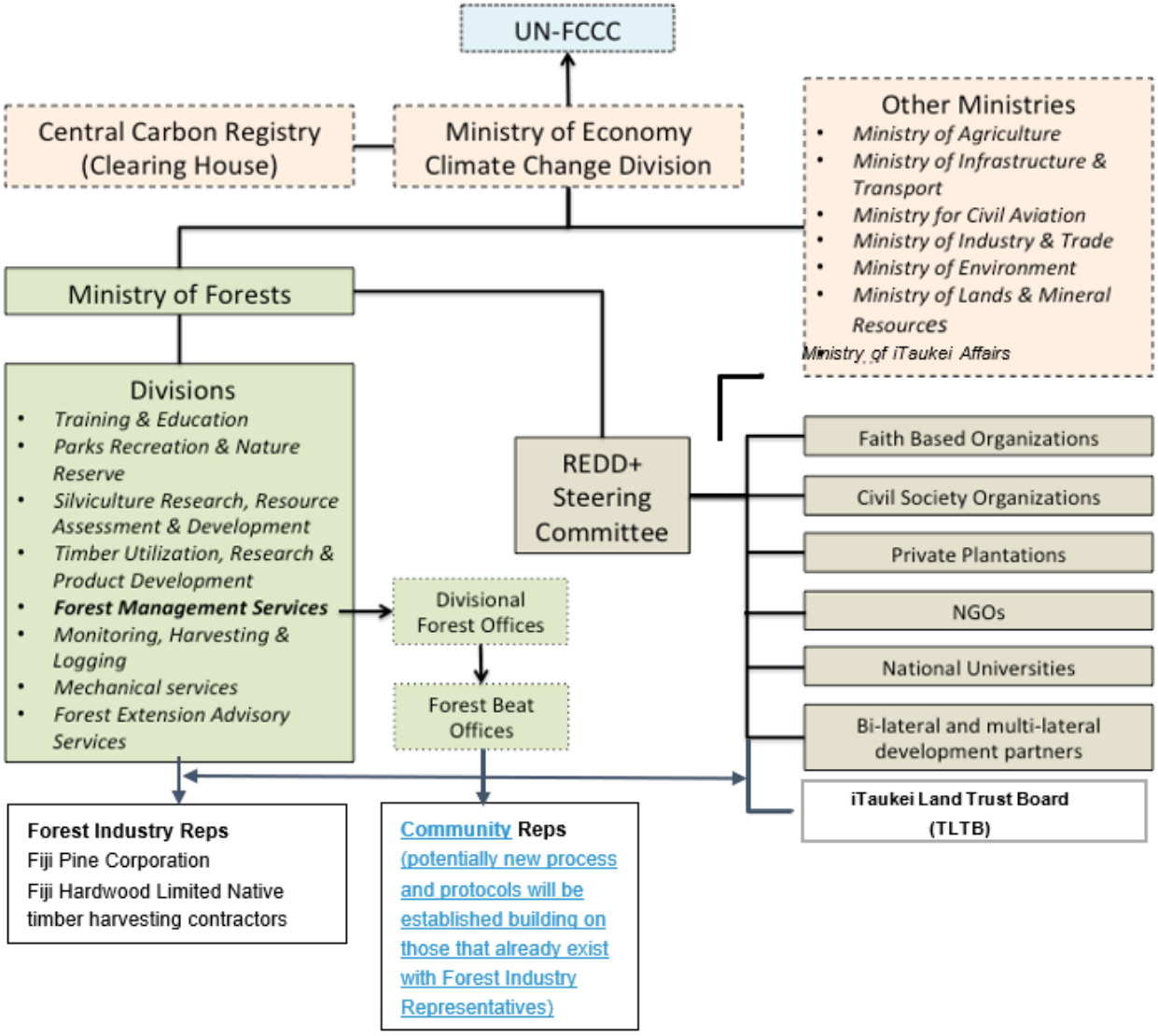

Figure 9-1: Institutional coordination related to National Forest Monitoring System

The competencies and experiences within the MOF required to carry out regular tasks ensure the staff of the Ministry have the relevant requirements to meet the NFMS needs and responsibility for REDD+ implementation. To meet these obligations the Ministry also collaborates with a range of other stakeholders whose role and responsibilities are outlined in Table 9-13.

Table 9-13: Responsibilities of institutions involved with REDD+ implementation

Institutions	New Responsibilities under REDD+	Report to
MOF	• Monitor and Report of GHG emissions and removals by sinks to National Designated Authority (Ministry of Economy)	Ministry of Economy Climate Change and International Cooperation Division
Silviculture Research, Resource Assessment & Development Division	• Undertaking applied research to develop knowledge and skill to improve the ways in which forest owners manage and use forest resource to meet current and future demand of the expanding population. • Undertake research on silviculture to generate knowledge and technology for sustainable management of forests • Develop guidelines for sustainable forest management • Building capacity of government and community members on sustainable forest management • Develop allometric equations for the major tree species, including Mangrove • Develop yield and growth models for the major forest types and species	Permanent Secretary, MOF
Timber Utilization, Research & Product Development Division	• Carry out research on harvesting and utilization of timber, value added products from timber • Timber seasoning and preservation • Conduct research on utilization of lesser known species for timber and other uses	Permanent Secretary, MOF
Management Services Division	• Provide Forest Management Information needs and services to the Ministry Forestry (forest areas, standing forest stocking, logged areas & volume**)** • Provide technical support and services to members of the public relating to natural forest management (volume estimate, logging plan maps, forest inventory) • Management of Forest Information System and Database (forest cover change analysis of satellite image & updating information into our database) • Measurement of permanent sample plots • Mapping & surveying of forest boundaries, forest functions & services • Coordination & facilitation of International, regional conventions & agreements on forests • Regulate Quality control and quality assurance of forest monitoring and measurement • Carry out National Forestry Inventory	Permanent Secretary, MOF
Forestry Training Centre	• Carry out capacity building activities related to forest inventory, yield and growth, remote sensing and GIS, land use classification, accuracy and uncertainty assessment	Permanent Secretary, MOF

Institutions	New Responsibilities under REDD+	Report to
Divisional Forest Offices	• Carry out pre-harvesting inventory and assessment of logging operation • Monitoring and surveillance of harvesting activities • Participate in community awareness and outreach to NGO and communities in rural areas associated with NGOs • Reporting on forest management activities including logging operation to Forestry Department • Maintaining divisional level database system	Conservator of Forests
Ministry of Forest		
Divisional Forest Offices	• Carry out pre-harvest inventory and assessment of logging operations • Monitoring and surveillance of harvesting activities • Participate in awareness and outreach to NGOs and communities in rural areas • Report on development activities including, logging operations to Forestry Department • Maintaining division level database system	Conservator of Forests
Communities and Landowner Groups/ Programmes		
Communities	• Provide land for programme activities • Adopt new land and forest resource management practices • Attend capacity building activities related to REDD+ socialisation and forest monitoring • Collect and report ground data related to monitoring of forest resources and safeguard indicators	Communities (Village/District/ Provincial Council Meeting)
International Development Partners		
SPC Geoscience, Energy & Maritime Division	• Provide technical support particularly on Remote Sensing and GIS to MOF and its sub-ordinate organizations • Provide technical support to estimate activity data using remote sensing techniques • Provide technical support on forest inventory • Carry out capacity building activities related to forest assessment and RS and GIS application	Government of Fiji as a member of the Pacific Community
GIZ	• Provide technical support for forest assessment. • Carry out capacity building activities. • Provide financial support to carry out research and development activities.	Government of Fiji
Conservation International	• Provide technical and financial support to community for afforestation and reforestation • Support to develop livelihood options	Permanent Secretary of Forest

The **Management Services Division (MSD)** under the MOF is responsible for measurement, monitoring and reporting activities including data collection and management and verifying outputs from the National Forest Monitoring System. The structure of MSD is presented in Figure 9-2, including proposed new units to facilitate the measurement, monitoring and reporting including a new Forest Biometrics section which is responsible for ground data and safeguards and an expanded Remote Sensing and GIS section responsible for mapping and

database management. The database unit will also be responsible to support implementation and analysis of data collected using the National Forest Monitoring System.

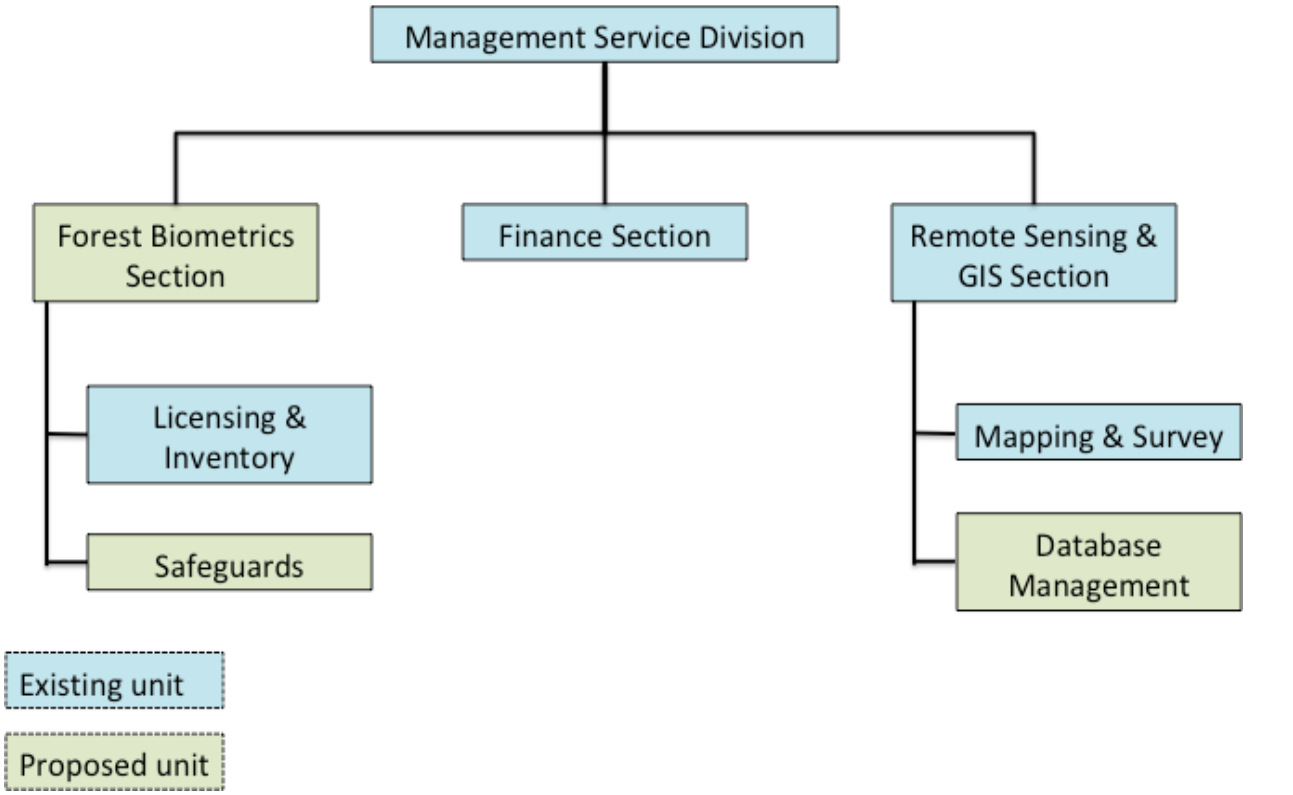

Figure 9-2: Existing and proposed institutional arrangements of Management Services Division of the Ministry of Forest

The MOF issue maps of areas to be harvested to native forest and plantation logging companies. The logging companies must log within these areas and are permitted only to extract the volume outlined in the MOF harvest plan. The plantation and native forest extracted volume data is collected from the field by Beat Officers who submit it to their Divisional offices located in the Central/Eastern/Western and Northern Districts. Staff at the Divisional officers are positioned to check the data for completeness before it is submitted to the Management Services Division.

The Ministry of Forestry issues timber harvest permits to logging companies who extract logs. The Ministry monitors if these operations are in accordance with the permit and collect census data on the logs extracted and areas harvested. There is a template for data collection and the data is stored in the Timber Revenue System database. The harvest areas are captured in maps using GPS from the Forest Beat Offices which have historically been submitted to the MSD office every 6 months to determine the total harvested areas. The process has been revised to require 3 monthly submission of the information. The data collected on timber volumes is subject to QA/QC procedures which the Ministry enforce. More frequent data collection will enable QA/QC checks to be completed more regularly to improve data quality. The process for capturing the harvest area records is represented in Figure 9-3. The QA/QC process involves MSD staff conducting both desk-based and field-based data checks and staff interviews. Responses to data quality issues, such as additional training requirements are noted and followed up under adaptive management.

It has been identified that the data collection protocols and processes require review and augmentation to accommodate the expanded data needs for REDD+. This will include incorporation of new data suppliers (e.g. communities involved in afforestation/reforestation activities and reporting of fire impact), data completeness, quality requirements and timely delivery of data to meet the reporting requirements. This need has been identified as a high priority in Fiji's REDD+ Improvement Plan which is detailed in Section 9.4 below.

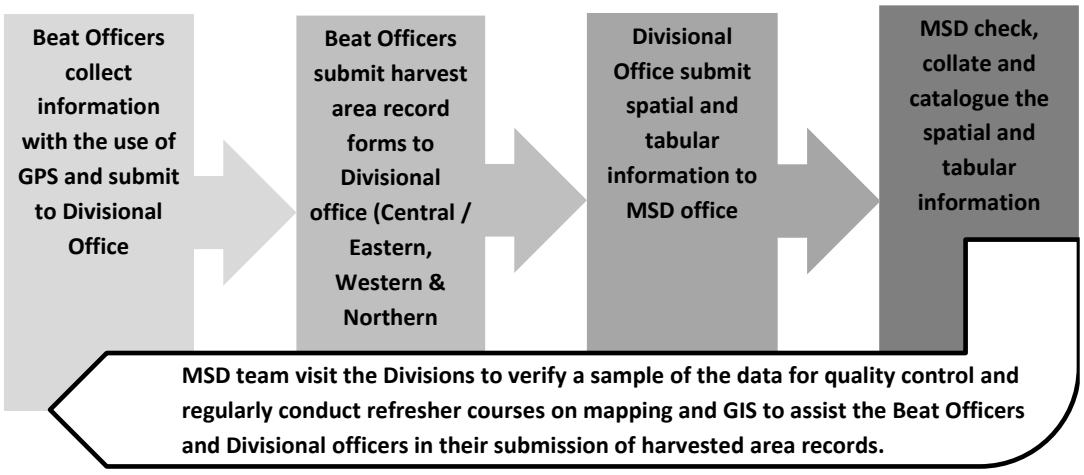

Figure 9-3: Harvest Area Record Data Collection Process

9.3 Relation and consistency with the National Forest Monitoring System

Fiji aims to develop a multi-purpose National Forest Monitoring System through planning and design that ultimately achieves the following:

- Data generated by the NFMS meets information needs of policymakers and local communities and forest entrepreneurs;
- The NFMS integrates multiple thematic fields such as carbon, biodiversity, policy and measures and non-carbon benefits
- The NFMS supports both national and international reporting commitments

Additionally, Fiji is adopting an open data accessibility and transparency policy that will be achieved through following activities:

- National data generated is made freely made available to those complying with national laws and regulations;
- Data sharing between different institutions and user groups is encouraged and facilitated;
- The NFMS builds on existing (local, national, regional, global) systems and is embedded in (existing) national institutions;
- The NFMS provides data needed to support national policies, policy design and enforcement.

The REDD+ monitoring, measurement and reporting (MMR) requirements have provided Fiji's MOF with the opportunity to build on existing data collection activities related to forest resource management in Fiji. The MMR requirements have encouraged the formalisation of a National Forest Monitoring System (NFMS) with an integrated approach to data capture and use, by creating relationships, operational structures (i.e. roles and responsibilities) and documentation to consolidate and formalize the regular collection of information to enable consistent monitoring and reporting of carbon stock changes over time.

Whilst forestry related data capture had historically incorporated both GIS and ground data elements, the NFMS adopts an integrated approach using remote sensing data and periodic ground measurements throughout all major forest types in Fiji. In addition to the improvements made in integrating remote sensing and ground data for emissions estimates, the REDD+ MMR requirements have prompted the inclusion of

safeguards and biodiversity indicators to support such reporting, both to nationally and to relevant external stakeholders.

MSD has a long history of collecting/generating data related to forest management in Fiji from remote sensing analysis and ground inventories. Some of this data is necessary to estimate emissions and removals from deforestation, forest degradation and enhancement of carbon stocks. Data collection is conducted in the field by staff as well as through established relationships with several agencies and corporations including SPC-GSD Geoscience Division of the Pacific Community, Fiji Pine Limited and Fiji Hardwood Corporation Limited.

In the past this data collection was undertaken for operational purposes related to the timber industry with some data collected on a regular basis (e.g. reporting of volumes extracted from timber harvest operations) and others on an 'ad hoc' basis as funds allowed (e.g. mapping of forest cover, measuring permanent sample plots and national forest inventory plots). It is acknowledged that the REDD+ MRV will build on the existing data collection structures but will lead to a maturing of the National Forest Monitoring System through a series of planned improvements in the short, medium and long term.

The datasets described below serve as the basis of Fiji's National Forest Monitoring System (NFMS), which incorporates methods and approaches consistent with IPCC guidelines for the estimation of emissions and removals from Forest lands.

Planned improvements to this existing system will strengthen the capacity to consistently report forest related information to internal and external agencies such as the United Nations Framework Convention on Climate Change (UNFCCC) and the FAO Forest Resource Assessment, among many others. To achieve these expanded aims, MSD plans to expand its skills and organize its units as shown in Figure 9-2. MSD also plans to strengthen the quality of the data collected by improving the documentation relating to data collection and collation and associated QA/QC protocols. Comprehensive training in the application of the data collection protocols will be conducted to the staff associated with monitoring related responsibilities.

Activity Data

MSD Remote Sensing Unit
Historically the South Pacific Applied Geoscience Commission (SOPAC) had produced several land cover maps primarily based on high resolution Digital Globe data. MMR requires regular and consistent change mapping and therefore some changes to the frequency of mapping, as well as the techniques and data. MOF had made use of these Forest Cover maps for reporting forest cover and operational planning.

The REDD+ programme requires regular generation of land cover change statistics based on a reliable and cost-effective data source. Therefore, a remote sensing unit consisting of capacity and infrastructure to generate annual forest cover change using semi-automated processes has been established at MSD.

This newly formed unit within MSD has been established to regularly and consistently develop the activity data sets required for National Forest Monitoring. This is a significant step forward for Fiji in its ability to consistently report forest change statistics into the future and to support improved land management decisions. This unit works closely with the ground data collection units, aimed at improving the quality and completeness of the inventory data collected.

Timber Revenue System (TRS)
In Fiji, commercial loggers must apply for a logging licence if they plan to harvest timber from Natural Forest. Licences are issued by the MOF. Before a licence can be issued by the MOF, the logger must submit a logging plan including a (digital) map of the area to be logged.

Once a licence has been issued, trees have been felled and the timber has been hauled to the log-landings, timber scalers from the Divisional Forest Offices (DFOs) record the volumes extracted to determine the amount of royalty fees the logger has to transfer to the MOF. These volumes are entered into the Timber Revenue System (TRS) database which is managed by the Management Services Division. The digital maps on harvested areas from the logging plans provided by the loggers are used to determine the area of enhanced growth after logging.

Commercial Data Sets
Activity data related to softwood plantations are provided by Fiji Pine Limited (FPL), a quasi-public company of which the Government of Fiji is the majority shareholder. FPL provides data (i) harvested volumes [m3] (ii) spatial data (vector polygons) on areas planted per year [ha], and (iii) areas harvested (vector polygons).

Activity data related to hardwood plantations are provided by Fiji Hardwood Corporation Limited including (i) data on volumes harvested [m3] (ii) data on areas harvested [ha], (iii) data on areas planted [ha], and (iv) data on the mean annual increment (MAI) in mahogany plantations. These data are provided to the Management Services Division via the process described in Figure 9-3.

The plantation and native forest harvest data is submitted to Management Services Division via its Beat Officers and Divisional Offices which is the Central/Eastern, Western and Northern. There is a data collection template and the TRS database on which the information on the volume is captured. The harvest areas are maps using GPS from the beats which are submitted to the MSD office to determine the total harvested areas. The monitoring data and information on harvest area collected by the Beats officers is submitted to their Divisional offices for records. These harvest areas are then submitted to MSD every 6 months, which has been recently revised to every three months (see Figure 9.3).

Emissions Factors

National Forest Inventory
Fiji's first National Forest Inventory (NFI) was conducted by field teams between 2006-04-04 and 2007-12-12. The population of interest for Fiji's NFI was defined by a forest cover map produced in 2001 by the South Pacific Applied Geoscience Commission (SOPAC). The area mapped as Natural Forest in 2001 defined the study population. Forest plantations (i.e., Hardwood and Softwood Plantations managed by FHCL and FPL, respectively) were excluded and were not assessed during the NFI 2006. Cluster plots with five nested circular cluster sub-plots were used for the NFI 2006. On the large sub-plot circle with radius r_1 = 11:28 m (ar_1 = 400 m2), the diameter at breast height and species was recorded on all living trees with > 20 cm DBH. On the circle with radius r_2 = 5:64 m (ar_2 = 100 m2), the DBH and species was recorded on all trees > 5 cm and < 20 cm DBH. And the smallest circle with radius r_3 = 1:78 m for trees > 1:3 m height was counted and the DBH was not recorded.

Permanent Sample Plots
Fiji's Permanent Sample Plot (PSP) program started in 2010. The primary purpose of initiating the program was to obtain estimates of timber growth in Natural Forest to derive annual allowable cuts. Attributes of trees have been recorded on 86 plots in 2010, 2012, 2014 and 2016. Data are currently being collected for the fifth time (August 2018) and it is intended that the program be continued for the next 25 years, at least.

Attributes of trees recorded on the plots include the DBH [cm], the total tree height [m] and tree species. Using a nested plot design, DBH >3cm are measured. Data on litter and soil organic carbon (SOC) were also collected on the PSP plots in 2010, however, these data have not yet been processed in such a way that the data can be readily analysed. Integration of this PSP data into the NFMS of Fiji is seen as a potential stepwise improvement.

New Data Capture Relationships

Community Monitoring
Participatory forest monitoring (PFM) is well suited to monitoring of areas planted and fire scars. It is proposed that PFM protocols with communities be established modelled on the established processes between MSD and the timber industry (e.g., Figure 9.1 & 9.3). Training of participating communities in the use of GIS to map planted lands and fire scars will be conducted by MSD staff who will in turn conduct data quality control checks.

Existing relationship built through the REDD+ Steering Committee which has strong community representation will be the basis of initial stakeholder discussions on the establishment of community monitoring protocols and

processes. The opportunity to build links between the National Forest Monitoring System and the Safeguards Information System will be prioritised.

The development of the procedures and protocols for community participation in monitoring will outline the role of local communities and how the data collected will be used. Clear procedures on what to measure, when, and how the data is collected, and to whom these data are reported and how they are archived will be prioritised and will build on existing community reporting frameworks such as those of the Ministry of iTaukei Affairs and other government agencies and programmes who work closely with communities. The development of such procedures has been identified as a priority stepwise improvement (see Section 9.4).

Biodiversity and Safeguard Indicators

Fiji is committed to developing a multipurpose Safeguard Information System (SIS) and capabilities to meet its International and National Biodiversity reporting commitments in a cost-effective way, harnessing the opportunity to build on the existing monitoring network established for the REDD+ MRV. This will minimize investment and to enhance the synergies between REDD+; GHG Inventories, Biodiversity and Safeguards.
The land use mapping combined with expansion of the measurements taken in the NFI and PSP ground inventories conducted by MSD will be expanded and utilised to monitor and report on biodiversity and safeguard indicators. The process of designing this integrated system is a short-term priority and will potentially involve several new data providers including communities and non-governmental organisations.

Project Level Data and Nesting of REDD+ Projects
Fiji is currently in the process of establishing Nesting Guidelines to accommodate existing (and potentially future) Projects within the National FR. For consistency of reporting and to avoid double counting, Projects will need to align with the National FRL methodology relating to for example, scope (i.e. REDD+ activities; pools and gases included), stratification (i.e. forest classes) and scale of data used (i.e. site-specific vs national/global datasets).Consultations are being undertaken in the context of the schedule to develop the nesting guidelines which is described in more detail in Chapter 18.In the interim, the single Project that has been validated and verified to a standard that issues tradable carbon units (i.e. the Drawa Project)will be excluded from the ER Program area.

9.4 Fiji Stepwise Improvement Plan

It is recognized that, although the development of the FRL is based on the best available data at the time of establishment, there are opportunities for further improvements. Below is a list of immediate and short-term priority improvements that are underway or planned to improve the quality and time series consistency of data collected. This improvement plan was developed with support of the World Bank FCPF programme using the Global Forest Observations Initiative Country Needs Assessment process.

Table 9-14: Fiji stepwise improvement plan

Work Package Title	Est Start Schedule	Responsibility
Quality assessment of data collected from public / private sector	Short Term	Internal
Implement electronic data capture and storage of timber harvest data and input historical data	Short Term	Internal/External
Develop a remote sensing SOP for generating and managing multi temporal activity data	Short Term	Internal
Conduct an accuracy assessment on the multi temporal change data.	Immediate	External
Develop a methodology to estimate forest degradation using the long term multi temporal remote sending data.	Short Term	External
Quality Control Standard Operating Procedure	Short Term	External

Work Package Title	Est Start Schedule	Responsibility
Data Collection, Catalogue and Management Protocols and Standard Operating Procedure	Immediate	External
Fill identified gaps in roles and responsibilities of system wide human resources.	Short Term	Internal
Knowledge transfer of MRV contract operational activities to MSD staff including documentation	Immediate	Internal / External
Modification of Integration Framework to accept new multi-temporal activity data.	Immediate	Internal / External
Prepare and submit a national forest reference level end of 2019.	Short Term	Internal / External
Implement documentation review and release and document control	Short Term	Internal / External
Review capacity development plan and incorporate findings from Country Needs Assessment (CNA)	Immediate	Internal
Develop Record Keeping and Quality Process Recording	Short Term	Internal / External
Development of a web interface to meet transparency requirements of the Methodological Framework Criteria 37.3.	Short Term	External
Install remote sensing infrastructure and associated training	Immediate	External
Update the FRL methodology to include emission from fire.	Immediate	Internal
Generate consistent, multi-date, change data	Immediate	Internal

Monitoring of carbon stocks at national level also requires a high degree of organizational capacity backed up by effective capacity building programmes. Capacity gaps in forest assessments on national level and REDD+ implementation have long been identified in Fiji (Herold, 2009; Romijn et al., 2012; Romijn et al., 2015). Throughout Fiji's readiness process, key personnel have been actively involved in a range of training and collaborations with consultants. However, like most of the other developing countries, Fiji needs considerable capacity improvements at technical, political and institutional levels to provide a complete, consistent, comprehensive and accurate estimation of forest area, forest area change, and carbon stock change; and to attribute anthropogenic forest related GHG emissions by sources and removals by sinks to these changes. A recent capacity assessment undertaken by an independent consultant developed a capacity development plan for Fiji REDD+ NFMS. A summary of this plan is presented in Table 9.6 which will be implemented taking a stepwise approach. For more details on the capacity assessment process and the full unabridged plan see Köhl et al, 2018.

Table 9-15: Summary of Capacity Development Plan for Fiji REDD+ NFMS

Component	Type of capacity	Capacity development	Form of capacity development	Target audience	Responsibility	Status
Operationalising NFMS	Institutional	Improve inter-ministerial and/or interdepartmental coordination and cooperation	Participation Plan Coordination meetings	Sectoral ministries, CSOs and I/NGOs	REDD+ coordinator, REDD+ Steering Committee	Commenced
	Logistics/ Human	Prepare community focused audio/visual materials for Awareness	Materials	Local communities, CSO, local NGO, Indigenous people	MOF, REDD+ Unit	Planned
Forest area change assessment	Institutional	Setting up/enhancing RS analysis lab (high definition computer, licensed software, high internet speed)	RS Laboratory	MOF/MSD	MOF/MSD	Commenced
	Human	Appoint a Remote Sensing Analyst and an GIS Analyst	Expertise	MOF/MSD	MOF	Complete
	Technical	(i) Data procurement and pre-processing (ii) Cost analysis of RS imagery and decision on satellite imagery to use (iii) Develop interpretation guidelines for LUC assessment including ground truthing (iv) Use new techniques such spectral mixture analysis to identify different land use classes.	Training, SoP	MSD, DFO,	MOF	Commenced

Component	Type of capacity	Capacity development	Form of capacity development	Target audience	Responsibility	Status
Changes in carbon stocks	Technical	Forest inventory (stratification, sampling design, response design, measurements, data / sample collection, electronic transfer of data)	Residential training SOPs	MSD, DFO FBO, CSO Mataqali	REDD+ Unit, MOF	Planned
	Logistics	Develop forest inventory protocol/field manual	Protocol/SOPs	MSD, MOF	MOF	Planned
	Technical	Build capacity of the MOF/MSD (FSU) staff on: (i) Data cleansing, statistical analysis, interpretation of the results and derivation of required information using R (ii) Biomass models (iii) Auxiliary data collection (iv) Time series NFI data analysis	Residential training	MSD, DFO, MOF	MOF	Planned
Accuracy assessment and verification	Technical	Develop capacity in country for accuracy assessment and verification.	Hands-on residential training	MOF, MSD, DFO	MOF	Commenced
National and international reporting	Human	(i) Develop knowledge in estimation and reporting procedures for LULUCF using the IPCC GPG (ii) Reporting: o GHG-I (forest sector) o BUR o REDD+ Annex o FAO F	Hands-on residential training	MOF, MSD, DFO	MOF, REDD+ Unit, CCICD	Planned

10 DISPLACEMENT

10.1 Identification of risk of Displacement

The potential risks of displacement of emissions from the proposed ER Program activities are summarized below in Table 10-1. The overall potential risk of domestic displacement is characterized as low (4 drivers as low risk and 1 driver as medium risk). All Interventions are planned within and across the entire Program Area which represents approximately 90% of the National extent of Fiji and therefore displacement will be captured in the established MRV process.

Table 10-1: Summary of possible displacement risk

Driver of deforestation or degradation	Risk of Displacement	Explanation/ justification of risk assessment
Domestic		
Planned conversion to agricultural land	Low	The islands included in the ER-Programme have traditionally been the location of planned conversion to agriculture. This is primarily because of its scale and proximity to markets. The large distances between ports and relatively small land areas suitable for agriculture on the outer islands make then economically infeasible for planned agricultural conversion. Therefore, displacement of planned conversion to agriculture to the outer islands which are not included in this ER-Program is unlikely.
Unplanned forest conversion to agriculture (shifting cultivation)	Medium	Shifting agriculture practices involving cash crops such as Taro and Kava pose a risk for displacement of emissions from the proposed ER Program activities to islands outside the ER-Programme area. However due to the land tenure structure in Fiji where 87% land belongs to *Mataqali* (a Fijian clan or landowning unit) no activity can occur on these lands in the absence of a lease through the iTaukei Land Trust Board (TLTB), the statutory authority which administers all such lands on behalf of the Fijian owners. Any agreement or dealing concerning land made with any other person or group has no legal standing. It is unlikely one *Mataqali* would allow use of their land by another. There may be some risk of market displacement to islands outside the ER-Programme areas however this is considered small considering the remoteness of islands resulting in prohibitive cost of access to market. The combination of landownership structures, monitoring and reporting of program implantation over 90 percent of the national geographic area and remoteness of islands not covered by the program to markets has led to classifying this risk as Medium.
Planned and unplanned natural forest conversion to planted forest	Low	Establishment of plantations is only approved by the government on the three islands included within the ER-Programme areas. As a result, displacement of emissions from the proposed ER Program activities to islands outside the ER-Programme area are not considered likely.
Planned and unplanned conversion related to infrastructure	Low	Drivers of planned and unplanned conversions to infrastructure in the ER-Program area include settlement expansion, as people move from villages to urban areas in search of employment, expanding road infrastructure and tourist related investments such as resorts. The ER Program aim to develop a national land use plan which will include consideration for infrastructure development to minimize conversion of natural forests from infrastructure development. The risk of displacement of these activities to islands not covered under the ER-Program is unlikely as most of the population reside on the islands included in the ER-Program. Impacts from any displacement of tourist

Driver of deforestation or degradation	Risk of Displacement	Explanation/ justification of risk assessment
		related infrastructure as a result of this ER-Program is considered small as maintaining the natural environment is part of the experience that attracts visitors to Fiji.
Unsustainable legal and illegal selective logging for commercial and subsistence purposes	Low	The project area covers the three islands where commercial logging is permitted. No commercial logging is conducted on the islands not included in the ER program, therefore there will be no national displacement of commercial logging. Displacement of unsustainable subsistence logging outside of the project area is not likely due to the logistical and cost issues of moving forest resources between the outer islands and those islands included in the ER Program Area.

10.2 ER Program design features to prevent and minimize potential Displacement

The ER program has identified 3 components and 11 sub-components (Figure 10-1). Several of the ER Program design features assist in preventing and minimizing displacement risk of domestic drivers. A summary of how displacement risk mitigation measures is presented in Table 10.2 and the expected impact by each driver demonstrated in Table 10-3.

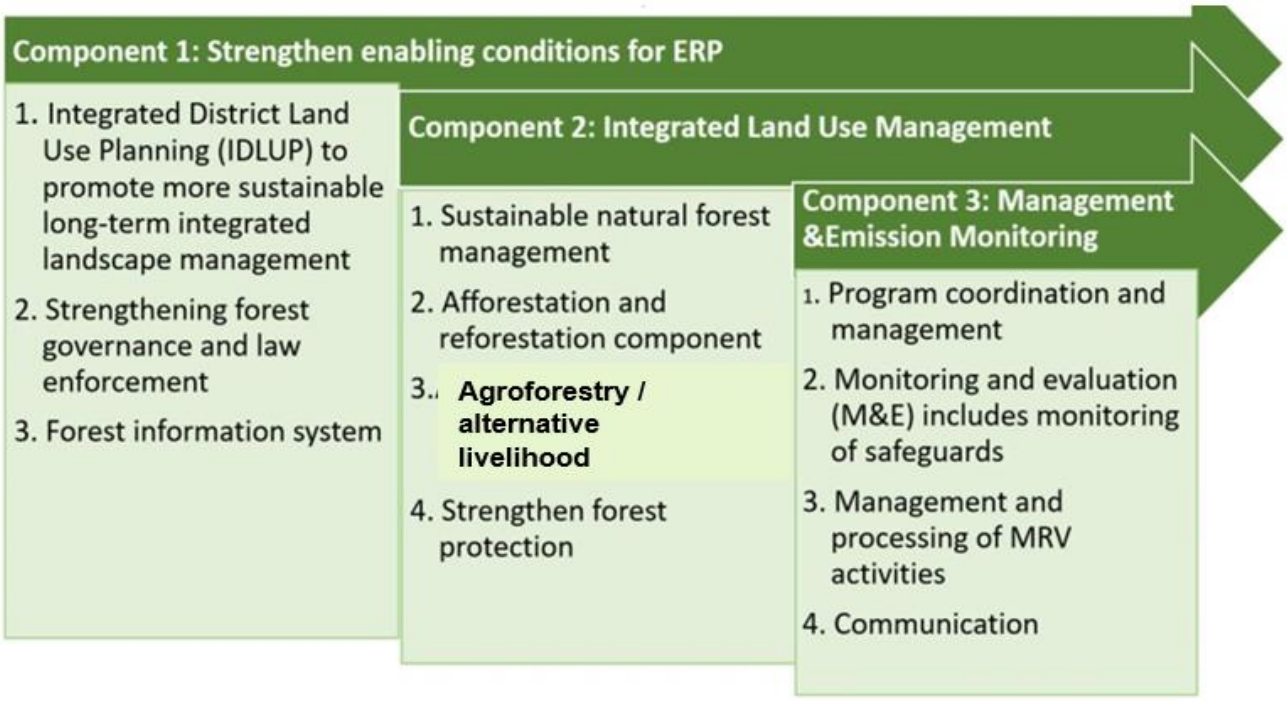

Figure 10-1: ER Program Components and Sub-Components

Table 10-2: ER Program detailed design features to mitigate displacement risk

Sub-Component Number	Sub-Component Name	Displacement risk mitigation measures	Impact on Displacements
Component 1 – Strengthen enabling conditions for ER-P			
1.1	Integrated National Land Use Planning (INLUP) to promote more sustainable long-term integrated landscape management	• National integrated land use plan and provincial level land use plans will improve land use decisions and allocate certain lands to certain land uses. • The planning will also lead to improved control over conversion of natural forests to other land uses • The program will target several Districts over the 5-year programme period.	The combination of a comprehensive land use plan, effective governance and law enforcements as well as operational monitoring and reporting system will provide Fiji with the structures and processes to more effectively manage lands. Displacement of emissions will be mitigated as landowners and managers have increased awareness through consultation and traditional governance systems are strengthened to increase the ability of resource owners to enforce forest laws and related environmental legislations. Displacement emissions from market forces will also be mitigated with the increased presence of Forest Wardens to police forest laws; monitor forest Harvesting operations; provide information and guidance to local communities on the full range of forest management from ecosystem services to sustainable harvesting as well as to report any illegal forest activities in rural areas.
1.2	Strengthening forest governance and law enforcement	• Divisional and Forest management and harvesting plan implementation enforced leading to improved enforcement of forest harvesting code of practice ensuring that harvesting is managed throughout all logged areas both plantations and native forests. • Forest wardens trained to improve forest sector patrolling and inspection, prevention and detection to control and stop conversion of natural forest	
1.3	Forest information system	• Improve monitoring and reporting of forest management through streamlined reporting and coordination between key stakeholders	
Component 2 – Integrated Land Use Management			
2.1	Sustainable management of natural forest	• Establishing long-term Forest Management Licenses and the application of the Forest Harvest Code of Practice that integrates RIL principles which in turn will increase forward planning and investment opportunities.	The combination of strengthening sustainable forest management practices and increasing the area of the harvestable timber estate will over the medium to long term lead

Sub-Component Number	Sub-Component Name	Displacement risk mitigation measures	Impact on Displacements
2.2	Afforestation and reforestation Plantations	• Investments in reforestation of short and long rotation native and exotic species	to a mitigation of displacement emissions. In the interim governance and law enforcement activities in Component 1 will mitigate displacement from the timber harvesting industry in the short term. Including climate smart initiatives will mitigate displacement of agricultural expansion in combination with the Land use plan. An important aspect of the climate smart program from a displacement point of view is the activity to improve farmers access to markets for agricultural commodities. In combination with the financing for protected forest areas displacement at the frontiers of deforestation will be mitigated in the short term.
2.3	Afforestation and reforestation – Natural Forest	• Community agreement to undertake planting trees and a long-term commitment that all members of the clan will protect and support the maintenance and care of the planted trees to be protected from fire, indiscriminate cutting or alternative future land use.	
2.4	Adopt agroforestry/ riparian/ alley planting and sustainable livelihoods	• Implement climate-smart agriculture for kava to reduce encroachment into forest areas • Enhance livelihoods through connecting farmers to market and improvements of agroforestry value chains for agriculture commodities	
2.5	Strengthen forest protection	• Establishment of forest conservation Community Conservation Agreement and TLTB Lease Consensus (at the deforestation frontier) • Secure sustainable financing to support the long-term maintenance and upkeep of the forest protected area	
Component 3 – Management and Emissions Monitoring			
3.1	Program co-ordination and management	Capacity development to change/ adjust work processes (including support to strengthening inter-departmental cooperation mechanisms) to better fulfil MOF functions	The ability to monitor report program effectiveness is critical is addressing any shortcomings early. Utilising the monitoring process to assess effectiveness, identify any potential displacement activities and responding early will reduce the impact on the program. Being agile to learn lessons and adapt through continual improvement is also a
3.2	Monitoring and evaluation	Implementation of M & E for ER program to measure effectiveness	
3.3	Management and processing of MRV activities	Development of effective M&E system, including safeguards; trainings; data collection; reporting	
3.4	Communication	Lessons learnt and continual improvement mechanism	

Sub-Component Number	Sub-Component Name	Displacement risk mitigation measures	Impact on Displacements
			valuable outcome from the MRV cycle.

Table 10-3: Impact on displacement risk by each driver demonstrated

Driver of deforestation or degradation		Displacement risk mitigation measures										
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	2.5	3.1	3.2	3.3	3.4
Planned conversion to agricultural land												
Unplanned forest conversion to agriculture												
Planned and unplanned conversion related to infrastructure / mining												
Unsustainable legal and illegal selective logging for commercial and subsistence purposes												

Ongoing monitoring of displacement indicators and comparisons with the historical average presented in the FRL will be conducted as part of the REDD+ MRV through Fijis National Forest Monitoring System. The intention is to conduct this monitoring both within and outside the program boundaries. Table 10-4 presents the indicators to be monitored and the data to be collected to assess displacement.

Note as described in Chapter 9, the ability to monitor and report deforestation according to the IPCC Land Use categories is a priority improvement to Fiji's National Forest Monitoring System remote sensing capabilities.

Table 10-4: Monitored Displacement Indicators

Indicator	Metric	Monitoring Mode / Frequency
Planned and unplanned agricultural expansion	Area deforested (ForestLand Cropland/Grassland) (ha)	Satellite Imagery / Annual
Rates of extracted timber volumes	Volumes from natural forest and plantations recorded in the Timber Revenue System (TRS) database (m^3)	Field data (census) / Annual
Deforestation associated with infrastructure / mining	Area deforested (ForestLand- Settlement / Other) (ha)	Satellite Imagery / Annual

11 REVERSALS

11.1 Identification of risk of Reversals and ER Program design features to prevent and mitigate Reversals

Reversal of GHG benefits could result from agricultural expansion (due to increase in demand for agricultural products), infrastructure development, mining, unsustainable logging and climate change (due to increase in frequency and intensity of cyclones and dry periods leading to more fires), reduction in stakeholder engagement and ineffective institutional arrangements. Table 11.1 below provides an assessment of the anthropogenic and natural risks of reversals that may affect ERs during the term of the ER-PA and beyond, and the corresponding mitigation strategies. **The resulting risk factor is assessed as 26 % out of 40 %.**

Table 11-1: Risk Assessment

Risk Factor	Default Reversal risk set aside %	Discount %	Resulting Reversal Set aside %	Justification	Residual Risk
Default risk	10%	n.a.	10%	n.a.	n.a.
A. Lack of broad and sustained stakeholder support	10%	5%	5%	The ER Program interventions are designed to assist and engage directly with landowners and timber harvesting companies to protect existing forest areas, reforest degraded lands and improve sustainable harvesting practices. The full extent of the stakeholders within the Project Area have been consulted and have representation on the REDD+ Steering Committee. Several programs across the Project Area are already operational through which these stakeholders are engaged, and support is strong. Component *1 - Strengthening enabling conditions for emissions reduction* of the proposed project implementation activities focuses on strengthening existing frameworks, rationalizing resource allocation and setting up community-based monitoring systems aligned with local governance structures set up by the Ministry of iTaukei Affairs.	Future market demand and price for agricultural commodities and timber.
B. Lack of institutional capacities and/or ineffective vertical/cross sectoral coordination	10%	5%	5%	Higher levels of central and provincial Governments are involved in the ER Program, with commitment from various Ministries secured to ensure effective participation and coordination. There is broad support for the development of the Fiji Land Use Plan. The MOF has committed resources to the REDD+ Unit and this	Limited number of qualified personal at different Government levels, who are capacitated to deliver on REDD+.

				team is committed to increasing local capacity for MRV and strengthening relationships with experienced support organizations.	
C. Lack of long term effectiveness in addressing underlying drivers	5%	2%	3%	**Avoiding Deforestation** There are several programs in Fiji actively working with agriculturists to improve practices, with the aim of protecting forests. One such program, funded by the Global Environment Facility (GEF) and implemented by FAO has established a partnership with the Land Resources Division of the Secretariat of the Pacific Community[28] to reduce or reverse the forest and land degradation around Protected Forest Areas. A package of activities designed for the introduction of sustainable land and soil management practices is under implementation at the three major project sites in Fiji. The major activities are: • Training of agricultural extension workers to provide advice on suitable crops, develop farm budgets and income generating opportunities from sustainable land management practices. • Establishing on site demonstration plots for sustainable land management and to promote agroforestry. • Training of local farmers in sustainable land management practices • Development of Tikina (district) based land-use management plans for communities living adjacent to the protected areas. **Reducing Degradation** Fires are generally lit in grassland areas within Fiji to maintain open agricultural lands. Arson and random setting of fires also occurs. Typically,	Low resources to enforce regulatory environment.

[28] http://www.fao.org/asiapacific/news/detail-events/en/c/273634/

				such fires pose most threat to plantation areas which are generally established on degraded lands. Fires pose a threat to the successful establishment of plantation areas and is considered a large contributing factor to failure in plantation establishment. Several programs are ongoing in Fiji funded by EU and GEF grants that will lead to the development of a National Forest Fire Management Strategy[29] as well as demonstration activities to strengthen the sustainable livelihoods of communities living in and around forest areas[30]. Reforestation areas will be planned and established taking these initiatives into consideration to include buffer zones, fire management plans and targeted awareness programs. **Promoting sustainable forest management**: The ER program will strengthen adherence to the national code of harvesting practice. Government has already started a programme to inform and train the industry on the code of harvesting and plans are underway to develop regulations for the enforcement of the code. Fiji was one of the first countries in Asia-Pacific to develop a code of logging practice and this has been recently reviewed to strengthen reduced impact logging requirements.	
D. Exposure and vulnerability to natural disturbances	5%	2%	3%	Fiji experiences cyclone season between January and May. The outer island regions are affected more regularly than the larger islands included in the Project Area. Storms that result in heavy damage typically occur every ten years, however with climate change the frequency of such damaging storms is anticipated to increase. Therefore, the risk of a storm event impacting REDD+ interventions exists. Damage from heavy storms is typically more significant in exotic plantation forests compared to secondary native forest	Recovery from natural disturbances lead to high short resource needs.

[29] https://reliefweb.int/report/fiji/fiji-gets-support-develop-national-forest-fire-management-strategy
[30] https://www.spc.int/special-projects/sugar-projects/sugar-projects-fiji/reforest-project

				areas and decreases further in primary forests. To mitigate potential losses, areas identified for reforestation projects will undergo a prior assessment of suitability (i.e. aspect, soil type, species composition, management regime) with the aim of minimizing losses from natural disasters.	
Default Risk + A+B+C+D			**26%**		

11.2 ER-Program design features to prevent and mitigate reversals

For Fiji, the corner stone of changing the business as usual and avoiding reversal events during and beyond the lifetime of the ER Program (beyond 2025) is to develop a National Land Use Plan to ensure all future land use needs including REDD+ are embedded in a regulatory environment. Supporting this Land Use Plan with adequate governance and regulatory enforcement, backed up with comprehensive awareness programmes and capacity building in sustainable land use practices in forest and agricultural sectors form the basis of the success of ER programme in Fiji. The residual risks, outlined in Table 11.1, are addressed in the context of Fijis' ER Program design features in Table 11.2.

Table 11-2: Assessment of Reversal risks and mitigation strategies

Risk Factor	Residual Risk	Mitigation and Risk Management strategies
A. Lack of broad and sustained stakeholder support	Future market demand and price for agricultural commodities and timber.	Future market demand and fluctuation of agricultural commodity and timber prices are largely affected by external factors not determined or controlled locally. Regardless, local small holder farms, which are typically versatile with many different commodities often operating at marginal returns, are market driven. The ER-Program activities have been developed to support local landowners and managers to adopt the integrated land use plan and management guideline developed as part of the ER-Program Component 1 whilst also supporting them to remain competitive. The ER Program Component 2.3 activity is focused on the Promotion of climate-smart agriculture and enhanced livelihoods and has several sub-elements all aimed at increasing landowners and managers ability to maximise returns whilst maintaining or enhancing forest cover. These activities aim to enhance livelihoods through connecting farmers to market and to achieve improvements of agroforestry value chains
B. Lack of institutional capacities and/or ineffective vertical/cross sectoral coordination	Limited number of qualified personal at different Government levels, who are capacitated to deliver on REDD+.	The ER-Program outlines several activities across all three components to build and extend capacity in all aspects of the program, including governance, enforcement, monitoring and reporting and sustainable land management practices. It is important within Fiji that the capacity is built across all government and non-government stakeholders. Due to the

Risk Factor	Residual Risk	Mitigation and Risk Management strategies
		relatively small population the collaboration between government and non-government organizations to deliver on this ER-Program is well recognized and has been evident in the collaboration and engagement of the multidisciplinary REDD+ Steering Group since REDD+ inception in Fiji.
C. Lack of long-term effectiveness in addressing underlying drivers	Low resources to enforce regulatory environment.	A lack of enforcement of the regulatory environment is seen as a major contributor to a lack of effectiveness in addressing underlying drivers in Fiji. The ER-Program has identified several activities across all three components including: • Improve capacity of Forest Management Enterprise to apply the Environment Management Act and Endangered Species Act • Training of Forest Wardens to improve forest sector patrolling. Prevention, detection and inspection to control and stop conversion of natural forest • Strengthening forest law enforcement and governance through *Vanua* and Yaubula Management Support Teams at Provincial and District level • Raising awareness and advocacy for REDD+ ER-P, forest and natural resource policies and regulations • Improve monitoring and reporting of forest management through streamlined reporting and coordination between key stakeholders These actions include both capacity building and direct funding to ensure adequate resources and skills are available to those with the responsibility for enforcing the regulatory environment. This joint focus on financial support and capacity building is expected to lead to sustained impact; carrying interventions forward beyond the lifetime of the ER program.
	Decoupling of drivers of deforestation and forest degradation from economic activities	Agricultural land management and expansion is a driver of deforestation and forest degradation in Fiji. A number of REDD+ interventions such as Climate Smart Agriculture and expansion of forest areas are designed to change agricultural land management practices that can pose risks to forest areas in Fiji. This includes the use of fire to maintain grassland areas. Agriculture related interventions within Fiji aim to build upon existing experiences such as pilot projects serve as foundations for policy solutions such as the recently completed National Fire Strategy which encourages a collaborative process with active involvement of all levels of government and non-governmental organizations, as well as the public, to seek national, all-lands solutions tofire management issues.
D. Exposure and vulnerability to natural disturbances	Recovery from natural disturbances lead to high short-term resource needs.	An increase in exposure to cyclones as a result of climate change is inevitable and difficult to manage. Cyclones can be very destructive to dwellings in Fiji and rebuilding can cause a high local demand for timber resources in the months following the events. Such events are difficult to mitigate however with increased policy focus and awareness to sustainable land use and

Risk Factor	Residual Risk	Mitigation and Risk Management strategies
		management, the impact on forest resources will be minimized.

11.3 Reversal management mechanism

Based on the above analysis, 26% of the ERs will be deposited into the ER Program-specific buffer managed by the Carbon Fund. As specified under Carbon Fund Methodological Framework indicator 20.1, at the latest one year before the end of the ER-PA term, the ER Program will have in place a robust reversal management mechanism or another specified approach that addresses the risk of reversals beyond the term of the ER-PA.

Reversal management mechanism	Selected (Yes/No)
Option 2: ERs from the ER Program are deposited in an ER Program -specific buffer, managed by The Carbon Fund (ER Program CF Buffer), based on a Reversal risk assessment.	Yes

11.4 Monitoring and reporting of major emissions that could lead to reversals of ERs

The proposed National Forest Monitoring System (NFMS) will track land use change over time using a dense time series of remote sensing images. The method used to create land use change data will lead to spatially explicit (IPCC Approach 3) representation of areas which undergo land use / land cover change triggering the estimation of GHG emissions from areas which undergo reversals (e.g. areas which are measured and credited as removals in one-time period and as emissions in a later time period).

During ER Program implementation, emissions in the Accounting Area or changes in ER program circumstances that the ER program considers could lead to reversals of previously transferred ERs by the next monitoring event, will be reported to the Carbon Fund within the timeline prescribed in the Carbon Fund Methodological Framework. A percentage of the potential emissions under the proposed ER Program will be used as insurance against the occurrence of any reversals in the Accounting Area included in the Program.

12 UNCERTAINTIES OF THE CALCULATION OF EMISSION REDUCTIONS

12.1 Identification and assessment of sources of uncertainty

This section summarizes the identified sources of error in activity data and emissions factors used to quantify uncertainty according to the FCPF Methodological Framework (MF) and the 2006 IPCC guidelines for National Greenhouse Gas Inventories on Uncertainties (Chapter 3).

The overall approach adopted focuses on:

1. Determining the uncertainty in individual variables associated with the emission factors and activity data
2. Aggregating the component uncertainty to emission factors and activity data and finally to the total emissions and removals.
3. Identify significant sources of uncertainty in the variables to help with prioritizing the data collection to improve emissions and future monitoring and verification process.

Table 12-1 lists the main sources of uncertainty considered for each of the Activity Data parameters used in the methodology outlined in Section 8. Those associated with emissions factors are outlined in Table 12-2.

Table 12-1: Sources of Uncertainty of Activity Data

Parameter	Description	Source of Uncertainty
$\hat{A}_{DF,i,t_m}$	Forest area loss during interval t_m in stratum I where T_m = {2006-2007,2007-2008, tm….,20015-2016}	The main sources of uncertainty in the generation of the activity data from remote sensing data can be classified as either design-imposed constraints or data constraints. *1. Design imposed constraints* • Spatial resolution, annual observations of forest disturbances, and attribution of land-cover changes by disturbance type all influence activity data uncertainty (Mascorro et al., 2015). Supervised approaches use expert identified areas of known vegetation types to tune the parameters of classification algorithms which then classify and label areas like the input training data. Iterative improvements are made to the algorithm based on export knowledge. The errors of commission and omission that occur during classification are subsequently quantified in the accuracy assessment process. This process leads to unbiased estimates with confidence intervals utilised in the Monte Carlo simulations to estimate emissions reduction and associated uncertainties. *2. Data Constraints* Any method is limited to the available archives of image data over Fiji for the period. Landsat is the obvious choice due to the availability of the dense historic time series and was used here as the primary data source. Cloud is present in most Landsat images of Fiji and effectively results in 'missing data' for cloudy areas. The SLC-off stripes in Landsat7 result in similar problems. Where data are cloudy, no interpretation can be made for that period, and the 'no data' effects compound for change maps.
A_{AR,i,t_m}	Forest area gain during interval t_m in stratum I where T_m = {2006-2007,2007-2008, tm….,20015-2016}	
A_{l,t_b}	Area burnt in compartment *l* at time t_b	Annual data on the areas burnt in pine plantations are collected using a GPS and data collated in excel spreadsheets which are then made available to the Management Service Division (MSD). Uncertainty in this data relates to measurement and data entry errors. Data collection and collation protocols between the private sector and MSD will be strengthened to minimise these uncertainties.
$A_{FD,t}$	area of natural forest logged each year	Annual data on the areas harvested between 2006 and 2016 were taken from digital logging maps provided by logging companies. These maps were edited by staff from the Management Service Division (MSD). Editing was necessary if the logger provided paper maps, the area of the proposed logging compartment did not match the data collected by MSD/DFO staff during field checks. This QA/QC process address random errors that can occur in the data collection process. Systematic errors are addressed through extensive and regular staff training carried out by the MOF.
$A_{SW,PL,t}$	area planted in softwood plantations in year t;	Areas of stocked plantations logged and planted were provided from permitted forest activities by Fiji Pine Limited

Parameter	Description	Source of Uncertainty
$A_{SW,LG,t}$	area logged in softwood plantations in year t;	and Fiji Harwood Corporation Limited. In some cases, the areas logged have been estimated from extracted volumes. The sources of uncertainty with this data relate to incomplete record keeping and random and systematic errors related to self-reporting of areas. QA/QC of self-reported data involved multiple interviews to check the accuracy of the data for each year and across years. Nonetheless systematic and random errors remain leasing uncertainties in the data, for example plantation failure rates may not be accurately reported predominately due to lack of historical monitoring of this information. Uncertainty limits have been assessed by expert judgement backed up with some early finding wall-to-wall time series data. Future work will be prioritised to improve the data collection processes required to quantify harvested and stocked areas and their associated uncertainty through a combination of remote sensing and ground data collection.
$A_{HW,PL,t}$	area planted in hardwood plantations in year t	
$A_{HW,LG}$	stocking area in hardwood plantations that was planted before 2006 and not harvested by end of the Reference Period	
$V_{FD,t}$	wood volume extracted from Natural Forest in year t;	The main sources of uncertainty in the volume relate to random and systematic measurement and reporting errors of the field assessment of extracted volume by the staff (i.e. log-scalers) from the Division of Forest Offices (DFOs). Once a licence is issued and the logger has hauled the timber to the log-landings, log-scalers from the Division Forest Offices (DFOs) assess the amount of timber extracted and enter the data into the Timber Revenue System (TRS) database to determine the amount of royalty fees the logger must transfer to the MOF. As the accuracy of the data is linked to royalties the log scalers employed by the MOF are well trained and QA/QC checks of the data are conducted regularly by the MOF, there is confidence in these figures.
$V_{SW,L,t}$	wood volumes harvested in softwood plantations in year t;	
$V_{HW,L}$	wood volumes harvested in hardwood plantations in year t;	

Table 12-2: Sources of Uncertainty of Emission Factors

Parameter	Description	Source of Uncertainty
$\Psi_{DF,Lowland}$	emission factor for deforestation in Lowland Natural Forest	The types of uncertainty that have been considered when setting the probability distribution functions or confidence intervals for the emissions factors include: 1. systematic or random measurement error (e.g. the DBH of trees,) 2.. Modelling uncertainty (PSP height model and Chave et al.'s [2014] AGB model) 3. Reported default value ranges (IPCC [2006] default values)
$\Psi_{DF,Upland}$	emission factor for deforestation in Upland Natural Forest	
TEF	conversion factor for timber volumes extracted to total carbon loss	
$MAIC_{FD}$	mean annual C increment after logging (above ground and belowground);	
$MAIC_{AR}$	mean annual carbon increment for afforestation/reforestation (above ground and belowground)	
$MAIC_{HW}$	mean annual C increment in hardwood plantations	
$\mathrm{MAIC_{SW}}$	mean annual carbon increment in softwood plantations	

12.2 Quantification of uncertainty in Reference Level

Monte Carlo (MC) simulations were used in the quantification of uncertainty. Whilst a summary is presented in this section, detailed description of the methods used to combine MC estimates from individual MC simulations are described in Fiji's Forest Reference Emission Level Report (University of Hamburg, 2018). The Monte Carlo simulation incorporates all parameters used in the estimation of emissions and removals, with each parameter being assigned a probability distribution function (PDF). Parameter uncertainty ranges are listed below. The PDFs used for uncertainty analysis of the FRL included the Normal (or Gaussian) distribution, the Triangular distribution, and the Uniform distribution. Examples of the Normal, Triangular and Uniform distributions are shown in Figure 12.1.

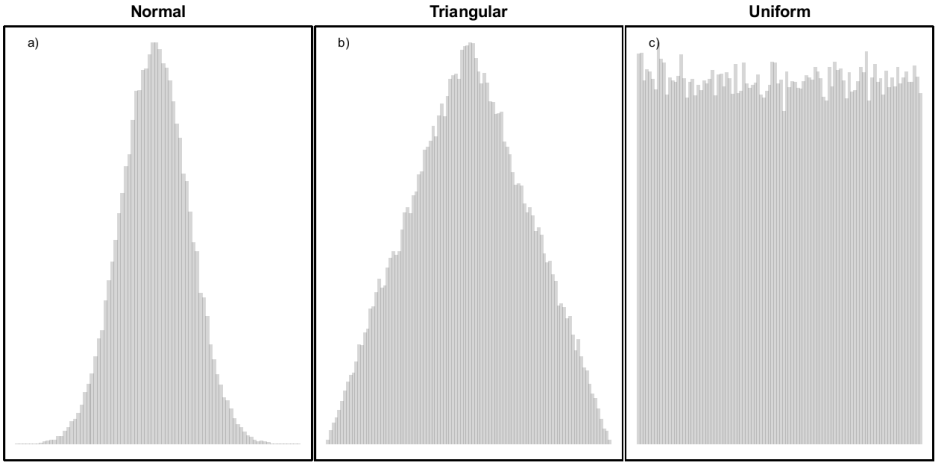

Figure 12-1: Examples of different distributions used for the MC simulations. a) Normal (Gaussian) distribution; b) Triangular distribution; c) Uniform distribution (results from 10000 random draws).

The Normal distribution is described by its mean, μ and its variance σ^2. The notation used for the Normal distribution is $\mathcal{N}(\mu, \sigma^2)$. The Normal distribution was used for inputs when an estimate of the standard deviation,σ , for an input was available, e.g., for the wood density to estimate the AGB of NFI trees.

For many inputs an estimate of the precision was not available, i.e., a value of the standard deviation or standard error was not reported by the study from which the estimate for the input was taken. However, for some inputs the range (lower and upper limits) and the mode was available (e.g., root-to-shoot ratios R that can be found in Vol. 4, Chap. 4, Tab. 4.4 in IPCC [2006]). For these inputs the Triangular distribution was used. The Triangular distribution is denoted by *Tri(c; a; b),* where *c* is the mode (the peak of the Triangular distribution; i.e., the most frequent value), *a* is the lower bound, and *b* is the upper bound. The Triangular distribution was also used if no quantitative information at all was available for the uncertainty attached to the input. If the uncertainty was assumed to be "small" for an input, *a* was defined as $a = c - c \times \phi$ and $b = c + c \times \phi$, where ϕ = 0.25. The value for *c* was the value reported for the input in IPCC [2006] or other studies. If the uncertainty was assumed to be "medium" ϕ = 0.5 and if "large" ϕ = 0.75. Whether the uncertainty attached to the input was "moderate", "large" or "very large" was determined by expert judgement (e.g., REDD+ Steering Committee or authors that conducted the study from which the value of the input was taken). If an expert's opinion was not available, ϕ = 0.75 was used.

The Uniform continuous distribution, $\mathcal{U}(a, b)$, was defined by a lower bound *a* and an upper bound *b*. All values within this range are assumed to be equally probable.

To quantify the uncertainty attached to the Forest Reference Level estimate, Monte Carlo (MC) simulations were used. The MC simulations delivered $\mathcal{R}$ = 4 x 10^4 MC estimates of target parameters. An example to illustrate how uncertainties were estimated for a target parameter (i.e., the average annual gross emissions from forest degradation) is presented below.

Example:
The set of the MC estimates related to average annual gross emissions from forest degradation is denoted by:

$$\widehat{\Theta}^*_{FDem} = \{\hat{\theta}^*_{FDem,1}, \hat{\theta}^*_{FDem,2}, \ldots., \hat{\theta}^*_{FDem,r}, \ldots., \hat{\theta}^*_{FDem,R}\}$$

The MC estimates for gross emissions from Forest Degradation($\widehat{\Theta}^*_{FDem}$) were estimated using random inputs for Timber Emission Factor (TEF). The estimate of $\hat{\theta}^*_{FDem}$ applied in the simulation is that reported for the FRL. The uncertainty that is reported for $\hat{\theta}^*_{FDem}$ i.e., its precision, is derived from the distribution of the $\mathcal{R}$ MC estimates. The distribution of the $\mathcal{R}$ estimates in $\hat{\theta}^*_{FDem}$ is shown in Figure 1.

To obtain an estimate of the lower and upper limit of the 90%-confidence interval, the Q(0:05) and Q(0:95) quantiles were used (shown as dashed vertical lines in Figure 1). Note that confidence limits around the parameter estimates do not necessarily have to be symmetrically when they are estimated from the quantiles of the MC distributions, e.g., the quantiles from $\hat{\theta}^*_{FDem}$. This may hold true in particular, if inputs in the MC simulation runs are sampled from non-symmetrical probability density functions (e.g., a non-symmetrical Triangular distribution).

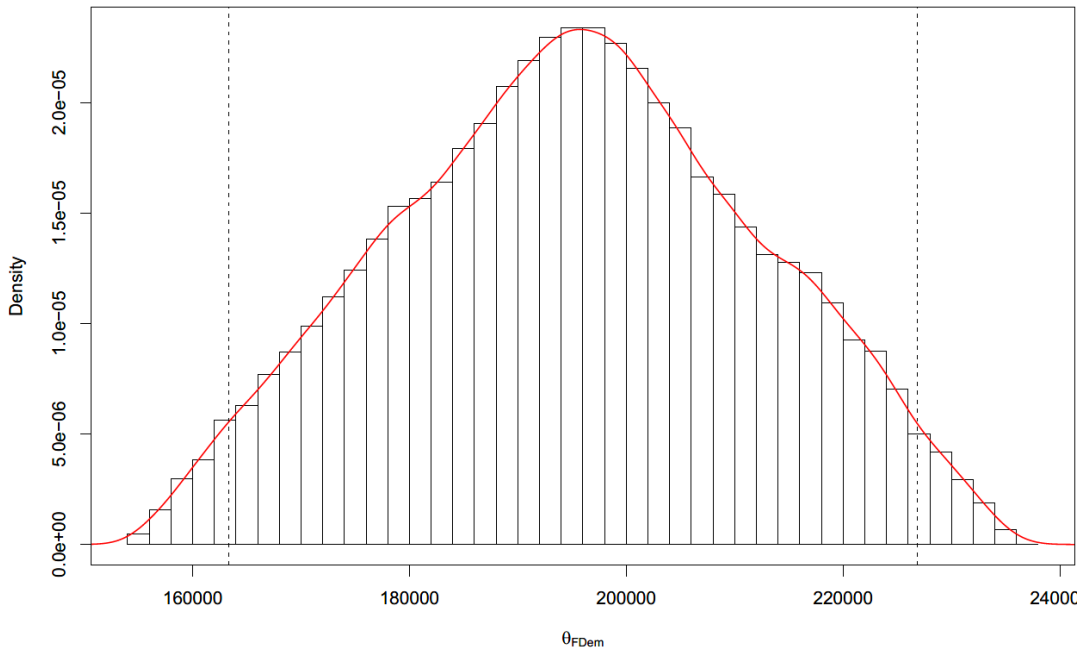

Figure 12-2: Histogram of Monte Carlo estimates of average annual gross emissions from forest degradation $\hat{\theta}^{*}_{FDem}$.

If estimates from two (independent) MC simulations are combined, for example average annual gross emissions from forest degradation ($\hat{\theta}_{FDem}$) and annual average gross removals after forest degradation ($\hat{\theta}_{FDre}$) the set of combined estimates representing net emissions form forest degradation ($\hat{\theta}_{FD}$) is obtained as follows:

$$\hat{\Theta}^{*}_{FD} = \{\hat{\theta}^{*}_{FDem,1} + \hat{\theta}^{*}_{FDre,1}, \ldots., \hat{\theta}^{*}_{FDem,r} + \hat{\theta}^{*}_{FDre,r}, \ldots. \hat{\theta}^{*}_{FDem,\mathcal{R}} + \hat{\theta}^{*}_{FDre,\mathcal{R}}\}$$

As for average annual gross emissions from forest degradation ($\hat{\theta}_{FDem}$), the estimate that is reported for net emissions form forest degradation ($\hat{\theta}_{FD}$) is the estimate computed in the FRL. The uncertainty reported for net emissions form forest degradation ($\hat{\theta}_{FD}$) is derived from the distribution of estimates for net emissions from Forest Degradation ($\hat{\Theta}^{*}_{FD}$). For the MC simulations used to compute the uncertainty of the FRL estimate, outputs of individual MC simulations were aassumed to be independent (i.e., no correlation was assumed between the combined inputs of the individual MC simulations).

The methods used to combine estimates from independent MC simulations can be extended to any number of parameter estimates, given that $\mathcal{R}$ is the same for the independent MC simulations. Figure 2 shows the cconvergence behaviour of the lower Q(0:05) and upper Q(0:95) confidence limits for different numbers of Monte Carlo (MC) simulation runs 100, 200;…. ; 40,000. The estimated FRL is shown as a solid horizontal line.

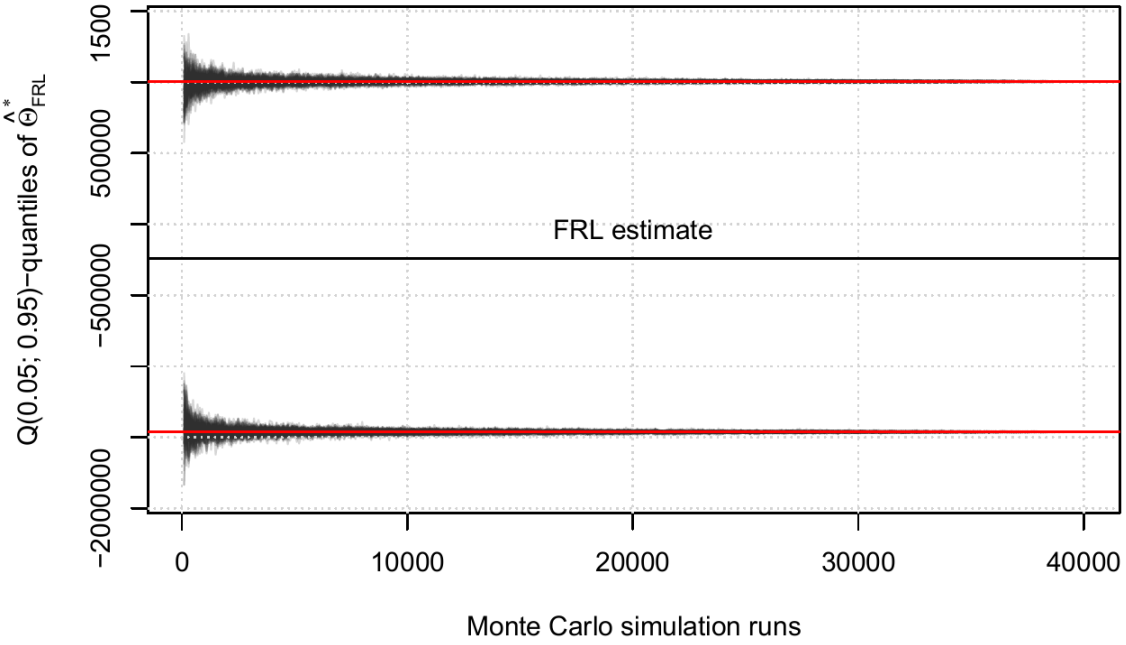

Figure 12-3: Convergence behaviour of the lower Q(0:05) and upper Q(0:95) confidence limits for different numbers of Monte Carlo (MC) simulation runs 100; 200;…. ; 40,000. The estimated FRL is shown as a solid horizontal line.

Table 12-3: Uncertainty of Activity Data

Parameter	Description	Assessment of Uncertainty	Quantification of Uncertainty	Source / Justification
$\hat{A}_{AR,t}$	Forest area gain during the reference period This area represents the total area afforested/reforestated in the first sub-period (i.e. no distinction is made between lowland and upland forests).	small source, highly relevant; included in the quantification of uncertainty.	Sampled from a triangular distribution with a lower bound $a = A_{AR,\mathrm{t}} - A_{AR,t} \times 0.25$; upper bound $a = A_{AR,t} + A_{AR,t} \times 0.25$, mode $c = A_{AR,t}$.	An accuracy assessment was conducted following the stratified random sampling methods outlined in Olofsson et al (2014) for the annual LULC change maps used to derive Fiji's FRLs. These accuracy calculations enable areas derived from the LULC change maps to be corrected for errors of omission and commission. This error correction is designed to produce unbiased estimates of the LULC changes, and some measure of uncertainty (i.e. a confidence interval) associated with each of the estimates.
$\hat{A}_{DF,Lowland}$	Average annual forest area losses in hectares in the strata Lowland Natural Forest during the Reference Period	small source, highly relevant; included in the quantification of uncertainty	Sampled from a triangular distribution with a lower bound $a = A_{\mathrm{DF,Lowland}} - A_{DF,Lowland} \times 0.25$; upper bound $a = A_{DF,Lowland} + A_{DF,Lowland} \times 0.25$, mode $c = A_{DF,Lowland}$.	
$\hat{A}_{DF,Upland}$	Average annual forest area losses in hectares in the strata Upland Natural Forest during the Reference Period	small source, highly relevant; included in the quantification of uncertainty	Sampled from a triangular distribution with a lower bound $a = A_{\mathrm{DF,Upland}} - A_{DF,Upland} \times 0.25$; upper bound $a = A_{DF,UPland} + A_{DF,Upland} \times 0.25$, mode $c = A_{DF,Upland}$.	
$V_{FD,t}$	wood volume extracted from Natural Forest in year t;	small source of uncertainty, not relevant; not included in the quantification of uncertainty.	None	Data are census data (i.e., no sampling error). High confidence in the data collected by Ministry staff as systematic and random errors are considered nil due to QA/QC checks and training and strong links to Ministry revenues.
$A_{FD,t}$	area of natural forest logged each year	small source, highly relevant; included in the quantification of uncertainty.	Sampled from a triangular distribution with lower bound $a = A_{FD,\mathrm{t}} - A_{FD,\mathrm{t}} \times 0.25$; upper bound $a = A_{FD,\mathrm{t}} + A_{FD,\mathrm{t}} \times 0.25$, mode $c = A_{FD,\mathrm{t}}$.	Confidence in the data collected by Ministry staff, however systematic and random errors can occur in mapping of areas. QA/QC checks have found evidence of errors which are considered small.
$V_{SW,L,t}$	wood volumes harvested in softwood plantations in year t;	small source, not relevant; not included in the	None	Data are census data (i.e., no sampling error). High confidence in the data collected by Ministry staff as systematic and

Parameter	Description	Assessment of Uncertainty	Quantification of Uncertainty	Source / Justification
		quantification of uncertainty.		random errors are considered nil due to QA/QC checks and training and strong links to Ministry revenues.
$A_{SW,PL,t}$	area planted in softwood plantations in year t;	medium source, highly relevant; included in the quantification of uncertainty.	Sampled from a triangular distribution with lower bound $a = A_{\mathrm{SW,PL,t}} - A_{\mathrm{SW,PL,t}} \times 0.5$; upper bound $a = A_{\mathrm{SW,PL,t}} + A_{\mathrm{SW,PL,t}} \times 0.5$, mode $c = A_{\mathrm{SW,PL,t}}$.	Confidence in the area data collected by Ministry staff, however the area planted is used as a proxy for growing stock. Area planted does not take into consideration failed areas. Improvements to this dataset are planned to enable more confidence in the capture of growing stocked areas.
$A_{SW,LG,t}$	area logged in softwood plantations in year t;	small source, highly relevant; included in the quantification of uncertainty.	Sampled from a triangular distribution with lower bound $a = A_{\mathrm{SW,LG,t}} - A_{\mathrm{SW,LG,t}} \times 0.25$; upper bound $a = A_{SW,\mathrm{LG,t}} + A_{\mathrm{SW,LG,t}} \times 0.25$, mode $c = A_{\mathrm{SW,LG,t}}$.	Confidence in the data collected by Ministry staff, however systematic and random errors can occur in mapping of areas. QA/QC checks have found evidence of such errors which are considered small
$V_{HW,L}$	wood volumes harvested in hardwood plantations in year t;	small source, not relevant; not included in the quantification of uncertainty.	None	Data are census data (i.e., no sampling error). High confidence in the data collected by Ministry staff as systematic and random errors are considered nil due to QA/QC checks and training and strong links to Ministry revenues.
$A_{HW,PL,t}$	area planted in hardwood plantations in year t	medium source, highly relevant; included in the quantification of uncertainty.	To obtain random draws of the area planted in the years 2006 to 2010, z = 10 realizations were drawn from a Uniform distribution with lower bound a = 0 and upper bound b = 3050:3, where b is the entire area planted between 2001 and 2010.	Confidence in the area data collected by Ministry staff, however the area planted is used as a proxy for growing stock. Area planted does not take into consideration failed areas. Improvements to this dataset are planned to enable more confidence in the capture of growing stocked areas.

Parameter	Description	Assessment of Uncertainty	Quantification of Uncertainty	Source / Justification
$A_{HW,LG}$	stocking area in hardwood plantations that was planted before 2006 and not harvested by end of the Reference Period	medium source, highly relevant; included in the quantification of uncertainty.	Sampled from a triangular distribution with lower bound $a = A_{HW,\mathrm{LG,t}} - A_{\mathrm{HW,LG,t}} \times 0.5$; upper bound $a = A_{HW,\mathrm{LG,t}} + A_{\mathrm{HW,LG,t}} \times 0.5$, mode $c = A_{\mathrm{HW,LG,t}}$.	Confidence in the area data collected by Ministry staff, however the area planted is used as a proxy for growing stock. Area planted does not take into consideration failed areas. Improvements to this dataset are planned to enable more confidence in the capture of growing stocked areas.

Table 12-4: Uncertainty of Emissions Factors

Parameter	Description	Assessment of Uncertainty	Quantification of Uncertainty	Source / Justification
$\Psi_{DF,Lowland}$	emission factor for deforestation in Lowland Natural Forest	large source of uncertainty, highly relevant; included in the quantification of uncertainty.	Lower CI[$tCO_2e\ ha^{-1}$] – 221.38 Upper CI[$tCO_2e\ ha^{-1}$] – 303.78 Sampled from a triangular distribution with lower bound a = $\Psi_{DF,Lowland}$ – 221.38, upper bound b = $\Psi_{DF,Lowland}$ + 303.78 and mode c = $\Psi_{DF,Lowland}$	The mode and confidence intervals for the Lowland and Upland Natural Forest were estimated as a result of combining the listed sources of uncertainty in Table 12.2 and running Monte Carlo simulations to estimate total uncertainty. The specific steps involved in assessing the NFI data plots and conducting the Monte Carlo analysis are described in the independent consultant report (Kohl et al, 2018) specifically Appendix A.2.4.
$\Psi_{DF,Upland}$	emission factor for deforestation in Upland Natural Forest	large source of uncertainty, highly relevant; included in the quantification of uncertainty.	Lower CI[$tCO_2e\ ha^{-1}$] – 157.00 Upper CI[$tCO_2e\ ha^{-1}$] – 248.45 Sampled from a triangular distribution with lower bound a = $\Psi_{DF,Upland}$ – 157.00, upper bound b = $\Psi_{DF,Upland}$ + 248.45 and mode c = $\Psi_{DF,Upland}$	
TEF	conversion factor for timber volumes extracted to total carbon loss	large source of uncertainty, highly relevant; included in the quantification of uncertainty.	Sampled from a triangular distribution with lower bound a = TEF - TEF x 0.25, upper bound b = TEF + TEF x 0.25, and mode c = TEF	The mode of TEF was determined from a small-scale study within the ER Program area (Haas, 2015), however the upper and lower bounds were estimated from expert judgement.
$MAIC_{FD}$	mean annual C increment after logging (above ground and belowground);	large source, highly relevant; included in the quantification of uncertainty.	Sampled from a triangular distribution with lower bound $a = MAIC_{FD} - MAIC_{FD} \times 0.5$, upper bound $b = MAIC_{FD} + MAIC_{FD} \times 0.5$ and mode $c = MAIC_{FD}$	The mean annual carbon increment value was provided through personal communication with local Fijian experts and related only to data collected at one lowland forest pilot project. As such a large level of uncertainty was assumed.
$MAIC_{AR}$	mean annual carbon increment for afforestation/reforestation (above ground and belowground)	large source, relevant; included in the quantification of uncertainty.	lower CI[tC ha-1 yr-1]: 1.61 upper CI[tC ha-1 yr-1]: 3.66 Sampled from a triangular distribution with a lower bound	The mode and range of the $\mathrm{MAIC_{AR}}$ was determined from the combined uncertainties associated with the parameters used to estimate it, namely MAIVAR which was derived from data provided by FHCL

Parameter	Description	Assessment of Uncertainty	Quantification of Uncertainty	Source / Justification
			a = $MAIC_{AR}$ − 1.61, upper bound b = $MAIC_{AR}$ + 3.66 and mode c = $MAIC_{AR}$	(triangular PDF with φ = 0:5), and $\mathrm{BCEF_{AR,I}}$ which was selected from IPCC [2006, Vol. 4, Chap. 4, Tab. 4.5] (triangular PDF with φ = 0:5) and $\mathrm{R_{wl}}$ selected from [IPCC, 2006, Vol. 4; Chap. 4; Tab. 4.4] triangular PDF with φ = 0:5).
$MAIC_{HW}$	mean annual C increment in hardwood plantations	large source, relevant; included in the quantification of uncertainty	Sampled from a triangular distribution with lower bound $a = \overline{\mathrm{MAIV}}_{\mathrm{HW}} - \overline{\mathrm{MAIV}}_{\mathrm{HW}} \times 0.5$, upper bound $b = \overline{\mathrm{MAIV}}_{\mathrm{HW}} - \overline{\mathrm{MAIV}}_{\mathrm{HW}} \times 0.5$, mode $c = \overline{\mathrm{MAIV}}_{\mathrm{HW}}$	Annual increments of wood volume in Hardwood Plantations were estimated based on expert judgement taking into consideration data on mean annual volume increments, MAIVHW, areas planted during the Reference Period and growth on areas that were planted before 2006 and were not harvested before the end of the Reference Period.
$\mathrm{MAIC_{SW}}$	mean annual carbon increment in softwood plantations	large source, relevant; included in the quantification of uncertainty	Sampled from a triangular distribution with lower bound $a = \mathrm{MAIB_{SW}} - \mathrm{MAIB_{SW}} \times 0.5$; upper bound $a = \mathrm{MAIB_{SW}} + \mathrm{MAIB_{SW}} \times 0.5$, mode $c = \mathrm{MAIB_{SW}}$.	MAIBSW (which is multiplied by the carbon conversion factor to estimate $MAIC_{HW}$) was taken from small Fijian research project (Waterloo, 1994). The uncertainty was assumed form expert judgement.

Using the MC method, the confidence interval around estimates of emissions and removals from each REDD+ activity was calculated and is presented in Table 12.5 below.

Table 12-5: Uncertainty assessment of emissions and removals

Activity	A	B*	C*
	Estimates [$tCO^2e\ yr^{-1}$]	Lower Confidence Interval [$tCO^2e\ yr^{-1}$]	Upper Confidence Interval [$tCO^2e\ yr^{-1}$]
Net Emissions/Removals			
Deforestation	2,696,831	2,143,830	3,373,850
Forest Degradation	310,442	321,925	467,501
Enhancement of Carbon Stocks	-1,370,469	-960,855	-1,791,358
Sum (FRL)	**1,636,804**	**953,458**	**2,444,030**

*Emission and removals listed in column A will sum to the bolded figures listed as 'sum'. The confidence intervals do not sum in columns B and C, as they are the result of multiple Monte Carlo simulations where values are sampled at random from the input probability distributions for each variable.

Uncertainty allowance for emission reductions

During monitoring events, ER and associated uncertainties will be calculated using this same Monte Carlo methodology as adopted for the FRL. At each monitoring event, the form and bounds of the PDF's will be re-assessed to ensure they remain valid. It is unlikely that the PDFs will change for emission factors, however PDF's for some Activity Data parameters are likely to be revised as improvements are made through the National Forest Monitoring System to the remote sensing analysis techniques resulting in reduced confidence intervals and lower associated uncertainty.

Following the subtraction of the reported and verified emissions and removals from the reference level, the number of ERs to be set aside in the buffer reserve will be estimated in a two-stage process.
The uncertainty of Deforestation and Enhancement of Carbon Stocks (Afforestation / Reforestation) will be aggregated to produce one level of uncertainty to the ERs produced from these two activities. The appropriate conservativeness factor from the Indicator 22.2 table within the Carbon Fund Methodological Framework will be applied to the aggregated ERs from the two activities.

Emissions from forest degradation by selective logging in Natural Forest, Emission/Removals from Enhancement of Carbon Stocks (Forest Plantations) and Fire in Softwood Plantations are both estimated with proxy data. Therefore, the ERs generated from these two activities will be aggregated and a general conservativeness factor of 15% will be applied following Criterion 22.2 of the Carbon Fund Methodological

13 GHG EMISSION REDUCTION ESTIMATES OF ER-PROGRAM

13.1 Ex-ante estimation of GHG emissions reductions

For the five-year ER-PA period of 2020-2024, the ex-ante reduced emissions and increased removals are estimated at **3.5 million tCO_2e**. **This represents a 43% reduction from the Business as Usual predicted in the FRL.** The contribution from each REDD+ Activity is presented in Table 13-1.

Following methodological framework Criterion 22.2. and 22.3[31] and taking into account the ER Program Buffer guidelines, a conservativeness factor of 8% of emissions and emission reduction due to deforestation and afforestation/reforestation and 15% conservativeness factor for the emission reduction due to forest degradation and forest plantation (using a proxy approach) was applied.

The reversal buffer (as quantified in Chapter 11 and 12), was estimated at 26%. By deducting set aside ex-ante emission reduction, the **net ex-ante estimated emission reductions and removals are approximately 2.25 million tCO_2e over the period 2020-2024 (annual average: 0.44 million tCO_2/year).** All key assumptions are further described in the subsequent sections.

The quantification approach is fully consistent with the estimation of the FRL emissions and removals. The same emissions factors were applied for all activities. Key assumptions were based on estimated changes of the emission and removals compared to FRL. The areas impacted by the interventions and all assumptions used as the basis for the estimation are outlined in Section 4.4 and Annex 4.2.

[31] Criterion 22: 2. Set aside a number of ERs from the result of step 1, above, in a buffer reserve. This amount reflects the level of uncertainty associated with the estimation of ERs during the Term of the ER-PA. The amount set aside in the buffer reserve is determined using the following conservativeness factors for deforestation:

Aggregate Uncertainty of Emissions Reductions	Conservativeness Factor
≤ 15%	0%
> 15% and ≤ 30%	4%
> 30 and ≤ 60%	8%
> 60 and ≤100%	12%
> 100%	15%

For estimated emissions reductions associated with degradation, the same conservativeness factors may be applied if spatially explicit activity data (IPCC Approach 3) and high-quality emission factors (IPCC Tier 2) are used. Otherwise, for proxy-based approaches, apply a general conservativeness factor of 15% for forest degradation Emission Reductions

3. Set aside a number of ERs in the ER Program CF Buffer or other reversal management mechanism created or used by an ER Program to address Reversals.

Table 13-1: Ex-ante GHG emissions reduction and removals of the ER-Program

	A	B	C=A-B	D	E=C-D
ER-PA term year t	**Forest Reference Emissions level (tCO_2e/yr)**	**Estimation of total ex-ante emissions (incl. removals) under the ER Program (tCO_2e/yr)**	**Gross estimated Emission Reductions**	**Expected set-aside to reflect the conservativeness factor and risk of reversals (tCO_2e/yr)**	**Total Estimated Net Emission Reductions /carbon removal benefit (tCO_2e/yr)**
2020	1,636,804	1,081,113	555,691	160,098	395,593
2021	1,636,804	1,092,686	544,118	156,975	387,143
2022	1,636,804	824,884	811,920	231,046	580,874
2023	1,636,804	836,457	800,347	227,923	572,424
2024	1,636,804	826,353	810,451	231,854	578,597
Total 2020 2024	**8,184,020**	**4,661,493**	**3,522,527**	**1,007,896**	**2,514,631**
Average annual (2020-2024)	**1,636,804**	**932,299**	**704,505**	**201,579**	**502,926**

13.2 Ex-ante estimation of GHG emissions reductions by REDD+ Activity and Program Intervention

The estimated ERs are presented by each REDD+ Activity (Table 13-2). Section 4.4 and Annex 4-2 detail the assumptions (i.e. activity data changes) resulting from the intervention which are used in the estimation of the emission reductions (ERs).

Table 13-2: Estimated ex-ante emissions reductions by REDD+ Activity

ER-PA term year t	Deforestation	Forest Degradation	Enhancement - Plantations	Enhancement – AR	Total
2020	320,916	77,247.11	105,449	52,079	555,691
2021	320916	77,247.11	105,449	40,506	544,118
2022	567,775	109,763.54	105,449	28,933	811,921
2023	567,775	109,763.54	105,449	17,360	800,348
2024	567,775	131,441.16	105,449	5,787	810,452
Total ERs	**2,345,156**	**505,462**	**527,246**	**144,663**	**3,522,527**
Uncertainty	187,612	75,819	79,087	11,573	354,091
Non Permanence Buffer	445,207	88,657	92,477	27,463	653,804
Net ERs	**1,712,336**	**340,987**	**355,681**	**105,627**	**2,514,631**

Table 13-3: Estimated ex-ante emissions reductions by REDD+ Activity

Intervention	2.1 Sustainable Management of Native Forest	2.2 Afforestation / Reforestation	2.3 Community Planting	2.4 Agroforestry and alternative livelihoods	2.5 Forest Protection	Total
2020	28,147	80,030	52,079	74,058	246,858	**481,172**
2021	28,147	114,818	40,506	74,058	246,858	**504,387**
2022	28,147	185,980	28,933	74,058	493,717	**810,834**
2023	28,147	223,863	17,360	74,058	493,717	**837,144**
2024	28,147	287,281	5,787	74,058	493,717	**888,989**
Gross Total	**140,737**	**891,971**	**144,663**	**370,288**	**1,974,868**	**3,522,527**
Uncertainty	21,110	133,796	11,573	29,623	157,989	354,092
Buffer Allocation	24685	156,449	27,463	70,296	374,911	653,804
Net Total	**94,941**	**601,727**	**105,627**	**270,369**	**1,441,967**	**2,514,631**

14 SAFEGUARDS

14.1 Description of how the ER Program meets the World Bank social and environmental safeguards and promotes and supports the safeguards included in UNFCCC guidance related to REDD+

14.1.1 Environmental and Social Safeguards Triggered by the ER-P

The ER Program is expected to trigger the following World Bank Operational Policies/Bank Procedures (OP/BPs): related to Environmental Assessment (OP/BP 4.01); Gender and Development (OP/BP 4.20), Natural Habitats (OP/BP 4.04); Pest Management (OP 4.09); Indigenous Peoples (OP4.10); Physical Cultural Resources (OP/BP 4.11); Involuntary Resettlement (OP/BP 4.12) and relating to Forests (OP/BP 4.36). Operational policy relating to Gender and Development (OP/BP 4.20) provides a cross-cutting approach needed to ensure the social inclusiveness of projects wholly or partially financed or supported by the World Bank.

14.1.2 Strategic Environmental and Social Assessment/Environmental and Social Management Framework (SESA/ESMF) Process

A national SESA has been conducted to include interventions (and is in the process of being updated) in the ER Program area with the key objective of integrating environmental, social and gender considerations at an early stage in REDD+ program design, and this helps to ensure compliance with the World Bank's applicable safeguards. The draft SESA has been presented to the REDD+ Unit (MOF) for comment and the final advanced draft is expected by 31 May 2019 after which a Validation Workshop will be held in Suva, Fiji to provide an opportunity for the Safeguards Working Group and other stakeholders to provide input. An ESMF and an RPF, as outputs of the SESA process currently being drafter will provide a framework for managing and mitigating the environmental and social risks and impacts of future REDD+ investments (projects, activities, and/or policies and regulations) associated with implementing a REDD+ program. The ESMF and RPF will provide a direct link to the relevant safeguard policies and procedural requirements of the World Bank. The draft ESMF and RPF are expected by 31 May and will also be subject to consultations during the Validation Workshop. The Final SESA and final safeguards instruments (ESMF and RPF) will be ready by the end of July 2019.

As part of the SESA and focusing in the ER Program area, intensive and extensive work has been undertaken to meet the World Bank and UNFCCC social and environmental safeguards and this has included consultations, and both quantitative and qualitative socio-economic assessments. The SESA process comprised two main diagnostic parts: 1) A qualitative assessment and consultations on environmental, socioeconomic and institutional structures in the ER-P provinces of the three main islands of Fiji; and 2) a quantitative survey of 14 villages focusing on forest dependence, poverty and livelihoods of both traditional landowning and leasehold households in the proposed ER-P accounting areas of the three islands (Viti Levu, Vanua Levu and Taveuni). Consultations are discussed in Section 5.

The SESA assessment shows that the ER-P area is not uniform, but can be demarcated into upland and lowlands with varying socio-economic, agronomic and climatic differences across the three islands. Much of the upland farming systems used mostly by iTaukei are often in relatively fragile areas, where good agricultural land is in short supply, the land is more likely to be steeply sloping, the rural communities are generally resource poor, and food security and poverty are the important issues. Many communities have very limited opportunities for expansion or the intensification of agriculture, and a developing coping strategy is wage employment and out migration. In the ER-P area along the northern coast of Viti *Levu* rural livelihoods range from a reliance on subsistence farming of crops such as vegetables (cabbage, beans, carrot, okra, eggplant, chilies, bele, rourou, and some maize) and traditional subsistence crops such as banana, cassava, different types of taro and some yam. In the Western Division of Viti *Levu* sugarcane farming and livestock rearing are also important together with different fruit tree crops. At higher altitudes the livelihood systems are like the northern coast of Viti Levu. In northeastern Vanua Levu, where 59.0% of the population is Non-iTaukei and 61.2% of households lease land from the TLTB there is considerable rice cultivation at lower levels coupled

with livestock rearing, but many households at higher altitudes that are forested derive livelihoods from traditional upland subsistence crops but also from freshwater eels and prawns. On the island of *Taveuni* upland livelihood systems are focused on taro, and kava on the high slopes and cassava and bananas on the lower slopes. The SESA provides a comprehensive analysis of the important social issues of concern and a summary of those identified issues is provided below and these are then addressed in the Section 14.1.5 onwards.

Summary of the quantitative/qualitative assessments of socio, economic/poverty profile Indigenous Peoples issues

Section 3.2.5 summarizes the iTaukei community structures and values and an overview of forest dependency. Section 4.4 details land tenure in Fiji. In the ER-P area, it is mostly indigenous iTaukei communities that live in the largely upland districts and villages that also have higher percentages of land classified as forest. The non-iTaukei communities are more likely to be allocated in areas where deforestation and forest degradation has occurred to a greater extent than in upland iTaukei villages.

The exception to this is the coastal iTaukei communities who also have access to mangrove forests (although not ownership of these) and forest land of lesser quality.

According to the WB estimate of poverty in Fiji, the iTaukei constitute 61.1% of households living in poverty in 2013-14 compared to non-iTaukei households with a poverty rate of 39.0%.The WB estimates demonstrate that overall poverty rates have increased by approximately 1.5% for both groups since 2002-03 but this is also because the income poverty line is now defined in the context of Fiji as US$3.10 per day on a per-capita basis. Poverty is lowest in the Northern Division at 15.9% and highest in the Central Division at 42.5% and unlike other developing countries there is a minimal difference of only 1.6% between urban and rural communities. But these estimates do not capture dimensions related to social exclusion and vulnerability which may be important factors in indigenous people's poverty, especially women's, children's and the elderly. See Section 3.2.5, Figure 3-4 and Table 3-1, Table 3-5 for the distribution of the indigenous peoples by provinces.

Fiji via its initial National Poverty Alleviation Strategy launched in 2007 has a range of programs including the Fiji 2020 Agricultural Sector Strategy that includes support for agricultural marketing, input subsidies, land clearance, farm mechanization, rural agricultural development program, crop extension report and support to the dairying industry. Some of these programs, especially land clearance, crop extension and rural infrastructure have the potential to impact on forested areas even if they are designed to contribute to poverty alleviation. In the forestry sector support is being provided for linking improved livelihoods with sustainable forest management in at least two ER-P sites (Tomaniivi on Viti Levu and Delaikoro on *Vanua Levu*). There are also a range of poverty alleviation programs in housing, social welfare and gender empowerment. It can be noted that such programs have been accelerated since the destructive impact of Cyclone Winston in 2016, where the GoF quickly concluded there were very important links between addressing the challenges of climate change, lack of rural resilience and social protection. However, it can be noted for the most part that the forestry sector was relatively unscathed compared to coastal agricultural areas.

Forest Dependency, Use of NTFPs and Livelihoods

The rural iTaukei households living on the ER-P islands rely on the forests to a significantly greater extent than the rural non-iTaukei households. Based on a quantitative assessment of forest-dependency on the island of Viti Levu household dependency among the iTaukei exceeds 50% (at elevations below 500 MSL) and can be as high as 85% (at elevations above 500 MSL) whereas for Non-iTaukei-iTaukei household dependency is generally between 20% and 35%. On Vanua Levu forest dependent iTaukei households are lower at an average of 40% compared to 15% for non-iTaukei. Whereas on Taveuni the average dependency is approximately 35% and negligible for non-iTaukei. The iTaukei as customary owners of the forests are permitted to legally log indigenous trees for commercial purposes but non-iTaukei as leaseholders are not legally permitted to log these trees for such purposes unless it has been stated in the lease condition, but they can log non-indigenous species such as pine. In relation to NTFPs there are no restrictions and non-iTaukei can seek permission from the Mataqali to harvest NTFPs although to hunt for wild pigs and fish in the streams passing through customary land this is more difficult in the view that these NTFP are reserved for iTaukei sustenance. Most of the NTFPs collected are for self-consumption but some NTFPs such as wild yam, kava,

medicinal herbs and fruits are also sold on local markets. However, few households can derive sustainable livelihoods simply from the harvesting of NTFPs.

Nevertheless, there is a clear trend that the poor are more likely to collect NTFPs than the non-poor, using a higher share of the collected NTFPs for their own household consumption. At present apart from non-iTaukei rural households living near forest land under customary land tenure there is not a problem with "outsiders" exploiting NTFPs nor it seems involved in "illegal" logging (this being defined as encroaching on Mataqali land). Coastal communities are known to harvest mangroves on State land for subsistence purposes (e.g. construction and firewood) but are not allowed to sell NTFP collected from mangroves.

Sacred forests are symbolically important to the owners of customary land. For instance, rituals associated with the confirmation of social hierarchy and power structures such as offering the first wild harvests of the year to the chiefs in recognition of the bounty of the goods are important in traditional Fijian indigenous culture. They are of important cultural significance to households on the ER-P islands although there appear to be fewer instances of this occurring nowadays based on consultations undertaken for the SESA. As for non-iTaukei sacred forests assume no important cultural symbolism.

Ethnicity of a household does not wholly explain poverty in the ER-P accounting area although as explained above and in more detail in the SESA the indigenous iTaukei are more likely to be living in poverty than either the non-iTaukei group or other smaller indigenous groups. However, for non-village based waged employment available to villagers without education beyond primary schooling (75% of males 71% of females) some of the highest paid jobs exist in the sawmilling and logging industry and mining and quarrying. Non-iTaukei have more income-generation opportunities than the iTaukei through the small and medium enterprises they are involved in.

The iTaukei are more likely to have very small businesses (often roadside stalls) and/or to be employed by non-iTaukei wholesale and retail traders. In relation to cash income the iTaukei derive a greater percentage of their income from whatever upland crops they sell (65%) and livestock (35%). Some of these households also derived income directly from the provision of tourism-based goods and services but it is difficult to quantify what percentage of households and within these households what percentage of their household income is derived from the provision of such goods and services. Rural non-iTaukei derive 50% of their income from sugarcane production, 35% from other crops, and 15% from livestock. However, increasingly many households both iTaukei and non-iTaukei are relying on a portion of incomes that at least one household member is either earning in the peri-urban and urban non-land-based sector and in some instances from remittances sent from abroad.

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Land tenure and access to resources in the ER-P area

Land tenure, access to resources and livelihoods have been cited as the most important social issues identified through the SESA and quantitative survey with relation to the implementation of REDD+ activities in the ER-P area. Comprehensive assessments and analyses undertaken during the SESA process highlighted that REDD+ interventions in the ER-P will focus on often difficult to access rural villages in upland areas. Despite Fiji's seemingly abundant natural food resources many households in these villages are vulnerable to food shortages due to natural disasters (e.g. drought, cyclones and floods). For communities more dependent on land-based agricultural and forest land, problems associated with accessibility and lack of capital impact upon being able to sustainably use forest resources to meet livelihood needs. This often results in securing logging licenses for timber harvest. Coupled with insufficient management capacities on the part of the Mataqali (landowning unit) such communities are often substantially dependent on land and forest resources to meet even the most basic livelihood issue associated with household food security.

Therefore, any interventions, which affect land availability, for agriculture or community-based forestry or NTFP harvesting could exacerbate existing poverty, food insecurity and vulnerability to climate change and lead to negative impacts on rural upland livelihoods. There are safeguard concerns that ER-P conservation and reforestation interventions could lead to situations where individual households may experience involuntarily resettlement issues such as losing access to productive land (particularly lands which are customarily used)

and/or access to natural resources. The ER-P safeguard processes for avoiding, minimizing and otherwise mitigating or compensating for the loss of land and resource access restrictions.

Land Problems and Disputes

Lack of land is not a real problem in the ER-P area although the increasingly poor quality of land is an often-cited problem. Land that has been cleared of its natural forest cover either as a result of controlled logging or illegal logging is typically of poor quality although crops of very high value, notably kava, with chemical inputs (notably Paraquat aka Roundup) grow very well. Other crops such as taro have decreased in yield although cassava is holding its own. If there are any major problem, it is lack of water for agricultural purposes during the dry season and too much water during the wet season. The sustainable management of water is increasingly becoming problematic. One of the reasons why the diminished quality of land is not a major problem is that villages are being depopulated as younger people gravitate to urban and peri-urban areas.

However, land disputes while not frequent in the ER-P area are becoming more common in some of the villages. The major dispute relates to illegal encroachment by Mataqali from one village on the land of Mataqali from another village that belong to a different clan, but the actual dispute is exacerbated by unclear demarcation of traditional boundaries. Lack of cadastral surveys of forest land belonging to Mataqali by the TLTB has exacerbated this problem. Illegal logging has been mentioned in 20% of villages surveyed for the SESA but this activity is also associated with unclear boundary demarcation.
In a smaller number of villages constituting 6.5% of villages surveyed villagers cited the link between illegal logging and forest fires: such illegal loggers (whose identities are often known but appear to be “untouchable”) have no stewardship over the forests that they log (a complaint that some villages consulted have made). There are also disagreements in over 30% of villages with livestock surveyed with the Forestry Department because local villagers want to graze their livestock (horses and cattle) in the forests and are told this is unsound for the sustainable management of existing forests. Over 50% of villagers that also complained about illegal logging also complained that most benefits from the forests, especially the capture of value, accrue to the government, businesses and “political elites”. The settlement of disputes is discussed in Section 14.3.

Customary rights

The land tenure arrangements in Fiji are explained in Section 4.4. Most of the land in the ER-P Accounting area is owned by iTaukei and cannot be sold or in alienated.
All people residing on native land are either landowners or tenants who have the permission of the landowning clan. Residents on native land have either formalized status through legal lease arrangements with the TLTB or have informal (Vakavanua) agreements with the landowning Mataqali.

The Agricultural Landlord and Tenant Act (ALTA) governs all agricultural leases of more than 1 ha and the relations between landlords and agricultural tenants. Minimum 30-year and maximum 99-year leases are allowed with no right of renewal. In practice, most leases are for 30 years. In the event of non-renewal, the tenant must vacate the land after a set grace period. The maximum annual rental is 6% of the unimproved capital value. In theory, the rental rate is reviewed every five years. The tenant can claim compensation for all development and improvements of the property with claims determined by the Agricultural Tribunal. Tenants can, however, they can only be compensated for improvements if the TLTB has granted prior approval to these improvements. In practice, there is a fixed schedule of lease rental rates under the ALTA, which has not been updated since 1997. The TLTB, however, has introduced a lump sum payment to induce landowners to lease their land for an additional 30-year period.

The ALTA was supplemented by the 2009 Land Use Decree No.36 (2010) in recognition that the requirement for tenants to vacate land once the fixed lease and grace period had expired causes both social and economic hardship. Government therefore amended the land laws to increase the flexibility of leases and to facilitate leasing of lands, which are currently idle or unutilized, under terms and conditions intended to be attractive to both the landowners and tenants. The Decree provides for longer tenure leases (up to 99 years) for agricultural and commercial development. Native Reserve land is not leased but legally reserved and set aside for the sustenance of *Mataqali* members.

Community Forest Management and Forest Land Allocation

Forest land allocation is not an issue in Fiji because of customary land rights and the State has never been able to allocate forestry land. Forest land belongs to Mataqali and only the Mataqali can allocate forest land to non-Mataqali members, including commercial operators, through leases facilitate by TLTB. To date there are few instances of these communities allocating forest land to other users although at present there are several proposals to allocate forest land in the form of concessions to concessionaires who agree to sustainably log forests in accordance with Fiji's own laws on sustainable logging. But it is not the state that would be allocating this forest land but the Mataqali albeit with the TLTB facilitating such an allocation.

Despite the customary land rights of the iTaukei communities, community forestry management according to recent studies and consultations for the SESA suggest that the processes are not socially inclusive with women being relegated to lesser and insignificant roles by the male leadership in many villages. This is largely due to the patrilineal nature of Fiji's indigenous culture. However, if the five most important uses of the forests are considered (fishing, planting, foraging or gathering, hunting and timber extraction) individual households manage their own subsistence activities to meet household food consumption needs and where there are surpluses also to exchange with others for a range of goods and services although more recently seeking to be paid cash via trading intermediaries.

In native forests, timber extraction or logging for commercial purposes is collectively discussed as against for individual household or community cultural needs are generally managed by the community leadership who interface with commercial logging entities. Decisions made in this sphere are not subject to any real input by the whole of the community even though the Mataqali with ownership of the forest resources is supposed to receive royalties paid distributed to all members on an equal basis. Commercial logging of forests in Fiji began in 1924 (although logging commenced in the 19th Century during the early colonial epoch) Companies logged during the dry season and constructed roads to upland villages where in the past they did not exist (one of the community benefits according to logging companies involved: the other was waged employment for village males who were basically living outside the monetarized economy of urban Fiji and commercial sugar cane production).

Although there were significant disadvantages as explained by older villagers during consultation (caterpillars or even draft animals used to drag the felled logs to local sawmills or logging trucks destroyed much of the vegetation in the forest where logging was taking place and generally landslides during the wet season became more frequent) logging production from native forests peaked in the 1980's followed by steady decline to date. Longer term, as explained below the social impacts were in some instances quite negative and contributing in no small part to a demise in the social cohesiveness of traditional village society. Logging of non-indigenous species began in 1983 with the commencement of logging operations by Fiji Pine Limited.

Subsistence logging for use in foundation and wall posts for houses, floors for individual houses, and community purposes often involved all males in the village working together and trying to choose trees in such a manner that NTFPs would not be destroyed, watersheds would not be compromised, and landslides would be averted. Unfortunately, it appears that in many villages this traditional approach to forest resource management has been undermined to a significant extent. Consultations with many villagers suggest that the cumulative impact of commercial logging and more recently even the more traditional subsistence logging methods have resulted in the need to travel further into the forests to look for wild vegetables, taro, firewood and timber. It has also been observed that there are fewer medicinal and other useful plants that were once available much closer to the village settlements and this impacts more so on women than men. Also, in the water bodies (rivers and streams) prawns, eels and fish are in significantly shorter supply as a result of increased flash floods caused by logging and subsequent deforestation.

It appears that the social costs of logging on the cohesiveness of local communities have been quite high. While older people argue commercial logging brought short-term monetary benefits there was no program to reforest their forest land. Additionally, the revenue received from logging was not for the most part reinvested in sustainable livelihood activities either on a household or community basis. In many households there was

an increase in alcoholism, over-use of kava, domestic violence, and unwillingness to focus on sustainable forms for forest management. There have been general observations that the spiritual importance of the forests has dissipated to a significant extent with the advent of monetary benefits via the payment of logging royalties, even when after 2010 people were to be paid on an equal per capita basis. Finally, with deforestation came degradation as many households turned to convert forest land into agricultural land for the cultivation of crops including kava, taro and cassava.

Gender Issues, Women and Forest Land Use Rights

Fiji is a signatory to the Beijing Declaration for Action and Gender Equality of as reflected in the National Women's Plan of Action (NWPA), the Road Map for Democracy and Sustainable Socio-Economic Development 2011-14. Gender Responsive policies as reflected in originally the MDGs and more recently the SDGs have been taken on board by the GoF. However, there were originally no specific references to gender and forestry issues but only gender and agricultural issues. It is only as recent as early 2018 have there been movers afoot to ensure gender responsive actions (building upon existing forestry-related women's networks, capacity building for technical training and gender mainstreaming and more effective coordination between the MOF and other ministries).

The Gender Inequality Index of the UNDP reflects gender-based inequalities in three dimensions: reproductive health, empowerment, and economic activity. Fiji scores 0.418 on the 2014 index and ranks 87 of 188 countries, better for example than Samoa (97) and Tonga (148) and better than the indigenous Aboriginal women in Australia (122). According to the World Economic Forum (2015) Fiji scores 0.65 in the Gender Gap Index and ranks 121 of 145 countries. Its ranking has been declining since 2009. In terms of the sub-indexes, Fiji ranks the lowest (129) in women's economic participation and opportunity. Only 42% of women are engaged in the formal labor force compared to 82% of men. However, for women participating in the labor force Fiji is the only South Pacific Island state that provides for paid maternity leave for women (up to 90 days).

Women's wages are only 75% of men's in the same sector although Fijian women with higher educational qualifications fare considerably better (this excludes most women currently residing in villages that are dependent on the forests to some extent). But women do have very high unemployment rates and constitute 75% of unpaid home workers. Women also work up to 30% longer most days although men do not consider domestic work to be work per se but rather the duty of women. Nevertheless, the legal marital property regime in Fiji does recognize the non-monetary contribution of women to the household. Women as iTaukei members have equal right to the ownership of customary land and receive leasehold and logging royalties alongside men.

In most rural communities, women are involved in collecting NTFPs such as herbal medicinal plants, ornamental plants and forest food such as wild ferns. They are also involved in selling fruits, vegetables and root crops as mentioned above. Men typically are involved in animal husbandry (although women are also involved with small livestock such as poultry), staple root crop cultivation, vegetable gardening, fishing, collecting firewood, hunting wild pigs, bats and pigeons and sugar-cane farming in districts where sugar is cultivated on Viti Levu and Vanua Levu. In recent times, given the patrilineal nature of the Fijian kinship system, post-marital residence where newly married women typically go and reside in their husband's village, according to the findings of the SESA these women (referred to as "local expatriates") appear to be more innovative than older women who have resided for longer periods in the village. It is these "local expatriate" women that have embraced the cultivation of high-value kava far more enthusiastically than older women. But it may well be that older women still place significant value on natural resource conservation. Given Fiji's patrilineal systems, women cannot accrue economic benefits (dividends from land lease and similar pay-out) from their husband's land but will maintain their rightful share to rental payments for leasing land and royalty payments from their Mataqali / villages of birth and for the payment of carbon benefits that are result-based ostensibly the same procedures may be subject to a degree of ambiguity. This would be addressed in the benefit sharing section

The gender division of labor is not pronounced except in the areas of hunting in the forests and logging. Men claim they undertake the more physical and demanding activities, but during village level visits the SESA Team

observed that women are also sometimes involved with physically more demanding tasks and for activities such as firewood collection. It could be argued that in many respects most of the gender-productive roles outside of the domestic sphere are quite complementary.

Cultural systems in the iTaukei community may render women to be largely invisible with most public decision-making processes even if they are invited to be physically present. This is even a more significant issue for the estimated 12.5% of village households headed by women (latter live on average six years longer than men). Nevertheless, women do have a strong network of association across Fiji such as the Soqosoqo Vakamarama with affiliated women's groups in all local Village Women's Associations. The Women's Association focus on women's reproductive health, schooling for their children and economic empowerment and more recently have been heavily involved as the Chair of the REDD+ Civil Society Organization (CSO). At the village level, the Women's Association form a Committee that is a subcommittee of the Village Development Committee. The Women's Committee are required to report to the wider village meeting which in most iTaukei villages are held twice a month. The village meeting is Chaired by the Chief with the village headman, the Secretary. The village headman submits monthly reports to the Provincial Council Office which includes issues raised by the Women's Committee at the village meeting. Despite the strict customs and traditional norms, women have avenues to raise concerns and contribute to the greater good of the society.

For non-iTaukei communities the leader of the community is selected by community consensus and typically the person selected is a male. This person facilitates the implementation of interventions and initiatives for the community. Leadership is mixed ethnic communities is usually decided via dome form of electoral process. At the same time, Women's Associations under faith-based organizations attempt to present a platform for women's voices to be heard. It has been assessed that the voices of women are more likely to be heard in mixed ethnic communities than in homogenous ethnic communities.

During the SESA process women were also consulted about the REDD+ Program and women often had a more realistic approach to how possible carbon financial benefits should be utilized (men were more likely to look at individual payments whereas women were more likely to stress payments that would enhance the collective welfare of the village community). Nevertheless, during joint consultations at the village level the SESA Team also found that men after a good deal of focused discussions on gender issues agreed that REDD+ without the active participation of women would be less than effective. It is acknowledged that women generally have a great knowledge of the forests and their resources, especially NTFPs.

To summarize the substantive gender issues are as follows: 1) women's participation in the management of forests and forest resources is very limited despite their skills, knowledge, and involvement in forestry; 2) there are no proper support mechanisms to enable women's access to credit and markets that would help to facilitate their participation in community-based forest enterprises that would enhance their livelihoods; and, 3) The MOF is still wrestling with approaches that would ensure women's leadership in policy-making bodies and ensure adequate human and financial resources for more systemic approaches to gender-responsive activities. These substantive issues form the basis of gender tagging to ensure that both the GoF is satisfied that the issues are addressed and women benefit and also the WB that is seeking to: 1) quantify the participation of women in the management of forests and forests resources with at least 40% of management positions allocated to women to women at the village level; 2) enhancement of livelihoods and incremental reduction in poverty of women either living in poverty or in danger of moving into poverty by at least 1.5% per annum; and, 3) at least 30% of managerial and technical positions at national, decisions and provincial level related to the ER-P be staffed by women who have either been trained in the type of activities required for the ER-P including safeguards compliance or will receive on-the-job training.

A gender action plan as part of the ESMF has been prepared to ensure that women benefit from ER-P interventions. The action plan includes gender specific indicators to monitor outcomes and impacts of the intervention. In the ER-P Accounting Area there will be capacity building support for women and men, younger people and older people, poor and non-poor or less poor people to receive capacity building support to establish their local network or organizations that focus on the conservation of indigenous knowledge for forest protection, climate sustainable livelihood, enhancing the value chain for their productive farming and collection

of NTFP, and economic development in line with the ER interventions. It is expected that the results from this work will feed into ER-P implementation in the long run.

14.1.3 Legislative regulatory and policy regime for addressing safeguards

The ESMF refers to the main Fijian policies, laws and procedures for social and environmental safeguards in Fiji. The MOF at the national, provincial and district level is responsible for all social and environmental safeguards for the ER-P except for indigenous people's issues which will be the responsibility of TLTB. The ESMF refers to policy gaps between the World Bank and Fiji's social and environmental safeguards.

The two major social gaps between the two sets of social safeguard policies relates to the World Bank requirement that project affected people have their living standards restored to at least pre-project levels and occupiers of land who do not have legalizable land rights (unlikely to be many people in this category although there may be squatter communities in coastal area of Viti Levu and possibly Vanua Levu) are entitled to be compensated for loss of affected land-based livelihood activities Consultation with iTaukei, and Mataqali in particular, is a well-established norm for Government. 'Talanoa' is a traditional word used in Fiji and across the Pacific to reflect a traditional process of inclusive, participatory and transparent dialogue. Dialogue and discourse are traditionally used in Fijian culture to identify and resolve issues and is broadly used across Government agencies to engage with communities, in particular; relating to land-based policies, issues and developments. This process is consistent with World Bank policies but can be strengthened through the ER-P by ensuring inclusivity with all affected parties (women, non-Taukei, commercial operators etc.) and the vulnerable (lease holders with insecure tenure, elderly, youth etc.).

The gap between the environmental safeguard policies of World Bank and GoF environmental policies and laws is limited. The Environment Management Act mostly follows OP4.01 Environmental Assessment however, it does not prescribe social impact assessment and therefore the social impact of development remains weak. The Department of Environment as an institution requires strengthening to adequately assess risks and impacts when preparing EIA terms of reference and reviewing EIA as well as to supervise and enforce environmental permits. Institutional strengthening will be elaborated in the ESMF. Fiji will integrate the ESMF into the ER-P which will increase capacity of the various institutions involved in the interventions to ensure that the World Bank safeguards are followed and complied with.

Institutional arrangements for implementing Safeguards

The national institutional capacity for implementing WB environmental and social safeguards continues to be enhanced. Fiji has robust environmental and social policies, laws and regulations. Furthermore, there are existing legal and regulatory frameworks relating to forest and other sectors that provide good basis for the governance in relation to REDD+. Effective coordination between relevant institutions across sectors and institutional capacity to implement policies, laws and regulations has been challenging and was analyzed during the SESA process with clear recommendations for institutional strengthening. A REDD+ Safeguards Working Group is already in place and has been operational since 2009. This group has done considerable work on assessing social and environmental impacts/risks associated with REDD+. The national REDD+ Unit under the MOF has been working closely with the Safeguards Working Group, Ministry of Waterways and Environment and the National REDD+ Steering Committee will mainstream social and environmental issues in all the analytic work, combined with consultations required for the various activities funded under readiness. Moreover, the borrower has benefited from several capacity building trainings on SESA by the World Bank team since 2015 and their institutional capacity to implement safeguards for this operation to date has been satisfactory.

The **Environmental and Social Management Framework** will identify improvements to implementation arrangements for safeguards across the relevant institutions of Government and specifically the capacity of the REDD+ Unit to supervise the implementation and monitoring of safeguards instruments. Furthermore, the ESMF will provide a program for the GoF to strengthen the country systems for implementing and monitoring safeguards to ensure that the ESMF (including the RPF and RF) and the World Bank policies more broadly are integrated into all activities under the ER Program, regardless of the source of finance. This may involve multiple Ministries with roles and responsibilities for the ER Program, including Ministry of Finance, Ministry of Lands

and Mineral Resources, iTaukei Lands Trust Board, Ministry of iTaukei Affairs, Ministry of Waterways and Environment and MOF. During the preparation of the ER Program the GoF has integrated institutional strengthening and capacity building tasks into the project budget and work plan. The Bank will supervise the safeguards implementation at a systems level as the ER activities are not directly financed by the Bank.

Implementation, Monitoring, and Training.

The institutions for forestry are arranged from the national down to Divisional/provincial and district level. At the national level, the REDD+ Unit in the MOF will be responsible for the supervision of ESMF implementation. The national level REDD+ Unit will coordinate and oversee the safeguards work of the provincial level Program Implementation Units (PIU). Provincial and district levels PIU will be set up and they will be responsible for preparing and ensuring the effective implementation of environmental and social safeguard measures (such as EMPs, social assessments/screen and codes of practice) and regularly liaising with local authorities and communities. The national level PIU will coordinate and oversee the safeguards work of the provincial level PIUs.

The ER-P will support social assessments and EIA. The national level PIU will coordinate and oversee the safeguards work of of the Provincial level PIUs. The ER-P will support social assessment process social assessments and EIA. The social assessment processes associated with the interventions will ensure effective FPIC consultation and disclosure of information related to activities and investments and would identify any safeguard instruments which would apply. In addition, it would identify activities likely to address those threats and would establish a baseline for monitoring the impacts of activities supported by ER-P.

14.1.4 Selected program design activities and measures supporting indigenous peoples

iTaukei are the main beneficiaries of the ER-P as most of the interventions relate to changing land uses and improving resource use on iTaukei land. Most interventions cannot be successfully implemented without the involvement and buy-in of Matagali. Therefore, the achievement of REDD+ objectives in the ER-P context ultimately requires engaging with and motivating Mataqali and leaseholders to change land uses. ER-P supports a number of livelihoods improvement activities (also see Section 4 and Annex 4-2) such as the agroforestry and alternative livelihood interventions. Furthermore, the benefit-sharing mechanism that will be identified through the Community REDD+ Agreement (CRA) process (undertaken by the Divisional REDD+ Working Groups (DRWG) and Yaubula Management Support Team (YMST)). These are expected to contribute through improved livelihoods to local poverty reduction, particularly in the forest areas. This support is intended to balance out the potential loss of access to resources from the protection of indigenous forest on Mataqali land through the CRA process. Highlights of the Interventions that support iTaukei and in summary include the following activities:

Small-scale livelihood activities to benefit poor and indigenous people's households: The ER-P Interventions 4 and 5 will provide support for Mataqali to improve their livelihoods through s community forest planting and alternative agricultural livelihoods that are REDD+ compatible and with forest protection and biodiversity conservation. Such subprojects will be promoted by the MOF, Ministry of Agriculture, TLTB and others. Mataqalis will self-select to participate. The activitieswill depend on local needs and will be linked to the integrated land use planning under Intervention 1. The Benefit Sharing Mechanism for Interventions relating to community-based planting, forest conservation and agroforestry and alternative livelihoods may fund small community development projects such as renewable energy and community halls and may also include financial and non-financial incentives to small holder farmers.

Improvements to sustainable forest management (SFM) **and involvement of the Mataqali**: Intervention 2 and 3 aims to improve site-level sustainable forest management, including more effective forest lease processes for commercial forestry and support for more community-based planting where the benefits will flow directly to the Matagali members rather than leaseholders. The interventions are both 'self-selecting' whereby Matagali will choose to be involved and the approach is participatory whereby the activities can be designed to maximise benefits to the landowners.

Recognizing the economy of scale associated with logging operations, the limitation to proper planning and lack of security in investment associated with short, annual log extraction licenses; TLTB is keen to support Forest Management Licenses as a sustainable means of adopting improves management standards in native forest. Forest Management Licenses is advocated in the Forest Policy 2007 and outlined in the Forest Bill 13 of 2006, currently awaiting the next reading in Parliament. The challenge lies in the willingness of landowner to the concept. It is therefore imperative that awareness and capacity building among landowner be all inclusive of gender and age. Specific capacity building and discourse on community-based forest governance, ecosystem and economic benefits, short and long-term potential gains and losses need to be discussed frankly and openly with landowners. At the same time peer-to-peer exchanges are powerful and impactful means to quickly secure buy-in for improved SFM.

14.1.5 Potential ER-P program impacts and mitigation

A summary of the social issues of concern identified through the SESA's comprehensive analysis is provided in Table 14-1. Important potential social risks include restriction to access to forest resources, land tenure, and food security.

Legitimate concerns remain that effectively achieving REDD+ goals will also require the provision of livelihood support to smallholder farmers so they may be motivated to participate in REDD+/forest protection through improving their agricultural yields and/or incomes without expanding production into forest areas. Long term sustainability and viability at the landscape level necessarily involves an integrated approach at the farm-forest interface. This is highlighted in the actions and interventions around sustainable livelihoods to be implemented under the proposed ER-P. Important potential environmental impacts include conversion of natural forest to plantation, invasive plant species degrading forests and impacts on biodiversity and biodiversity connectivity.

14.1.6 Mitigation of social risks

A summary of the additional social risks and mitigations outlined in the ER-P is listed in Table 14-2.

Table 14-1 Socio-economic impacts and mitigation

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
Component 1: Strengthen enabling conditions for emission reduction			
Subcomponent 1.1 Integrated District Land Use Planning (IDLUP) (To promote more sustainable long-term integrated landscape management)	-Improved land use planning, objective is to reduce conversion of natural forest or reduce degradation of natural forest -The participatory planning process envisaged, may encourage the recording and sharing and handing down of local land and forest knowledge between generations. The reduction or even loss of this transfer between generations is seen as a concern in some communities. -Opportunity to take account of and integrate with the NBSAP objectives and action plans -Expected to cut across sectors, MOF, MoEnv MOA land use, TLTB, Provincial councils, District REDD+, NGOs, CSO	- Potential for reduced access to forest and NTFP resources for forest dependent communities through improvements or changes to forest access through changes in boundaries or access rights - Possible exclusion of poor, remote or vulnerable and potential for gender exclusion issues. - Possible change or impact on livelihood issues due to introduction of a land use plan or changes in current land use and plan that may not follow existing agricultural crop production, i.e. may require investment and change increasing risk to hhs - Possible FGRM issues - Potential for changes to land leasing arrangements with non-iTaukei	-Socio-economic screening collaborative management used to help resolve any boundary issues and ensure access to forest; helps resolve the potential exclusion and gender issues. - If there are any disputes the FGRM process may be used by iTaukei, and non-iTaukei to resolve grievances. - Awareness raising and training on land use planning and involvement of the community and adopting a fully participatory approach - In the unlikely instance where the FGRM process is not successful and where a land use plan is enforced for activities that are inconsistent with the new land use plan, OP4.12 will be triggered. - The assessment of environmental and social risks and any necessary consultations on policy reforms will be undertaken. If any households are affected by being forced to desist from using land for other purposes (e.g. traditional agricultural cropping or livestock grazing) they will be compensated for loss of production and OP4.12 will be used to mitigate possible negative impacts - Free prior and informed consultations need to include iTaukei and non-iTaukei to achieve broad support with all affected parties, with emphasis on inclusion of vulnerable (poor households and communities, remote communities, lease holders (non-landowning households), women and men, youth. - The provisions of OP 4.10 may also apply where necessary and a Process Framework would be followed. -Training on improved crop production and crop diversification

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
1.1.1 Development of Integrated District Land use plans (IDLUP)	- Plans in 20 Districts over life of the program	- As above	- As above
1.1.2 Develop integrated community management plan	- 40 community consultation workshops over life of program As above	- As above	- As above
Subcomponent 1.2. Strengthening forest governance and law enforcement	- Improved protection and conservation of the natural forest - Awareness raising and training on the sustainable use of forest, improved management and forest laws - Improved social awareness of the importance of forests and that they are finite -Awareness training on FFHCOP, SFM, Fire management -Expected to cross cut across sectors MOF and MOA land use, TLTB, Provincial councils, District REDD+ NGOs, CSO	- Similar to above, possible impacts on livelihoods due to changes in crops or land use - Improved governance may not include unfettered or continued access to all forest areas	- FGRM would be introduced and used to help resolve any disputes - Improve transparency, encourage the participation of community in discussing and improving forest management. Ensure that people who agree to participate in the Yaubula Management Support Teams (YMST) are in broad agreement on the need to improve the management of forests as to whether it is necessary to restrict access to the forests and if necessary. no household should be worse off as a result. In such instances OP 4.12 will apply. - Identification of conservation orientated livelihood and sustainable forest use models designed not to impact on natural forest in Protected Areas. However, where households that are negatively impacted are able to secure livelihoods by being offered alternative livelihoods within the provisions of OP 4.12
1.2.1. Raise awareness on revised legal and regulatory framework, strengthen forest law enforcement	- As above; - Establish Forest Care Groups in 20 districts over the life of program	- This activity may result in some risks associated access restrictions - Could result in livestock (horse, goats, cows) not having access to forest - May also result in restrictions on collection of firewood, logging, hunting	- Depends if the laws are more strictly enforced and the status of the forest i.e. a reserve or a protected area. In some circumstance (unlikely) FGRM followed and final option would be OP 4.12

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
1.2.2 Capacity building on forest laws, enforcement and governance at community level	-Awareness raising at District level three trainings per year on carbon enhancement, application of the FFHCOP and land leasing processes - Improved social awareness of the importance of forests	- Women may be excluded - Exclusion of poor, and vulnerable hhs - Possible elite capture - Possible problems in coastal economic zone where high value land leases are to be found	- Use FPIC and need to ensure community consultations with iTaukei and non iTaukei - Matagali and TLTB need to continue to ensure transparency - FGRM would be introduced and used to help resolve any disputes as above final option would be use of OP 4.01
1.2.3. Capacity building on forest law enforcement at industry and trade level	- Two inter agency training per year on forest law - Two trainings per year on reporting process for non-compliance of forest related legislations	- Similar to above at the village level	- Awareness raising and training on proposed processes to be used i.e. FPIC, FGRM and OP4.12
Subcomponent 1.3 Forest information system	- Improved information on status of the forest - Improved forest monitoring providing feedback into planning and management process -Training for MOF staff - Potential to provide linking feedback to the communities managing protecting and using the forests	- Possible gender and poverty issues related to access to forest; - Possible livelihood issues through changes in land use and increased governance -Similar to 1.2 above - Possible miss use of information system leading to elite capture of remaining forest resources	- Similar to 1.2 above - Socio-economic screening, collaborative management helps resolve any boundary issues and ensure access to forest - Improved forest monitoring providing feedback into planning and management process and discussion with local communities through the YMST to improve forest protection and management and agree to designate areas for livelihood related activities including NTFP collection. OP 4.12 will apply. - Aim for forest management plans to improve local ownership, and sustainable approaches to reduce pressure on timber harvesting. Introduce more sustainable management approaches to NTFP collection.
1.3.1. Upgrade Forest information & data base systems	Data and equipment purchase activities	- Not applicable	- Not applicable

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
1.3.2 improved monitoring and reporting to feed forest information system	- As above in 1.3	- As above in 1.3	- As above in 1.3
Component 2: Promoting integrated landscape management			
Subcomponent 2.1. Sustainable natural forest management	- Generally positive, some clarifications of forest natural forest boundaries - Potential for increased transparency where necessary on management of remaining natural forest - Lead Agency: MOF Collaborators: Ministry of iTaukei Affairs iTaukei Lands Trust Board Saw-millers Association NGO, CSOs	- Some possible impacts on livelihoods, i.e. improved conservation of natural forest may not include unfettered or continued access to all forest areas. -This activity may result in some risks associated access restrictions to Forest Management License areas by non-Matagali. - Matagali self-select but may depend of 60% agreement legal principle and this may also be more problematic where different Matagali do not agree on boundaries between the Matagali especially if the boundaries are still imprecise. (Note that TLTB has long experience of resolving boundary disputes and these are normally resolved amicably)	-Matagali self-select to be part of a public private partnership for Forest Management Licenses. Their involvement is voluntary. -Where a problem occurs first recourse would be through the FGRM - Implement collaborative management of natural forests between communities through the YMST improved forest planning and management process and discussion with local communities through the YMST to improve forest protection and management and agree to designate areas for livelihood related activities to reduce pressure on critical forest areas. - If FGRM outcome is not satisfactory OP 4.12 will apply to ensure that involuntary resettlement impacts, such as when boundaries between core and buffer zones are not resolved by the Forest Division and YMST, will be mitigated. - If any non-Matagali households (leaseholders, tenants, squatters) are affected by being forced to desist from using land for other purposes (provided they have legal rights of access) as a result of Forest Management Licenses (e.g. traditional agricultural cropping or livestock grazing) they will be compensated for loss of production and OP4.01 and OP4.10 will be used to mitigate possible negative impacts

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
2.1.1 Land tenure clarification and SFM management planning	-5 agreements between landowners and logging operators approved per year -3 Forest Leases secured per year - Social and economic benefits of having clearer boundary and tenure -Forest owners/ landowners more aware of socio-economic benefits of SFM	- As above	- As above
2.1.2 Implement and Monitor logging aligned to FFHCOP	-10 sites monitored quarterly -Awareness raising - Results disseminated widely to all stakeholders through newsletter and social media -Forest owners/ landowners more aware of socio-economic benefits of SFM	- Potential in remote upland areas that dissemination of results awareness (SESA fieldwork showed that there is limited dissemination of information in remote upland areas)	- A clear communication strategy to ensure dissemination go information etc. This is part of the Readiness Phase and included in Component 1.3.2 of the ER-P - Use other cultural appropriate means, i.e. social media may not work or may not be appropriate with some vulnerable hhs -Where a problem occurs first recourse would be through the FGRM
Subcomponent 2.2 Enhancement of Carbon Stocks	-Generally positive, some clarifications of forest natural forest boundaries -Lead Agency: MOF Collaborators: Fiji Pine Ltd For pine Fiji Mahogany Trust for mahogany	- Generally minor socio-economic impacts expected see review of various models below - Possible gender and poverty issues related to access to forest; - Possible change or impact on livelihoods if restrictions placed on accessing forest for NTFP collection	- Implement collaborative management of natural forests and plantation areas with communities (through the YMST). OP4.12 may apply but this is specific to communities who may face a change in legal or legalizable access to plantation forestland. - To ensure women or other poor and vulnerable groups are not excluded the GAP highlights how it is necessary to ensure full gender inclusion. However, where restrictions are to be imposed restricting access to forests to collect NTFPs and this negatively impacts on women and their households then the provisions of OP4.12 will apply because the impact results in loss of livelihoods. - Provide training on health and safety related to timber harvesting[32]

[32] Health and Safety at work Act (1996)

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
		- Possible health and safety issues related to plantation harvesting	
2.2.1 Investments in reforestation, short and long rotation plantation - pine plantations	-Restocking of pine plantation with 2500ha/yr. - Continued economic benefits of land leases - Continued or improved fire watch/ control -Improved monitoring report by the MOF once a year - Expected to be on existing or extended pine lease	- Access issues on pine leases for NTFPs (already occurring Vanua Levu in some areas33)	- Where a problem occurs first recourse would be through the FGRM - If FGRM process fails, OP4.12 will be triggered
2.2.2. Investments in reforestation, short and long rotation plantation investments - mahogany plantation	-Restocking of logged over mahogany forest plantation at 780 ha/yr. between 2020-2022 -Improved monitoring report by MOF	- Possible health and safety issues if herbicides are used	- Provide training on safe use of herbicides etc.
Subcomponent 2.3. Afforestation and reforestation - restoration of ecosystem services	- Matagali should self-select for activities - Detailed below	- As above	- Where a problem occurs first recourse would be through the FGRM - If FGRM process fails, OP4.12 will be triggered
2.3.1. Implement land owner engagement through Fiji Pine Trust Extension Scheme	-Matagali should self select for activities - Fiji Pine Trust facilitate registration of at least 4 groups in ER-P per year (each group with at least 25ha)		- Where a problem occurs first recourse would be through the FGRM - If FGRM process fails, OP4.12 will be triggered

[33] Fiji Pine Public Notices: "According to the Draft Planted Forestry Policy Statement 2015 the guiding principles 4.3.2 state no natural forest or minor forest produce will be harvested removed or damaged in the development of a new plantation". Fiji Pine prohibits the logging or removal of minor forest products "under any circumstance" from its leases.

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
	-Establishment of 200ha pine woodlot per year		
2.3.2. Community based restoration for 4 million Trees	- Matagali will self-select for activities, encourage community decisions and decisionmaking involving women. - Establish an incremental 400ha per year from 2020 at the baseline of 300ha. -Establishment of 4000ha by year 3 - At least 100 communities/ Mataqali register for intervention - Socio-economics benefits of afforestation/ reforestation	- Possible gender and poverty issues	- Where a problem occurs first recourse would be through the FGRM - If FGRM process fails, OP4.12 will be triggered
Subcomponent 2.4 Promotion of climate-smart agriculture and sustainable livelihoods	- Matagali will self-select for activities - Socio-economic benefits of risk/ and awareness raising of climate change issues - Lead Agency: MOF Collaborators: - Ministry of Agriculture, Kava Commodity Clusters, Fiji Crop and Livestock Association, Kava Association, Famers, NGOS	- Possible gender and poverty issues; - Possible access to forest issues; - Possible changes in land use - Possible social impacts from changes in land use (with some land users no longer able to farm / harvest / collect NTFP).	- Activities should be voluntary and OP4.12 would not be expected to apply provided that the land use plan (or similar) is not enforced or restrictions imposed. In first instance of a dispute FGRM would be used if this fails OP4.12 applies - Benefit sharing plan to be developed but -Matagali would be expected to benefit in one form or another - Selection of alternative livelihood support should be targeted to contribute to reduce forest dependency; Similar to above discussions through the YMST to design best approach that fits with local forest dependency and use and climate smart agriculture that best suits the local area and market conditions - Training on improved crop production and crop diversification, where crops are not agreed to FGRM for example if communities want crops that do not confirm to the land use plan would be used to resolve issues. Depending on the crops and detailed activities or possible enforcement of the land use plan OP4.09, and OP4.12 may apply

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
2.4.1 Implementation of Riparian restoration to mitigate flash floods	- Establish at least 6 sites annually at 300ha per site - 6 Reports of community consultation on traditional species used and preferred species for restoration. - At least 3 field schools for farmer-to-farmer exchange per year - Socio-economics benefits of mitigation of floods	- Possible changes (minor) in land use in some riparian area which could have socio-economic impacts	- Matagali will self-select for activities and therefore their involvement is voluntary - Land will be acquired for this activity, as it will be land already being used by forest-dependent households. If any households are affected by being forced to desist from using land for other purposes the FGRM will be followed (e.g. traditional agricultural cropping or livestock grazing) and where they will be compensated for loss of production and OP4.12 will be used to mitigate possible negative impacts
2.4.2. Afforestation and restoration for ecosystem services	-Establish at least 5 sites annually at 100ha per site -6 Reports of community consultation on traditional species used and preferred species for restoration. -At least 3 field schools for farmer-to-farmer exchange per year - Socio-economic benefits of afforestation	- As above	- As above
2.4.3 Enhanced alternative livelihood and restoration	-As above, could include incentivized climate-smart agriculture and agroforestry -Establish at 200ha of alternative intervention per year -6 Reports of District alternative livelihood intervention -At least 3 field schools for farmer-to-farmer exchange per year	- "Climate smart crops" could add to the burden of the community and especially women farmers if proposed crops (such as vanilla) require extra time and resources or technical training	- This type of activity is unlikely to have any negative impact if a consensus can be achieved at the local level and the program is able to assist impacted or targeted households seek financial assistance. - Careful selection of "climate smart crops" is required to avoid negative impacts and ensure uptake. Particular attention needs to be taken of impact on women.

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
Subcomponent 2.5 Promotion of forest protection to conserve existing natural forest carbon stocks.	- Secure 60% community consensus at each priority site through FPIC process by 2023 - Community awareness raised on the importance of PAs - Socio-economic benefits of watershed protection - These activities unlikely to result in any risk of relocation, land acquisition. - Lead Agency: MOF - Collaborators: Ministry of Waterways and Environment, iTaukei Lands Trust Board, Department of Lands NGOs, CSOs	- Possible changes in land use - Possible gender and poverty issues; - Possible access to forest issues; - Access restrictions by local communities to natural forest may happen if the legal framework is strengthened and forest turned into conservation area	- Similar to above, in the first instance FGRM applies and OP 4.12 will apply if issues cannot be resolved - If any households are affected by being forced to desist from using land for other purposes (e.g. traditional agricultural cropping or livestock grazing) they will be compensated for loss of production and OP4.12 will be used to mitigate possible negative impacts - Biodiversity surveys could be used to refine potential areas - Careful planning and consideration of resources is required for communities
2.5.1. Implementation of natural forest conservation agreement (at the deforestation frontier)	- Secure 60% community consensus at each priority site via FPIC process by 2023 - Socio-economic benefits from the reduction in risk of land degradation or soil erosion	- As above. - This activity may result in some FGRM risks associated with disenfranchisement and access restrictions - Potential to result in changes in levels of income	- Similar to above, in the first instance FGRM applies and OP 4.12 will apply if issues cannot be resolved - If any households are affected by being forced to desist from using this land for other purposes (e.g. traditional agricultural cropping or livestock grazing) they will be compensated for loss of production and OP4.12 will be used to mitigate possible negative impacts
2.5.2 Formalise protection of forest area under the Forest Decree 1992 and other instruments such as the TLTB Act	-Improvements to policy at least 2 Discussion Papers drafted and submitted to Forestry Board per year -Endorse and enforce PA status at least one site per year -Secure at least 1 REDD+ Conservation Lease per year	- As above. This activity may result in some risks associated access restrictions and changes in levels of income	- If any households are affected by being forced to desist from using this land for other purposes (e.g. traditional Sweden agricultural cropping or livestock grazing) they will be compensated for loss of production and OP4.12 will be used to mitigate possible negative impacts

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
2.5.3 Develop and Implement community-based Forest Protection Management Plan based on co-management regime between the Forest Management Enterprise and management body of the Protected Area	-At least 3 Community consultation using Open - Standards and other tools to identify target specifies, key threat and management strategy for protection -2 Forest Protection Management Plan formulated per year	- Possible changes in land use - Possible gender and poverty issues; - Possible access to forest issues; - Access restrictions by local communities to natural forest may occur	- Similar to above, in the first instance FGRM applies and OP 4.12 will apply if issues cannot be resolved
2.5.4 Secure sustainable financing to support the long-term maintenance and upkeep of the forest protected area	-2Community and Stakeholder consultation develop - Business Plan -Secure "seed fund" for sustainable financing of ER-P priorities by 2023		
Component 3: Program management and emission monitoring			
3.1 Program coordination and management	-Support for capacity building and at central Province and District levels, -Improved coordination across sectors and ministries	- Facilitate institutional setup, coordination mechanisms, program implementation manual; - Training programs and Financial Management	
3.2 Monitoring and evaluation (M&E) includes monitoring of safeguards	-MRV plan implemented at national, divisional and provincial levels	Development of effective M&E system that includes training on data collection and reporting on safeguards information	- It is requirement that the RPF be monitored and evaluated to ensure all measures to mitigate The negative impacts of involuntary resettlement are adequately documented
3.3 MRV - Management and processing of MRV activities	-M&E Guidelines, Verification Reports, Communication Materials and Report	- Development of effective MRV data and forest cover information.	

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	Potential negative impact	Mitigation
		- No negative impacts expected	

14.1.7 Mitigations of environmental risks

Table 14-2 : Environmental impacts and mitigation

ER-P intervention to address drivers and enhance carbon stocks (ha)	Activities and potential positive impact	Potential negative impact	Mitigation
Component 1: Strengthen enabling conditions for emission reduction			
Subcomponent 1.1 Integrated District Land Use Planning (IDLUP) to promote more sustainable long-term integrated landscape management	- Improved land use planning is expected to help control the expansion of agricultural land, i.e. reduced conversion of forest - Contributes to improved planning of land use, this would include avoidance of use of steeply sloping land and improved crop selection, and improved planning related to infrastructure planning and development. -Expected to cut cross across sectors, MOF, MoEnv MOA land use, TLTB, Provincial councils, District REDD+, NGOs, CSO	- Possible disturbance of forest/ forest re-growth that could lead to invasive species - Possible changes in land use - Possible gender exclusion in planning process (see socio-economic impacts and mitigation)	- Awareness raising and training on land use planning and involvement of the community adopting a fully participatory approach and ensure that land use planning involves women - Training on improved crop production techniques and crop diversification - In the instance of a dispute the FGRM would be used, however, unlikely that a land use plan would be legally regulated, i.e. adoption of any land use plan would be voluntary and should be beneficial to the community

ER-P intervention to address drivers and enhance carbon stocks (ha)	Activities and potential positive impact	Potential negative impact	Mitigation
1.1.1 Development of Integrated District Land use plans (IDLUP)	- Plans in 20 Districts over life of program - As above	- As above	- As above
1.1.2 Develop integrated community management plan	- 40 community consultation workshops over life of program - As above	- As above	- As above
Subcomponent 1.2. Strengthening forest governance and law enforcement	- Improved forest governance should eventually be generally positive and contribute to protection and maintenance of biodiversity - Development/revision of forest policy and regulation might result in negative outcomes during implementation - Expected to cut cross across sectors MOF and MOA land use, TLTB, Provincial councils, District REDD+ NGOs CSO - Apply FFHCOP - Less forest conversion	- Possible gender and poverty issues related to access to forest - Possible change in access to forest or impact on livelihood issues	- Thorough review of the TORs and outputs of these policy and regulation activities to ensure that potential impacts and mitigation measures are addressed - Improve transparency, encourage the participation of community in discussing and improving forest management; - Improve forest monitoring providing feedback into planning and management process and discussion and local communities through the YMST to improve forest protection and management and agree and designate areas for livelihood related activities - Similar to above on the use and sustainable management of NTFPs - Training on and applying the FFHCOP
1.2.1. Raise awareness on revised legal and regulatory framework, strengthen forest law enforcement	-Awareness training on FFHCOP, SFM, Fire management -Establish Forest Care Groups in 20 districts over life of program - Improved sustainable forest management less forest conversion	- Potential for access to forest issues or impact on livelihood issues	- In the instance of a dispute the FGRM would be used

ER-P intervention to address drivers and enhance carbon stocks (ha)	Activities and potential positive impact	Potential negative impact	Mitigation
1.2.2 Capacity building on forest laws enforcement and governance at community level	-Awareness raising at 3 District level training per year on carbon enhancement, application of the FFHCOP and land leasing processes - Less forest conversion	- Potential for access to forest issues or impact on livelihood issues	- In the instance of a dispute the FGRM would be used
1.2.3. Capacity building on forest laws enforcement at industry and trade level	-2 inter agency training per year on forest law -2 training per year on reporting process for non-compliance of forest related legislations		
Subcomponent 1.3 Forest information system	- Similar to above - Improved information on status of the forest providing feedback into planning and management process -Training for staff at MOF	- Possible miss use of information system leading to elite capture and exploitation of remaining forest resources	-Develop data collection and use protocols that ensure information is available and transparent
1.3.1. Upgrade Forest information & data base systems	- Improved information on forest resources and use	- None foreseen	
1.3.2 improved monitoring and reporting to feed forest information system	- Improved information on forest resources and use	- None foreseen	
Component 2: Promoting integrated landscape management			
Subcomponent 2.1. Sustainable natural forest management	- Improved landscape management and SFM; - Generally positive, some clarifications of forest natural forest	- May impact on high conservation value forest i.e. untouched or high conservation value forest may be	- Biodiversity values should be assessed prior to Forest Management Licences being issues

ER-P intervention to address drivers and enhance carbon stocks (ha)	Activities and potential positive impact	Potential negative impact	Mitigation
	boundaries, some possible impacts on livelihoods, i.e. improved conservation of natural forest, may not include unfettered or continued access to all forest areas. - NTFP over collection should decrease and lead to improved management and should see an increase in the volume and availability - Lead Agency: MOF Collaborators: Ministry of iTaukei Affairs iTaukei Lands Trust Board Saw-millers Association NGO, CSOs	brought under a sustainable/ reduced impact logging approach to SFM	- Strengthen forest governance (law enforcement for forest protection and management (propaganda, patrol, control) - Improve dissemination of forest conversion policy and improvements to land use planning, and policies related to the community as the regulation was developed. - Improve forest monitoring providing feedback into planning and management process and discussion with local communities through the YMST to improve forest protection and management and agree to designate areas for livelihood related activities including NTFP collection and introduce more sustainable management approaches to NTFP collection
2.1.1 Land tenure clarification and SFM management planning	- 5 agreements between landowners and logging operators approved per year - 3 Forest Leases secured per year - Improved SFM	- As above	- Biodiversity values should be assessed prior any logging if that is included in the SFM plan
2.1.2 Implement and Monitor logging aligned to FFHCOP	- 10 sites monitored quarterly awareness raising - results disseminated widely to all stakeholders through newsletters and social media	- As above	- Biodiversity values should be assessed prior any logging if that is included in the SFM plan
Subcomponent 2.2. Afforestation and	-Generally positive, longer-term benefits to habitat improvements if	- Potential for reduction or impact on biodiversity if exotic monoculture fast	- Follow plantation management recommendations conforming to OP 4.36

ER-P intervention to address drivers and enhance carbon stocks (ha)	Activities and potential positive impact	Potential negative impact	Mitigation
reforestation - timber and biomass plantation	native species are used for afforestation leading to improved biodiversity - Possibility of increasing land under forest cover - Possible of regeneration of heavily degraded land/ stabilisation of eroded areas/ reduce soil erosion/ leguminous spp. may be used - Lead Agency: MOF Collaborators: Fiji Pine Ltd for pine, Fiji Mahogany Trust for mahogany	growing plantation trees i.e. if Acacia or Acacia hybrid spp. are used for the biomass plantations - Possible minor habitat damage where enrichment planting occurs; - Impacts would be location dependent, possible minor habitat damage or in exceptional circumstances minor loss of poor-quality remnant natural forest. - Possible increased and or overuse of pesticides/ herbicides for seedling and unintended introduction of invasive species in disturbed areas.	- Biodiversity surveys could assist with identifying values prior to replanting - Careful design of planting to avoid any loss of native spp. - Mixed planting of native species with biomass plantations would help mitigate the biodiversity issues. - Training on the safe use of herbicides etc.
2.2.1 Investments in reforestation, short and long rotation plantation - pine plantation	- Restocking of pine plantation with 2500ha/yr. - Monitoring report by the MOF once a year	- Short rotation plantations need to be managed carefully to avoid undue impact and disturbance	- Careful design of planting to avoid any loss of native spp. - Mixed planting of native species with biomass plantations would help alleviate the biodiversity issues - Encourage longer rotations where possible
2.2.2. Investments in reforestation, short and long rotation plantation investments - mahogany	- Restocking of logged over mahogany forest plantation at 780 ha/yr. between 2020-2022 - Monitoring report by the MOF once a year	- Old method used to develop a mahogany "plantation" was inside logged natural forest where there would be biodiversity and environmental impacts. However, this approach has now been replaced by a more normal approach of replanting in existing or old plantations or on degraded land, where the mahogany would eventually have a beneficial impact.	- Careful design of planting to avoid any loss of native spp. - As previous method no longer used mitigation is similar to any plantation. - Training on safe use of herbicides etc. - The assessment of environmental and social risks may be required if there is a change in land use for example where planting is on degraded land, however, most degraded land is used for new plantations is a grass fire climax with limited biodiversity.

ER-P intervention to address drivers and enhance carbon stocks (ha)	Activities and potential positive impact	Potential negative impact	Mitigation
		- Potential health and safety measures if herbicides are used to protect young seedlings	- Consultations would be required with local Matagali where any new plantation land is leased.
Subcomponent 2.3. Afforestation and reforestation - restoration of ecosystem services	- Generally positive, few impacts expected as the activity mainly focuses on existing plantations (i.e. no new plantations, enrichment planting with native spp. included) and extending and improving management - Potential to improve biodiversity - Possibility of increasing land under forest cover - Possible of regeneration of heavily degraded land/ stabilisation of eroded areas/ reduce soil erosion/ leguminous spp. may be used	- Possible increased and or overuse of pesticides/ herbicides for seedling and unintended introduction of invasive species in disturbed areas.	- Follow plantation management recommendations conforming to OP 4.36 -Implement collaborative management conforming to OP 4.36 and OP 4.04 of natural forests and plantation areas between YMST and communities - Careful design of planting to avoid any loss of native spp. - Depending on the proposed location the activity may require biodiversity assessments as part of process to ensure that there are no impacts on critical natural habitats
2.3.1. Implement land owner engagement through Fiji Pine Trust Extension Scheme	- Fiji Pine Trust facilitate registration of at least 4 groups in ER-P per year (each group with at least 25ha) - Establishment of 200ha pine woodlot per year	- As above	- As above
2.3.2. Community based restoration for 4 million Trees	- Establish an incremental 400ha per year from 2020 at the baseline of 300ha. - Establishment of 4000ha by year 3 - At least 100 communities/ Mataqali register for intervention	- As above	- As above

ER-P intervention to address drivers and enhance carbon stocks (ha)	Activities and potential positive impact	Potential negative impact	Mitigation
Subcomponent 2.4 Promotion of climate-smart agriculture and sustainable livelihoods	- Lead Agency: MOF Collaborators: Ministry of Agriculture, Kava Commodity Clusters, Fiji Crop and Livestock Association, Kava Association, Famers, NGOS	- Limited possibility of negative environmental impacts, for example, not all activities chosen by communities and forest management entities may not be rigorously forest or biodiversity conservation supportive; - Identification of conservation orientated livelihood models designed not to impact on natural forest in PAs	- Identification of livelihood and sustainable forest use models designed not to impact on natural forest in PA s. Example of livelihood activities will be developed and provided in the PIM - Promotion of sustainable use and development of NTFPs in the forest areas - Mitigation measures to be developed and included in the ESMP for implementation Provide training on use of herbicides and pesticides
2.4.1 Implementation of Riparian restoration to mitigate flash floods	- Establish at least 6 sites annually at 300ha per site - 6 Reports of community consultation on traditional species used and preferred species for restoration. - At least 3 field schools for farmer-to-farmer exchange per year	- Unintended introduction of invasive species in disturbed areas	- Careful design of planting to avoid any loss of native spp. - Depending on the proposed location the activity may require biodiversity assessments as part of process to ensure that there are no impacts on critical natural habitats
2.4.2. Afforestation and restoration for ecosystem services	- Establish at least 5 sites annually at 00ha per site - 6 Reports of community consultation on traditional species used and preferred species for restoration. - At least 3 field schools for farmer-to-farmer exchange per year	- As above	- As above
2.4.3 Enhanced alternative livelihood and restoration	- Could include Incentivized climate-smart agriculture and agroforestry	- Unintended introduction of invasive species in disturbed areas	- Careful selection of location specific “climate smart crops” suggests that the program will

ER-P intervention to address drivers and enhance carbon stocks (ha)	Activities and potential positive impact	Potential negative impact	Mitigation
	- Establish at 200ha of alternative intervention per year - 6 Reports of District alternative livelihood intervention - At least 3 field schools for farmer-to-farmer exchange per year	- Possible increased and or overuse of pesticides/ herbicides for crop protection - "Climate smart crops" could add to the burden of the community if they require specific site locations, or increased levels of in puts	need a range of different crops for the wide variety of locations found in the ER-P area - Training on the safe use of herbicides etc.
Subcomponent 2.5 Promotion of forest protection to conserve existing natural forest carbon stocks.	- Improved protection of natural forest through conservation agreements - Secure 60% community consensus at each priority site via FPIC process by 2023 - Improved conservation of natural forest	- Mainly socio-economic issues, potential to lead to increased impact on alternative areas of forest	-Biodiversity surveys could be used to refine potential areas - Careful planning and consideration of resources required for communities - The METT process could be used to help in the management but usefulness is questionable unless there is a management unit for a PA - Similar socio-economic issues, in the first instance FGRM applies and OP 4.12 will apply if issues can not be resolved - If any households are affected by being forced to desist from using land for other purposes (e.g. traditional agricultural cropping or livestock grazing) they could be compensated for loss of production and OP4.12 will be used to mitigate possible negative impacts
2.5.1. Implementation of natural forest conservation agreement (at the deforestation frontier)	- Secure 60% community consensus at each priority site via FPIC process by 2023 - Improved conservation of natural forest	- As above as one area of forest is closed off this may result in increased use or access to alternatives	- As above

ER-P intervention to address drivers and enhance carbon stocks (ha)	Activities and potential positive impact	Potential negative impact	Mitigation
2.5.2 Formalise protection of forest area under the Forest Decree 1992 and other instruments such as the TLTB Act	-Improvements to policy at least 2 Discussion Papers drafted and submitted to Forestry Board per year -Endorse and enforce PA status at least one site per year -Secure at least 1 REDD+ Conservation Lease per year	- As above	- As above
2.5.3 Develop and Implement community-based Forest Protection Management Plan based on co-management regime between the Forest Management Enterprise and management body of the Protected Area	-At least 3 Community consultation using Open Standards and other tools to identify target specifies, key threat and management strategy for protection -2 Forest Protection Management Plan formulated per year	- As above	- As above
2.5.4 Secure sustainable financing to support the long-term maintenance and upkeep of the forest protected area	-2 Community and Stakeholder consultation develop - Business Plan Secure “seed fund” for sustainable financing of ER-P priorities by 2023	- None foreseen	
Component 3: Program management and emission monitoring			
3.1 Program coordination and management	- Support for capacity building and at central Province and District levels, - Improved coordination across sectors and ministries	- None foreseen	

ER-P intervention to address drivers and enhance carbon stocks (ha)	Activities and potential positive impact	Potential negative impact	Mitigation
3.2 Monitoring and evaluation (M&E) includes monitoring of safeguards	-MRV plan implemented at national, divisional and provincial levels - Improved environmental management	- None foreseen	
3.3 MRV - Management and processing of MRV activities	-M&E Guidelines, Verification Reports, Communication Materials and Report - Improved information on forest resources and use	- None foreseen	

14.1.8 Applicable World Bank Safeguard Policies and Safeguard Instruments.

Applicable World Bank Safeguard Policies and Safeguard Instruments. The World Bank OPs/BPs as they apply to this Program are included in Table 14-3 below.

Table 14-3 Summary of World Bank Safeguards that apply[34]

World Bank Safeguard Policies	Triggered	Proposed approach
Environmental Assessment OP/BP 4.01	Yes	The Strategic Environmental and Social Assessment (SESA) has identified two potentially significant environmental impacts including: 1) loss of biodiversity and habitat fragmentation due to conversion of natural forests into plantations of pine by lease holding private sector companies; and 2) possible increase in spread invasive plants if conservation areas are note well managed or agroforestry or NTFP species are introduced without guidance and from underfunding of weed control in protected forests and forestry areas. The Environmental and Social Management Framework (ESMF) will establish the modalities and procedures to address potential negative environmental and social impacts from the implementation activities identified in the ER-PD, including the screening criteria, procedures and institutional responsibilities. The specific processes that will be included in the ESMF are to: 1) establish clear procedures and methodologies for the environmental and social assessment, review, approval and implementation of interventions to be financed under the program; 2) specify appropriate roles and responsibilities, and outline reporting procedures, for managing and monitoring environmental and social concerns related to program interventions; and 3) determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF. The GoF will be required to implement and monitor safeguards across the ER Program in accordance with all Bank Policies and the ESMF, and the Bank will supervise the implementation at the programmatic level. The ESMF will contain relevant institutional strengthening requirements.
Natural habitats OP/BP 4.04	Yes	This policy is triggered as the ER-P will work both within existing protected areas and other forest habitats of varying significance, although it is not expected to involve conversion of critical natural habitats. The ER-PD will provide overwhelming benefits to forest ecosystems in Fiji, however there are residual risks around the spread of invasive species and the conversion of secondary forest and other natural habitats to plantation forestry. The ESMF will include provisions to identify natural habitats as part of land use planning and the environmental assessment process and assess possible impacts prior to actions being undertaken on the ground. This policy will ensure that the interventions in the ER-P area consider biodiversity conservation and critical natural habitats. During the implementation phase, monitoring activities will be established to ensure that avoidance and mitigation measures are adequate and biodiversity and critical natural habitats are not adversely affected.
Forests OP/BP 4.36	Yes	The overall program objective includes reduction of deforestation and forest degradation and interventions are expected to have significant positive impacts on the health and quality of forests. This policy is triggered due to the potential changes in the management, protection, or utilization of natural forests or plantations that could arise from REDD+ and activities may indirectly affect the rights and welfare of people and their level of dependence upon or interaction with forests. The ER-PD include activities affecting management, protection, or utilization of natural forests and/or plantation forests. Potential impacts and proposed enhancement/mitigation measures will be included in the ESMF. Forest management plans are expected to be prepared during implementation
Pest Management OP/BP 4.09	Yes	Agricultural and agroforestry practices supported by activities under the ER-Program may involve the use of pesticides for nursery management and possible crop intensification and invasive weed control. Impacts and risks of any potential use of chemicals in forest management and agroforestry activities, if needed, will be analysed and mitigated through actions contained in forest management plans. The ESMF will provide guidance on development and implementation of an Integrated Pest Management (IPM) which provides

[34] This table updates the 2012 “Integrated Safeguards Data Sheet” prepared by World Bank for the FCPF Grant.

World Bank Safeguard Policies	Triggered	Proposed approach
		principles on prevention, early detection, damage thresholds, and design, mechanical and biological control methods rather than chemical pesticides.
Physical and Cultural Resources OP/BP 4.11	Yes	This policy is triggered as the activities proposed in the ER Program could indirectly affect areas containing sites with physical cultural resources. The indigenous people of Fiji often have close connection with forest areas, including sites of cultural significance and spiritual connections, it is possible that in isolated cases REDD+ activities could interfere with sacred forest sites. Since the Mataqali and iTaukei communities will be involved in the development of activities on their own land, it is very unlikely that there will be damage or desecration of such sites. The ESMF will include 'chance find' procedures and guidance on development and implementation of a Physical Cultural Resources Management Plan
Indigenous Peoples OP/BP 4.10	No	The Emission Reductions Program is likely to generate significant social benefits to include benefits for Indigenous Peoples (iTaukei) since the ER-P program implementation will occur predominately on iTaukei land. An Indigenous Peoples Policy Framework will not be prepared as most beneficiaries would be Indigenous Peoples. Elements of an Indigenous Peoples Policy Framework have been incorporated into the ER-P and will be incorporated into the ESMF and RPF as per the policy. The ESMF will include provisions for ensuring that the design of ER-P activities would integrate the elements of project-specific Indigenous Peoples Plan and will include institutional strengthening activities as necessary to incorporate the ESMF and the requirements of this policy into Fiji's country systems for ER Program activities.
Involuntary Resettlement OP/BP 4.12	Yes	OP/BP 4.12 on Involuntary Resettlement is triggered to ensure affected persons (including landowners, land users and forest dependent communities and/or individuals) are properly consulted and not coerced or forced to accept or commit to REDD+ activities or other forest management/reforestation activities involuntarily, and that best practice approaches as informed by OP/BP 4.12 are adopted. A Resettlement Policy Framework (RPF) will be prepared to prescribe the principles and objectives, eligibility criteria of displaced persons, modes of compensation and rehabilitation, participation features and grievances procedures that will guide the compensation and potential resettlement of program affected persons. The RPF will guide the preparation of site-specific Resettlement Action Plan (RAP). There is low potential for an involuntary restriction of access (for example, NTFPs, fuelwood collection) to legally designated production and protection forest areas and protected areas because the iTaukei land owning units have the power of choice to not engage in the process and the Government of Fiji requires a lease from the land owners in order to create conservation areas. Therefore, there will be full landowner (iTaukei) involvement in the lease process. A Process Framework (PF) is being prepared to guide procedures to identify, assess, minimize and mitigate potential adverse impacts on livelihoods by restriction of access. The PF is to ensure adequate consultations with specific communities in particular the vulnerable lease holders and / or informal forest users who are not part of the landowning unit. Site-specific RAPs and Action Plans for Access Restrictions for activities will be identified during implementation as required. The ER-P includes mechanisms that will help address the underlying problem of inadequate consultations with communities and in particular the vulnerable within and outside the landowning units including through the CRA process with the YMST that require an assessment of impacts and possible mitigation measures to avoid or address potential undesirable effects including a benefit sharing mechanism for natural resources use
Safety of Dams OP/BP 4.37	No	This policy is not triggered as the program will neither support the construction or rehabilitation of dams nor will it support other investments which rely on services of existing dams.
International Waterways OP/BP 7.50	No	The program does not have any investments will be located on international waterways, so this policy is not triggered.
Disputed Areas OP/BP 7.60	No	Neither the program nor related investments will be in disputed areas as defined in the policy.

14.2 Description of arrangements to provide information on safeguards during ER Program implementation

14.2.1 Implementation arrangements and national safeguards information

In addition to the World Bank requirements, Fiji must also comply with the UNFCCC's safeguards principles and requirements. The ER-P's proposed safeguards will be developed in respect of the Cancun safeguards (see Box 14.1 and more information on SIS in section 14.2.4) and to the extent possible the safeguard information system (SIS) currently under development and is expected to be completed in a phased approach over the next three to five years and will be consistent with national REDD+ safeguards approaches and the ESMF. The World Bank's safeguards policies are broadly consistent with the Cancun principles but have more detailed guidance on procedural requirements and Fiji will follow national safeguards approach where possible and where these meets both UNFCCC and WB safeguard requirements. While the SIS is not a requirement of the Methodological Framework collaborative work has been on-going on the SESA, ESMF, and this has extended to include the SIS. The MOF is set to establish a SIS and Summary of Information (SOI) working group (as part of the TWG on Safeguards). The working group will contain NGO and CSOs, members from MOF and other line ministries. The main task is to deliver information and comments for the SIS and SOI's contents during the development process, to support MOF in acquiring the approval from MOF for the SIS and send the SOI to TLTB prior to submission to the UNFCCC.

In recognition that REDD+ activities could potentially lead to various negative impacts on the environment and communities, according to the Warsaw Framework, countries aiming to receive results-based finance for REDD+ must: 1) Implement REDD+ measures in a manner consistent with the Cancun safeguards; 2) Establish a system to provide information on how the Cancun safeguards are being addressed and respected (the SIS); and 3) Provide a SOI on how the safeguards are being addressed and respected throughout the implementation of REDD+. The UNREDD is currently supporting the government to put in place a country approach to addressing safeguards to include the development of the SIS. See 14.2.4 below.

14.2.2 Overview of the ER-P M&E system including safeguard information collection

Progress towards achievement of the program development objectives including providing information on safeguards will be measured through a monitoring and evaluation (M&E) system that will be supported by the ER-P and will be an integral part of the program management and decision-making processes. M&E at higher levels is already developed as a routine function of government agencies, rather than as program-specific M&E. Site based program performance monitoring, also focuses on safeguards ad ensures Forest Wardens and YMST are clear on the channel of reporting for non-compliance. At the same time feed-back and lessons learned shared at REDD+ District Working Groups will facilitate constant upgrading and improvement of reporting safeguard guidelines and procedures.

Performance monitoring will be used to determine the progress in program implementation against established targets (including safeguards) and milestones indicated in the program document and work plans.

M&E will cover both program performance monitoring and effectiveness monitoring and MMR (handled separately - see Section 9) includes community forest monitoring. It is expected that safeguards performance reports will be submitted to the World Bank on a yearly basis. The report will describe program progress and compliance with the ESMF. World Bank will conduct periodic systems supervision including spot checks in the field to ensure that the safeguards are being implemented in compliance with World Bank's policies and

procedures. The ER-P supports a process for bottom-up data collection from the Mataqali for forest cover monitoring and reporting. Fiji is seeking support from the providers of ODA to improved existing Forest Management System of the MOF. The MOF will aim to improve the process of measuring and reporting forest change within provinces, and addresses limitations of the existing FMS on accuracy, credibility, transparency and quality assurance. Reporting and checking of forest cover change are conducted at each level of the government (districts and provinces in the ER-P Divisions), and at the village and proposed forest management entities. Where forests are allocated to villages a Village Based Forest Patrolling Team undertakes forest patrols and reports to district-based forest officers. They will conduct field measurements of forest change and submit the collected data to a data server. Satellite images and photographs will be used to verify forest changes, and the resulting information is used to update forest cover maps and the use of a tablet-based approach that will allow information to be sent to the Fiji Forest Information System (FFIS).

Participatory M&E tools will be used at the village level, to encourage broad-based participation and to particularly target the poor and vulnerable, and participation will be monitored and disaggregated in terms of gender, ethnicity, and household socio-economic status. The following guidelines will be considered when developing the full M&E system which includes safeguard monitoring, updating the draft Results Framework and for identifying potential indicators: 1) Disaggregate information by gender, racial group, and household socio-economic status; 2) Involve villagers in designing the monitoring program, collecting data, and analysing the data; 3) Continue feedback meetings after fieldwork and incorporate recommendations into systems development; 4) Note successful and unsuccessful strategies for future reference in curriculum development, field implementation, and other program areas; and 5) Identify indicators and tools to measure the program's impacts on women, racial groups, and the poor.

The M&E system will provide safeguard information to the national safeguard information system when it is developed. The M&E system will include socio-economic and environmental monitoring and evaluation of the implementation and reporting of safeguard processes and will be detailed in the ESMF. This will include monitoring and supervising compliance of all environment and social aspects and ensure coordination of subproject environmental and social safeguard implementation. Information related to the safeguard measures and performance would be periodically disclosed to the public.

It is expected that safeguards performance reports will be submitted to the Bank on a yearly basis. The report will describe program progress and compliance with the ESMF World Bank will conduct periodic systems supervision including spot checks in the field to ensure that the safeguards are being implemented.

Box 14-1 Cancun (UNFCCC) Safeguards Principles

When undertaking the activities referred to in paragraph 70 of this decision, the following safeguards should be promoted and supported:

(a) That actions complement or are consistent with the objectives of national forest programs and relevant international conventions and agreements;

(b) Transparent and effective national forest governance structures, taking into account national legislation and sovereignty;

(c) Respect for the knowledge and rights of indigenous peoples and members of local communities, by taking into account relevant international obligations, national circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples;

(d) The full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities, in the actions referred to in paragraphs 70 and 72 of this decision;

(e) That actions are consistent with the conservation of natural forests and biological diversity, ensuring that the actions referred to in paragraph 70 of this decision are not used for the conversion of natural forests, but are instead used to incentivise the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits13;

(f) Actions to address the risks of reversals; and

(g) Actions to reduce displacement of emissions

Table 14-4 Summary of Cancun Principles and application to Fiji ER-P

Cancun Principles	Fiji ER-P Response
(a) That actions complement or are consistent with the objectives of national forest programs and relevant international conventions and agreements;	The ER-P has been developed in a consistent manner with the Forest Decree of 1992, draft Forest Bill, Forest Policy and REDD+ Policy, along with broader policies and plans including the 5-year and 20-year National Development Plan (2017); LEDS; enhanced NDC (to be submitted in 2020) and the new National Climate Change Policy (2019). Relevant policy and legislation are discussed in Section **Error! Reference source not found.**
(b) Transparent and effective national forest governance structures, considering national legislation and sovereignty;	The governance structures for forestry under the MOF are clear, as documented in Section 6.1
(c) Respect for the knowledge and rights of indigenous peoples and members of local communities, by considering relevant international obligations, national circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples;	The ER-P has been developed in consultation with iTaukei and with numerous communities who are either currently part of REDD+ projects or may be involved in the ER-P in future. The legal and cultural rights of iTaukei to land, natural resources and participation in government processes has been integral to ER-P development and the BSM. Consultation processes are documented in Section 5. Safeguards will be put in place to ensure that participatory methods of engagement continue through the delivery of ER-P and that there are culturally appropriate ways to identify and mitigate impacts of on existing rights and knowledge.
(d) The full and effective participation of relevant stakeholders - indigenous peoples and local communities;	
(e) That actions are consistent with the conservation of natural forests and biological diversity, ensuring that the actions … are not used for the conversion of natural forests, but are instead used to incentivise the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits[35];	The ER-P interventions focus on improving the protection of natural forests and locations of high biodiversity value in Fiji, and improving degraded lands for forestry and agroforestry purposes (Refer to Section 4.3 and Annex 4-2). There are no interventions that purposely intend to convert natural forests in Fiji. Safeguards will be put in place to ensure that this is not an unintended consequence at the site level when communities determine their activities on their own land. Establishment of plantations is only approved by the government, so the location of plantations can be controlled under the Programme.
(f) Actions to address the risks of reversals; and	Section 6 documents the risks for reversals and ER-P program design features to prevent and mitigate reversals. The risk assessment for reversals is included in Appendix 11-1.
(g) Actions to reduce displacement of emissions.	Section 5 identifies the risk of displacement. Most risks are considered low because the ER-P covers most of the land in Fiji. The exception is the potential for unplanned forest conversion to agriculture whereby agriculture shifts to small islands outside of the ER-P, which is considered a medium risk.

[35] Taking into account the need for sustainable livelihoods of indigenous peoples and local communities and their interdependence on forests in most countries, reflected in the United Nations Declaration on the Rights of Indigenous Peoples, as well as the International Mother Earth Day

14.2.3 Independent monitoring

An independent monitoring team will be procured by the Fiji REDD+ Unit to undertake annual monitoring of environmental and social compliance monitoring during implementation of the ER-P. The role of the independent team will be to monitor and verify environmental and social compliance during implementation of ER-P and would work with the eleven provinces, districts, local officials, communities, civil society, NGOs and the private sector by providing authoritative and objective information on ER-P operations to validate and verify that safeguards have been implemented following the ESMF and RPF. The DRWG Divisional REDD+ Working Group will have key role in monitoring implementation but will work with the YMST.

The team will include environmental, forestry and social specialists and will be tasked with undertaking a mixture of desk reviews of the environmental and social documentation and randomized field investigations in the provinces and districts. the progress with interventions such as the Integrated Land Use Plans, the CRAs, implementation of Benefit Sharing Plan and to generally review and document field activities to ensure field compliance with the environmental and social safeguards and in particular to review that no conversion of natural forest is being adhered to. The review will include recommendations to improve performance and correct non-compliances. Information on the implementation of safeguards is summarized in the following Table 14-4 and will comprise information on the following.

Table 14-5: Overview of the M&E system

M&E steps	M&E Process
Safeguards processes, inputs and outputs	This comprises information on the establishment of institutions for safeguards implementation and monitoring (e.g. groups involved in the CRAs and REDD+ safeguards unit), capacity building, allocation of budgets for safeguards implementation monitoring implementation of key program processes, specific safeguards procedures (e.g. environmental codes of practice, consultation processes, compensation provided, grievance redress procedures) as will be detailed in the ESMF. and RPF.
Environmental and social impacts/ outcomes	Participatory assessments of the conduct of the CRA and the resulting management plans (i.e. management plan will include a M&E plan for the forest entity) will provide a basis for impact/ outcome monitoring of management entities. In addition, FMEs would be assessed using a Management Effectiveness Tracking Tool for biodiversity. Forest monitoring and simple proxies for biodiversity impact would be derived from information collected through the proposed MMR, including community-based patrolling (e.g. collection of information on forest cover/quality change). Baseline forest threat and social data is captured in the CRA (e.g. major biodiversity threats, poverty, forest dependency, forest/land tenure, natural resource access and use).
Environmental monitoring of plantation development	The monitoring of the concern that plantation development may lead to the clearing of natural forests will include monitoring environmental impact mitigation measures in nine areas: site selection, species selection; management regime, plantation establishment; plantation tending; integrated pest control; fire prevention and control; access and harvesting; and M&E.
Monitoring of social safeguards at the program level	Monitoring will ensure that negatively affected households and communities are no worse off as a result of possible restrictions on natural resource use and includes, monitoring of compensation payments and livelihood restoration measures to ensure negative impacts are mitigated and program affected persons are compensated either on a land-for-land basis or cash compensation for loss due to impacts of the program. The DRWG includes

M&E steps	M&E Process
	a socio-economic and environmental M&E unit to undertake monitoring of the implementation and reporting of the CRA processes. The main responsibilities of the M&E unit will include: 1) overseeing compliance, including supervision and monitoring, of all environment and social aspects; 2) dealing with the subproject/ interventions related to the program safeguards; and 3) have overall responsibility for the coordination of subproject/ intervention environmental and social safeguard implementation. Information related to the safeguard measures and performance would be periodically disclosed to the public.
Monitoring at the Provincial Level	The DRWG a designated safeguards coordinator to whom implementation units would report will collect safeguards-related information. The CRA contribute to the sustainable forest use of the management entities and will include an assessment of their potential impact and risks, and this will feed into the M&E included in the CRA for the management of the effectiveness and help monitor the social impact of the ER-P and REDD+ activities, and record changes that impact on the livelihoods of Mataqali and communities who depend on the forests and / or are beneficiaries of the Interventions in alignment to the BSP.
Independent Monitoring of the REDD+ Registry	Following the requirements of the Methodological Frame the REDD+ Registry will also include and independent monitoring function (see section 18.2 for further details).

14.2.4 National safeguards information monitoring and reporting

Fiji has begun work on designing a draft national SIS framework providing information to the UNFCCC on how the Cancun Safeguards will be addressed and respected in the implementation of REDD+. A comprehensive review of the existing safeguards policies, laws and regulations is being conducted during 2018/19 that will result in a Safeguards Roadmap. It will identify how Fiji would meet the UNFCCC safeguard requirements.

The scope of the National SIS would include a description of the relevant governance arrangements (the PLRs), and information to demonstrate how they are being respected. It would include information on how the governance arrangements are working in relation to the policy and measures. The SIS framework has identified information sources on how the safeguards would be addressed as well as a list of potential existing information systems. It also suggests institutional arrangements for the collection, compilation, aggregation and analysis and dissemination of safeguards information.

Further work is proposed to be undertaken in 2019 to further define more specific information needs and to operationalize the SIS. It is envisaged that the ER-P ESMF would serve as a useful source of information on provincial level safeguard activities to be fed at the national level SIS and for subsequent inclusion in the SOI. It is expected the consultations on contents of SIS and SOI will take place in the first quarter of 2020 with the working groups as well as relevant stakeholders, to ensure necessary progress so that the SIS design framework and SOI shall be completed by June 2020.

14.2.5 Capacity building required to support safeguards monitoring

At the national, provincial and district level most staff that are likely to be involved with REDD+ on an ongoing basis are not very well versed in either the GoF, WB or Cancun Safeguards. There are some exceptions to the rule where districts have been involved with infrastructure projects financed by providers of ODA. But even here there is a limited understanding because typically only the sections that deal with land development, resettlement and compensation and the issuance of leasing agreements have at least a practical working

knowledge of safeguard policies and processes. At the village level there is an even more limited knowledge of safeguard policies and processes and in the management boards there is little or no understanding primarily because these management boards have not been involved for the most part in ODA interventions that trigger safeguards (the only exception being companies like Fiji Pine Ltd that are aware of indigenous peoples safeguard issues as a result of complying with related safeguards due to their involvement with processes associated with Forest Stewardship Certification. Therefore, the Program will have to be involved in building the capacity at all levels (ESMF, Section 7) to better understand how social and environmental safeguard policies and their processes can be used to benefit both those indigenous people's groups directly affected by Program interventions and those indirectly affected. The ESMF will detail the capacity building plan.

14.3 Description of the Feedback and Grievance Redress Mechanism (FGRM) in place and possible actions to improve it

14.3.1 The existing FGRM in Fiji

Where it has been found that the customary system of dispute resolution is most unlikely to work relates to carbon benefit payments, recognition by the MOF, land villagers would be seeking to include in the ER-P accounting process, disputes between iTaukei landowners and non-iTaukei parties to a dispute, customary disputes where the iTaukei village heads lack the fiscal means, technical capacity or legal knowledge to resolve disputes independently, absence of specific REDD+ legislation therefore rendering dispute resolution only of a quasi-jurisdictional nature, formal institutions may be a party to the dispute thereby compromising their independence and transparency and also the formal system is costly, time-consuming and not necessarily accessible to more remote and poorer communities. Thus, there is the scope for considerable "elite capture" by the village heads and even the TLTB and "social exclusion" by poorer and more vulnerable communities including and especially poorer women in such communities.

Additionally, the FGRM needs to address WB safeguard concerns that have not been specifically addressed in the period leading up to the preparation of the FGRM. These are explained elsewhere in Section 14. The type of grievances that have to be captured by the FGRM in Fiji are related to tensions that exist from land and forest governance resources (non-REDD+) such as tenure rights, boundary disputes, administration of customary land, LOUs and investor relations, awareness of rights and access to resources (*in-direct impacts*), as well as aspects related to *direct impacts* from ER-P itself (e.g., benefit-sharing, conservation lease terms). ER-P related grievances are grouped into the following thematic areas:

- **Benefit-sharing –** Distribution of benefits between different forest users, elemental property rights, and internal conflicts over power. Inequity, elite capture, and other internal power struggles are expected to increase when carbon financial benefits are distributed after Year 2 of the ER-P being implemented.

- **Awareness of Rights and Access to Resources –** grievances and disputes of processes to acquire rights to land (FPIC) and access to other forest-based products/resources on REDD+ conservation sites.

- **Boundary Disputes –** overlap or contested land within designated ER-P sites and this would include all types of land tenure in Fiji.

- **Sustainability and Ownership –** division of responsibility between individuals, Lou's, other forest-users, and the government over maintenance of ER-P sites and its effective regulation and implementation.

- **REDD+/Conservation and Forest Management Lease Terms and Enforcement** – Length, authority, and requirements for "specialized" lease[36] terms (e.g., are they properly and appropriately conducted for customary consideration for the purposes of FPIC).

- **Coordination –** Lack of meaningful consultation and effective engagement of forest communities in the ER-P Accounting Area based on the FGRM Principles agreed upon for REDD in Fiji.

- **Unanticipated Impacts –** These may relate to civil infrastructure projects such as small-scale rural-urban water supply projects, and upgraded roads linking forest communities with lowland areas.

The geographic scope for the FGRM will be not just the ER-P Accounting Area but also national because of the interconnectivity of different REDD+ landscapes (forest and mangrove) and high mobility of forest-users. The FGRM should however, gradually expand from project pilot sites (with emphasis on emission reduction program areas) to a national focus in order to provide the MOF, ER-P Unit, and implementer-led projects with lessons learned. It is recommended that rollout of the FGRM occur in an already active national site (Emalu) as well as on an implementer-led site (Drawa), for compatibility modelling. The FGRM can be scaled once it has been piloted and evaluated in these locations and once there has been trust built with stakeholders.

The FGRM proposes the inclusion of both project/implementer-led and national-led activities in a conflict resolution approach for REDD+. Implementer led activities should follow a similar process as the REDD+ FGRM in that there is strong preference for conflicts to be resolved at the informal level, where possible. Outside of the customary system, conflicts that are on implementer-led sites should try to resolve complaints through their own GRM if possible. However, if the issue is between the implementer and a forest-user or if the forest-user wishes to use the REDD+ FGRM they should be permitted to do so, following the process as outlined in Section 4.

Overlap between Program-Led and National-Led GRM processes

Should a grievance be submitted to the FGRM from a forest-user located in an implementer-led site (that was unresolved through the program's GRM or by informal means) then the dispute will be submitted directly to the REDD+LOU for possible mediation, as a first step. If the R+LO is unable to help the Complainant and parties reach a resolution then the grievance will continue to follow the process, elevating to the next step of a third-party evaluation, until a resolution is reached.

It will be important for the scope of the FGRM to be inclusive and not divisive between ER-P participants to not create confusion on when they can engage in the FGRM, who is handling the grievances and resolutions, who is accountable, and what outcomes they might expect. Outcomes need to be in alignment or else conflict may arise from the preference or perceived benefit of using one GRM over another and creditability of the mechanisms will be impacted.

While it is useful for individual projects to have their own dedicated GRM (as is the case in the Drawa Block Forest Community Cooperative or "DBFCC" that served as a case study during the preparation of this FGRM) multiple projects in the ER-P Accounting Area can centralize certain FGRM functions to reduce costs and enhance overall effectiveness.

Possible point of synergy between the multiple GRMs with the ER-P FGRM include:

- The ER-P FGRM will host an internet-based grievance monitoring system with a centralized database that is accessible by all REDD+ projects, national and implementer led. This database

can be used as a repository for all grievances related to ER-P and will aid the ER-P FGRM Team in tracking disputes within and outside the national system as they relate to.

- All projects should replicate a common system to acknowledge the receipt of users' grievances and keep them updated on the progress of investigations. To the extent that there is any inconsistency, all implementer-led projects will be asked to align their GRM processes with the national FGRM and to use similar forms. Maintaining a uniform system in place will alleviate confusion on behalf of forest-users and a shared system for reporting and monitoring or grievances on all ER-P sites.

- Consistent communication and coordination between all ER-P activities can manifest in using the R+LO as a hub for any issues and concerns that may arise from mainstreaming of grievance processes. As part of this coordination, implementer-led activities should initiate a monthly check-in with the R+LO to discuss pertinent issues, challenges, or opportunities for improved FGRM processes. All ER-P grievances should be entered into the central database of recorded ER-P grievances, managed by the R+LO. When an ER-P grievance is entered in the database it should note whether the grievance was initiated and initially recorded as a FGRM grievance or a GRM grievance (as part of an implementer-led project.) Recording all ER-P grievances in one database should help centralize valuable data and create a system where precedents can be accessed in one place.

As the FGRM is new there will be limited understanding of the process initially and it will be important to allow the mechanism to grow organically as awareness increases. Putting in place a system that is too comprehensive when understanding and experience is limited will be neither effective nor sustainable. Therefore, it is best to start with a FGRM that is focused on a few issues and is simplistic in how it receives and resolves conflicts for ER-P. After the FGRM becomes more entrenched and has established credibility it will be easier to scale-up and encourage the government to provide additional resources (human and fiscal) towards conflict resolution processes.

Therefore, it is proposed in line with the joint FCPF/UNREDD+ Program for Fiji that taking into account FRGM processes that are commonly understood in the Fiji context that there should be four relatively simple steps as summarized in Table 14-5.

The FGRM needs to be readily accessible to all stakeholders including older indigenous and non-iTaukei people who are not competent in the use of Fijian language, poorer village persons who cannot afford expenses associated with the cost of seeking grievance redress including litigation in a court of law, and on an individual, group or collective village basis. The proposed CRA with the YMST (this already has limited grievance / dispute settlement role) been designed to endure that all individuals and groups seeking grievance redress will be able to do so. During both SESA activities in five selected village sites and the explicitly focused activities in ten other villages in Viti Levu, both women and men and young and old were encouraged to assist in the design of the FGRM. Thus, there is greater ownership at the village level, including importantly of Non-iTaukei communities and thereby attenuating traditional conflicts between different ethnic groups in rural Fijian society.

Table 14-6 : Summary of FGRM Processes

FGRM step	Process	Agency	FGRM Representative	Roles
Receive and Register Grievance	The step is designed to be simple, convenient and familiar for forest users, considering cultural preferences for communication as well as illiteracy barriers and, if desired, anonymity. The submission, or uptake, of a grievance is comparable to other traditional GRMs in Fiji, which are initially embedded in village governance processes, to build on existing practice and familiarity of users that wish to engage in the REDD+ mechanisms associated with the ER-P. Where the person seeking grievance, redress wants to use a Forest Officer, in part because at the village level the structures of governance cannot deal with complex ER-P issues they may lodge by email, social media, verbally or in writing the nature of their grievance and a response acknowledging receipt should be notified within 5 working days.	Ministry of iTaukei Affairs Ministry of iTaukei Affairs MOF	iTaukei Village Headman Roko Tui (Provincial Office) Forest Officer	Mediator, Facilitator, Decision Maker Facilitator, Mediator Mediator, Facilitator, Investigator, Decision Maker
Evaluate And Screen for Eligibility and Assign Responsibility	This involves an evaluation of the following principles: 1) Has the ER-P activity caused a negative economic, social or environmental impact or has it the potential to cause such an impact; 2) Specification of the type of impact that has occurred or may occur and how the ER-P activity has or may cause the impact; 3) Does the grievance indicate that the aggrieved filing the grievance indicate that those filing the grievance are the ones who have been impacted or are the ones who are likely to be impacted; 4) Can the FGRM handle the dispute in terms of complexity, multiple parties and loyalty?; and, 5) Does the grievance fall within the scope of issues that the FGRM is authorized to address?	MOF	REDD+ Safeguards Officer (under the MSD see Figure 9.3)	Mediator, Facilitator, Manager, Decision Maker
Respond Proposed Resolution, Approach and Agreement	If a grievance is deemed eligible for the FGRM during screening and if it cannot be resolved through a relatively simple action at the local level, then is considered complex enough to require additional investigation and engagement with the Complainant and other stakeholders how best to respond. Turnaround period should be within 5 working days. The possible approaches are: 1) Informal resolution with the community deciding itself (the preferred option); 2) Self-Proposed resolution where if a Forestry Officer is involved s/he resolves it with the Complainant	External Party appointed by REDD+ SC Subcommittee of REDD+ SC to verify outcome of IAG and	Independent Assessment Group (IAG) Safeguards Working Group	Mediator, Facilitator, Investigator Mediator, Facilitator, Investigator

FGRM step	Process	Agency	FGRM Representative	Roles
	or sends back to the community to resolve informally; 3) Joint problem solving approach involving the designated Forest Officer of the FGRM acting as the mediator; 4) Third party resolution whereby facilitation offered through a third party assessment (IAG); and, 5) Board Resolution whereby the External Review Board decides.	recommend to REDD+ SC		
Implement Problem Solving and Grievance Resolution	If the Complainant agrees to the proposed approach the response can be implemented collaboratively. For informal, self-proposed, or joint problem-solving resolutions the approach and close-out of the grievance is completed that satisfies both the Complainant and the community. All self-proposed and joint problem-solving results should be uploaded to the FGRM database and communicated to the Complainant. More simple cases involving an IGA undertaking evaluation but if it is too complex or the Complainant seeks an appeal, the grievance is elevated to the RSC who may request additional information or a new IGA. Categorization of seriousness ranges from low, medium and high seriousness based on the potential to 1) gravity or seriousness of the grievance; 2) potential on an individual or group's welfare and safety; 3) potential impact on the environment; 4) Risks posed, whether current or future; and, 5) Impact of the seriousness of the allegation on the processing timetable. Proposed resolutions include informal resolution, self-proposed resolution, and joint problem-solving. The turnaround period should be no more than 15 working days.	MOF Ministry of iTaukei Affairs Ministry of iTaukei Affairs	Forest Officer iTaukei Village Headman Roko Tui (Provincial Office)	Mediator, Facilitator, Investigator, Decision Maker Mediator, Facilitator, Decision Maker Facilitator, Mediator
Closure Monitoring and Tracking Results	The process for monitoring and tracking should cover the duration of the grievance redress in alignment with UN-REDD/FCPF guiding principles that include transparency, accessibility, predictability, engagement and dialogue, Legitimacy, equity, rights-compatibility and enabling continuous learning.	Subcommittee of REDD+ SC to verify outcome of IAG and recommend to REDD+ SC	Safeguards Working Group	Mediator, Facilitator, Investigator

14.3.2 FGRM and Safeguard Policies and Procedures

As mentioned above the FGRM developed for the REDD+ Program in Fiji is designed to address issues relevant to that Program but it does not deal with people that may be negatively impacted by activities agreed upon for the ER-P or the unforeseen impacts that may occur if other development projects – most notably physical infrastructure – that are not foreseen at present are implemented. The difference between the WB requirements and that of the REDD+ FGRM that has been prepared is that the WB deals with individually affected persons who losses are quantified through an Inventory of Loss and Detailed Measurement Survey whereas the REDD+ FGRM does not deal with such issues.

Most of the ER-P interventions revolve around the yet to be established FMEs and they are being designed to ensure that they can also deal with grievances and complaints that may occur during the ER-P implementation. However, where there might possibly be some physical infrastructural activities (such as the upgrading of non-permanently surfaced rural roads and watershed structural improvements) grievances related to involuntary resettlement such as poorly undertaken IOLs or DMSs that are not accepted by affected persons and substantive issues arise relating to the payment or compensation for land or other assets acquired or restriction of access to existing natural resources, which need to be addressed.

The FMEs will not the legal vehicle to adjudicate on compensation, allowances or other income restoration measures affected persons are legally entitled to receive this will require collaboration between the TLTB and MOF. Rather the FMEs would need to assist affected people receive any payments as reflected in the Entitlement Matrix of the RPF prepared for the ER-P and reflected in any RAP. This assistance would need to extend covering any costs involved – transport, accommodation, appellant fees – by affected persons seeking grievance redress as per the RAP or where relevant also the EMPF and reflected in any EMDP. The FME would not have to pay costs associated with complaints that do not trigger either environmental or social safeguards.

For details, see Annex 14-1: Feedback Grievance and Redress Mechanism (FGRM), Policies and Procedures

15 BENEFIT-SHARING ARRANGEMENTS

15.1 Description of benefit-sharing arrangements

15.1.1 Introduction to the Benefit Sharing Mechanism

The benefit-sharing arrangements of the ER program build on customary landownership of the indigenous people (the iTaukei) that have ownership to most of the forestland and is recognized by the Government of Fiji. In designing the benefit-sharing arrangements of the ER program, existing institutional, legal and operational aspects of benefit-sharing and priorities for ER program benefit-sharing have been considered. The sections below describe the existing institutional arrangements, consultation process, identification of beneficiaries, modalities of benefit-sharing and monitoring of benefit-sharing mechanism; and legal basis for benefit sharing arrangements. This section aims to discuss benefit sharing mechanism for Fiji based on clear, effective and transparent mechanisms with broad community and stakeholder support in alignment to Criterion 29-33 of the FCPF Methodological Framework.

There are models of benefit sharing mechanism that exist in the country. All are institutionalised with strong legal frameworks, functional institutional support ensuring efficient delivery of each mechanism. Existing benefit sharing mechanisms are summarized below with detailed discussion outlined in Annex 15-1.

i. ***The iTaukei Lands Trust Board (the Board) Model:*** Under the iTaukei Lands Trust Act (TLTA see Section 4.5) the control of iTaukei land is vested in the Board of TLTB and administered for the benefit of the iTaukei owners. TLTB collects premiums, lease rentals and other fees derived from land resource transactions. Lease rental money is distributed according to the provisions of section 14 of the TLTA and the iTaukei Land Trust (Leases and Licenses) (Amendment) Regulations 2010. All benefit payments to TLTB are expressly stated in the terms and conditions of the lease agreement, clearly stating the amount to be paid by lease holders. Lease payment are remitted by TLTB to all individual members' bank accounts (above 18 years) in equal parts. The register of all living members from the record of the VKB (register of all living members), housed at the offices of the iTaukei Lands and Fisheries Commission, is cross-referenced to ensure currency of members.

ii. ***The Land Bank model:*** The Land Use Decree (See Section 4.5) offered iTaukei owners the option to have their lands administered by government through the Land Bank. Under this model landowning units (LOUs) are required to elect up to five qualifying members who, after approval by the Prime Minister, are to act as trustees for their respective LOU. Trustees receive lease rental payments and are then responsible for their distribution according to specifications as articulated in the deed of trust. Unlike the TLTB model, the Land Bank Model distributes 100% payment of lease rentals to the LOUs.

iii. ***Charitable trusts:*** The Charitable Trusts Act makes particular provision for charities. For the operation of the system, it is important that a charitable purpose is being fulfilled by the trust. In addition to the four traditional purposes of charity – relief of poverty, advancement of education, advancement of religion, and other similar purposes of a public nature; the Act provides for the application of the Act to other purposes declared charitable by the Attorney-General. In Fiji, there has been no trust developed for environmental purposes, although international practice has, in many cases, extended charity to cover environmental purposes. In the case of its use for REDD+ benefit distribution purposes, Attorney-General should accede to a request to declare an environmentally oriented trust charitable.

iv. ***Companies benefit sharing mechanism:*** A company limited by guarantee is incorporated under the Companies Act 2015 and may provide a suitable option for non-profit organization. Registering a company limited by guarantee provides an alternative company registration process and, once registered; the company can apply to FRCA for not-for-profit-status, giving it the same tax exemptions as would normally be associated with a charitable trust.

v. ***Benefit-sharing mechanisms – incorporation as a co-operative:*** The Co-operatives Act 1996 provides that a co-operative is an association of persons who have voluntarily joined together to achieve a common end through the formation of a democratically controlled organization which

makes equitable contributions to the capital required and accepting a fair share of the risks and benefits of the undertaking. Members of the co-operative actively participate in the running of the co-operative, which is provisionally or fully registered under the Co-operative Act. The Co-operative may function as a primary or secondary cooperative, apex organization or the National Co-operative Federation registered according to the provisions of the Act. Often, the main purpose of a co-operative is to maximize profit, ensure inclusivity and to ensure long-term sustenance of business operations. A registered co-operative is also a body corporate and, once registered, it may apply for a tax holiday for up to eight years. Co-operatives have by-laws or internal regulations and must hold an annual general meeting once every financial year. It is run by a board of directors, and delivers a dividend and bonus, being a share of the surplus.

vi. ***Mineral Royalties:*** The 2013 Constitution reaffirms the State ownership of all minerals in or under any land or water and provides for the entitlement of landowners and owners of customary fishing rights to receive a fair share of royalties or other money paid to the State for minerals extracted from their land. The Fair Share of Mineral Royalties Act (Section 4.5) clearly stipulates that any royalty from mineral extraction must be shared in the following manner— (a) 20% of the royalty to the State; and (b) 80% of the royalty to the owner of the land and Qoliqoli areas (beach, lagoon and reef).

15.1.2 Application of Benefits Sharing Mechanism in REDD+ and Forest Conservation

TLTB model is the most commonly applied benefit sharing model in Fiji with clearly acknowledged laws and regulations that have stood the test of time and well-known processes, benefits and challenges. Cooperatives have also been applied across sectors and common in rural areas in support of small enterprises that are collectively pursued. The least applied are the Charitable Fund and creation of Companies. Land Bank model and Trust Deed have recently gained popularity as landowners continue to assess benefits from registering their land under the initiative.

A fundamental requirement of both TLTB and Land Bank model is the requirement for collective discussion and consensus of no less than 60% of the registered landowning units to agree to all transactions pertaining to iTaukei Lands. Consensus gathering adopts the FPIC process which involves a mix of community and Mataqali consultation. Mataqali member in the village and urban areas are approached either collectively or individually to discuss and gain consensus to move ahead with land development.

A few examples of benefit sharing arrangements relevant to REDD+ in Fiji on iTaukei land where leases were issued by TLTB is described below.:

Sovi Basin Protected Area

The Sovi Basin Protected Area is secured under Conservation Lease issued by TLTB to the National Trust of Fiji (NTF) who adopted co-management system in partnership with landowners. The Sovi Basin PA follows a **trust fund** model. The Sovi Basin Trust Fund was established with USD$ 3.9 million in 2012. Monetary lease payments to landowners were started from 2009 and non-monetary benefits provided to beneficiaries from 2017. The Trust Fund was established offshore in Singapore and NTF manages disbursements. The Trust Fund has a 99-year conservation lease and aims to provide benefits in perpetuity from the interest of the fund to support the conservation of the Sovi Basin Protected Area. The primary objective of the program is conservation of the Sovi Basin Protected Area (16,304 ha) as an important rainforest habitat for several key endemic and threatened species. The secondary objective is providing socio-economic development benefits to the beneficiaries – landowners and communities of four surrounding villages – in exchange for their collaboration to reduce threats to the Protected Area.

The paramount chief of each of the communities surrounding the Sovi Basin Protected Area signs a Community Conservation Agreement (CCA) committing to protect and monitor the forest in exchange for FJD$ 10,000/year *(non-monetary benefit)*. The use of funds is guided by the community development plan and designed to give benefits to everyone in the village (including landowners and non-landowners whose lands are part of the Sovi Basin PA). Villagers decide how the funds are used in alignment with community

development priorities. NTF disburses money the village bank account based on signed community meeting minutes and invoices. For villages without a bank account, NTF pays the service providers are directly to prevent any potential misuse of funds. Implementation of funds generally involves support for activities like clean water supply, improvements/renovations for community halls, agriculture input (especially taro planting materials), and fish farming. In return, communities monitor the peripheral of protected areas from threats such as fires, indiscriminate cutting of trees and other conservation measures such as planting trees.

Drawa Project

The Drawa benefit sharing model involves cash benefits as lease payments to the landowners with remaining carbon funds being shared as additional cash payments to the landowners as well as a women's group and a youth group. In addition, the local communities' benefit from livelihood projects that are paid from non-carbon community development support funds that have been received from other philanthropic donors.

The Drawa project follows a **co-operative** model. The Drawa Block Forest Community Cooperative (DBFCC) was established in 2011 and is composed of ten members which include the eight LOU (mataqali) that own the forest area plus a women's group and a youth group. The DBFCC has a 30-year REDD+ lease with right to renewal for two consecutive 30-year periods from TLTB for the conservation of the Drawa forest. The project is validated and verified under the Plan Vivo standard and began Emissions Reduction (ER) trading in 2018. The DFCC is responsible for managing the distribution of both the carbon and non-carbon benefits, while another organization (Live & Learn) provides business, governance, and technical support. The project has a 30-year agreement under the Nakau Program, which is a regional network of fair-trade carbon and conservation projects. Under this arrangement, the Nakau Program and Live & Learn each take a 20% administration fee, leaving 60% of the carbon revenues from the sale of ERs for the local beneficiaries. Lease operating costs are paid to the landowners through TLTB then DBFCC equally distributes the remaining funds to the ten co-operative shareholders.

Nakauvadra Community Based Reforestation Project

The Nakauvadra benefit sharing model involves cash payments for tree planting and purchase of seedlings from tree nurseries managed by members of the local communities, combined with in-kind benefits in the form of additional revenue generating activities. Community Conservation Agreements commit the landowners to look after the planted trees for 30 years. No lease payments are made to landowners as the trees belong to them.

Funds distributed directly to village committees on account of active participation in planting activities are shared to individuals that contribute to restoration activities. Traditional meeting structures (one with heads of LOUs where all villages attend) were used to provide the necessary oversight in the distribution of benefits.

Planting commenced in 2009 and ended in 2014, with some replanting in 2017 and 2018 to repair damage from Tropical Cyclone Winston. A total of 64 reforestation plots were planted ranging from 1 hectare to 100 hectares covering a total of 1,135ha. The project operated over the entire Province of Ra and engaged 26 of the 86 villages, representing 5,000 inhabitants, and involving 50 LOU. In addition, over USD$600,000 cash benefits were realised through employment of 300 people to plant 350,000 trees and sale of seedlings from 6 community nurseries generating income for 200 households. The project also provided in-kind benefits through donation of 35 beehives and training on honey making techniques. Additional non-monetary benefits include the supply of 1300 pandanus plants (used to weave mats) to women organisations; 6 fishponds; establishment of 600 sandalwood plants and construction of visitors shed for ecotourism.

Emalu REDD+ Pilot Site

The Emalu forest was selected as a pilot site for the National REDD+ program in 2012. It has an area of 7,347 ha of predominantly pristine forest. It has been legally secured for 99 years lease as the REDD+ Pilot Site for Fiji with a condition that is handed over to the landowners in the 30th year. Clearing for agriculture and conventional logging are the two biggest threat to the pilot site. Avoided deforestation and forest degradation as well as removals through carbon enhancement activity are the targeted REDD+ activities In terms of benefit sharing, the Emalu land owning unit are currently receiving monetary benefits from the lease money through

TLTB as well as non-monetary benefits through alternative livelihood projects such as bee hives, reforestation, agroforestry and training opportunities.

A summary of the types of benefit sharing mechanism common in Fiji with assessment of its relevance and application to ER-P+ activities in Fiji is outline in Annex 15-1.. Benefits sharing mechanism in Fiji is predominantly associated with property rights. ER-P on the other hand recognises property rights but aims to reward performance through the benefits sharing mechanism. This is the biggest difference between existing frameworks and the new one proposed for ER-P activities.

Although the Benefit Sharing Plan is yet to be developed, recommendations from the recent study on Benefit Sharing Mechanism (BSM) for the ER-P are reflected below. The key points of departure from existing BSM practices is associated with the performance-based payment system of the ER-P as opposed to lease benefits that are distributed by TLTB/Ministry of Lands/ Land Bank. Lease holders - irrespective of status or level of productivity are expected to pay lease rentals and are penalised for late payments. Landowners therefore accrue benefits irrespective of the productivity level of the lease holder. In the case of ER-P, monitoring and evaluation (Section 15.1.3) is an integral component of BSM to ensure ER activities are delivered in a coordinated and timely manner.

Finance from the Carbon Fund (through an ER-PA) provides incentives for projects. Nesting of projects is required within the National Forest Monitoring System to avoid double counting. The GoF has scheduled to develop Nesting Guidelines in consultation within existing Projects (Section 18.1). The aspects related to benefit sharing will become relevant with further clarity on the approaches to nesting to be agreed between the Government of Fiji and REDD+ projects. The current existing project (i.e. the Drawa Project) will be excluded from the ER Programme area for the duration of the ER-PA period. The Nesting Guidelines will be established to enable consistency with the National Forest Reference Level and for Projects to continue to operate in Fiji. The Drawa Project will be expected to align with the Nesting Guidelines at the completion of the ER-PA period.

15.1.3 Elements of Benefit Sharing Mechanism

The following section briefly outlines major outcomes of the study on benefit sharing mechanism which paves the way for the Benefit Sharing Plan to be developed before December 2019.

Objectives and Principles
The following objectives and principles were proposed by participants in the Inception Workshop. They were presented at each of consultation workshops with no objections. They were also presented to the MOF management and endorsed.

Objectives

- Develop climate-resilient communities
- Empower communities to take ownership of their sustainable development to improve their livelihoods
- Conserve native forests and increase community woodlots and plantations, helping to generate more emissions reductions and removals

Principles

- Benefit sharing should be
  - **equitable and fair**, respecting land and tree ownership and customary rights, considering opportunity costs, and considering effort and costs needed to implement activities
  - **inclusive**, with special attention to participation of women, youth and ethnic minorities
  - **effective** in providing incentives for further action to reduce emissions and increase removals
  - **efficient**, ensuring that maximum benefit flows to the beneficiaries

        - **transparent**
        - **flexible** to enable adaptive management
        - **comply with relevant laws** and support meeting international agreements
        - **based on commitment and performance**
    - Local communities are expected to benefit the most
    - Beneficiaries should participate voluntarily through free, prior and informed consent, enabling their consideration of options and alternatives
    - Non-monetary benefits should be prioritized
    - Consideration should be given to non-carbon benefits.

Identification of Beneficiaries

The beneficiaries are identified as actors who should receive benefits because of their rights and or contribution to impact delivery of emission removals and reductions (ERR). The main groups of beneficiaries have been extensively discussed and are recommended to include resource users that contribute to ERR. The study on the Benefit Sharing Mechanism defined beneficiaries aligned to each ER-P activity through careful identification of actors that contribute to ERR. Details of the actors and beneficiaries for all ER-P activities are listed in Annex 15-2.

Beneficiaries identified across all ER-P activities can be summarised into three main categories including:

- **Owners of the** land (this may be indigenous land, state land or private owned land);
- **Community trust** encourages collaboration among all users of forest resources and actors in ER-P activities to form an entity aligned to existing benefit sharing mechanism. For iTaukei land, the community trust recognises communal use of natural resources and binds all users into an entity such as a Trust, cooperative or body corporate of choice;
- **Small holder farmers** who have Agriculture lease from TLTB/ Ministry of Lands/ Land Bank.

Types of Benefits

The types of benefits include opportunities for the carbon fund payments to support several different types of mainly non-monetary benefits for example, as input support for the following activities:

- Improvements to community forestry and sustainable forest management including planting native species, and adopting longer rotations for production forestry (SFM, ecosystem restoration through carbon enhancement and agroforestry/alternative livelihood – subcomponent 2.1, 2.2, 2.3, 2.4);
- Improvements to agricultural crop productivity and diversification which contributes to less encroachment (sustainable land management, agroforestry/ alternative livelihood – subcomponent 2.4);
- Improvements to the sustainable management of NTFPs which helps to reduce further forest degradation pressure on the forest (forest conservation – subcomponent 2.5).

A summary of beneficiaries and benefits suggested is listed below:

- All REDD+ activities
    - Villages/communities that use the forest area get a non-monetary benefit in the form of a community development project
    - Leaseholders and owners of land conducting REDD+ activities on their own land get non-carbon benefits from
        - Enhanced forest or plantation protection from fire and illegal activities through community collaboration
        - Training from MOF and Ministry of Agriculture (covered by government budgets)
- Community-based tree planting and riparian reforestation
    - iTaukei landowning units that consent to plant trees on their land receive a monetary or non-monetary benefit as an incentive to plant trees (e.g. Restoration of Degraded Forests initiative which pays $244/ha, or could be seedlings and equipment)
    - iTaukei landowning units get a monetary benefit lease payment
- Smallholder (less than 5 ha) agroforestry

    - Smallholders receive a monetary or non-monetary benefit as an incentive to plant trees and adopt agroforestry (e.g. cash payment as for RDF or seedlings and equipment)
- Forest Conservation
    - Owners of land get a monetary benefit lease payment and compensation costs for the foregone rights to harvest timber.

Allocation between Beneficiary Groups

Fiji experiences cyclone season between November to April. The outer island regions are affected more regularly than the larger islands included in the ER-P Project Area however projections indicate more intense hurricanes in increasing frequency across all the group of islands in Fiji. Storms that result in heavy damage typically occur every ten years, however with climate change the frequency of such damaging storms is anticipated to increase. Therefore, the risk of a storm event impacting REDD+ interventions exists. Damage from heavy storms is typically more significant in exotic plantation forests compared to secondary native forest areas and decreases further in primary forests. To mitigate potential losses, areas identified for reforestation projects will undergo a prior assessment of suitability (i.e. aspect, soil type, species composition, management regime) with the aim of minimizing losses. At the same time, the BSM study suggests a buffer fund of 5% of the befits from Carbon Fund should be set arise as a performance buffer to cater for possible loss associated with Climate Change.

The Government will need to provide services through the MOF, Ministry of Rural and Maritime Development and other key agencies to address REDD+ coordination, MRV, safeguards and grievance mechanism. Benefits from Carbon Fund must be allocated to cater for this through approval of the Forestry Board. It is therefore suggested to allocate a maximum of 10% and a minimum of 3% to the MOF where the Forestry Board will be required to make decision on the amount allocated.

The remaining funds (85-92% depending on decision of the Forestry Board) is suggested to be allocated equally according to the following guideline:

- Priority allocation to:
    - Lease payments to landowners (for Community-based tree planting, agroforestry and forest conservation);
- Secondary allocation (based on needs and potential other budgets):
    - Incentives for community-based tree planting;
    - Incentives for smallholder agroforestry;
- The remainder of the funds is to be allocated for Community Development Projects which should represent the majority of carbon finance received.

Eligibility Criteria for Beneficiaries

The Forest Bill 2016 requires that all REDD+ activities are to register with the MOF. In addition, Clause 21 of the Forest Bill 2016 refers to the issue of Forest Management License. This clause may be expanded to reflect ER-P Activities. The MOF is committed to review the Forest Bill 2016 and resubmit for parliamentary review and endorsement by December 2019.

All beneficiaries must register with the MOF to be eligible for REDD+ benefits. Registration with the MOF may take the form of an initial CRA, followed by field reconnaissance to assess viability of ER-P activity. Once assessed viable, leases and license are pursued. MOF will issue REDD+ License which is conditional upon the issue of land lease by either TLTB or the Ministry of Lands/Land Bank. The twostep process of lease and license will support creation of carbon titles for trade through lease conditions and allow technical oversight and monitoring of all ER-P activities by the MOF. The MOF REDD+ Unit is committed to develop Standard Operating Procedures however general expectation of the lease and licenses area outlined below.

REDD+ Lease will include:

- Define carbon title holder as the lease holder;
- Assignment of ownership of any ERRs generated to Government to allow international trade in return for benefits;
- Identification of the co-signatory Community Trust that will contribute to conservation of the forest in return for non-monetary benefits in the form of community development projects;

- Conservation conditions to be respected by all parties and a monitoring clause that establishes penalties for non-compliance;
- Type of benefits for which the lease holder is eligible e.g. tree planting incentives, agroforestry incentives
- Type of benefits for which the owner of lands is eligible e.g. lease payments, compensation costs;
- Variation clause recognizing that all carbon benefits including lease payment, incentives for planting, and allocations for community development projects may vary depending on carbon revenue;
- 50-year term except (i) 30 years agroforestry and (ii) 99 years for conservation.

ER Licence issued by the MOF will include:

- Conditionality for prior approval and issue of lease from TLTB/ Ministry of Lands/Land Bank
- Type of ER-P activity pursued and detailed management plan showing map of boundary and specification of operation
- Implementation Plan and monitoring schedules
- Conditionality of benefits and types of benefit

The Ministry of Rural Development and Disaster Management (MRDM); is the focal point for the policy on Integrated Rural Development Framework which aligns well with the ER-P activities. In collaboration with TLTB, MDRM is well positioned to assist communities to establish Community Trust as well as facilitate registration process for REDD+ Leases and Licenses. A flow chart of the registration process including establishment of REDD+ER Lease and License is outlined in Box 15-1.

Conditionality of Benefits

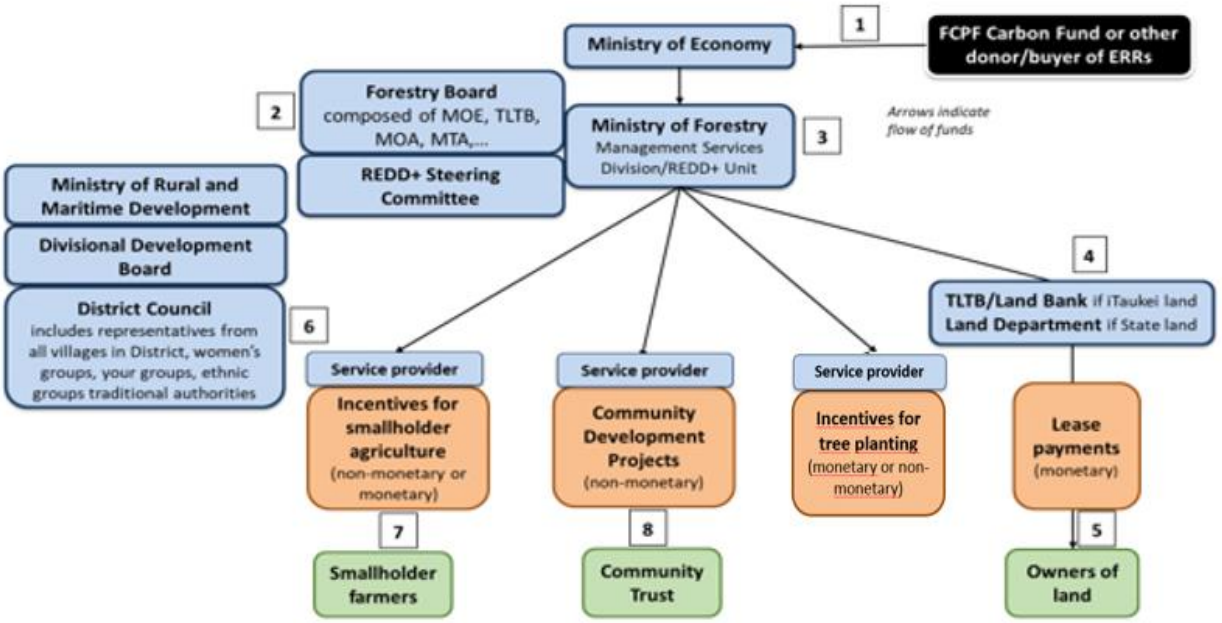
Stakeholder consultation at the Benefit Sharing Workshops noted that it is imperative to determine from the offset the conditions on which beneficiaries may fully realise rewards for their efforts. However, it is noted that lease payments to landowners are not performance based. Lease payments are based on contractual agreements where monetary land rental is paid by the lessee annually regardless of the status of REDD+ activity. Stakeholders noted that many landowners are not willing to pay land lease on their own land hence for the purpose of ER-P, lease payment to landowners involved in ER-P activities on their own land may be an incentive for participation. The lease condition for such lease may have a variability clause that allows the amount of land rental to change depending on carbon finance received. TLTB/Ministry of Lands/Land Bank will negotiate the amount with MOF as advised by REDD+ Steering Committee and approved by Forestry Board.

Table 15-1: Institutions responsible for delivery of benefits

Agency	Benefits Delivered	Beneficiaries
Ministry of Rural & Maritime Development and Disaster Management	Community/Village projects	Community Trust
iTaukei Lands Trust Board/ Ministry of Lands/Land Bank	Lease payments & conservation	iTaukei Lease owners
MOF	Non-monetary benefits such as seedlings, rain suits, cameras, tools for agriculture, surveillance and monitoring, safety gear, rain suits, cameras, tools for agriculture, beekeeping and others Buffer Funds Safeguard, Monitoring and other costs	Small holder farmers All beneficiaries All beneficiaries

Delivery of Benefits

The Ministry of Economy was granted Cabinet Approval (Refer to Annex 17-1) to negotiate carbon trade and be the focal point for Fiji to World Bank. The Warsaw Framework suggests that the national entity or focal point designated to serve as liaison with the secretariat and bodies under the UNFCCC on coordination of support and may also be nominated to receive and obtain results-based payments.



1. *Ministry of Economy receives funds from FCPF Carbon Fund or other donor/buyer of ERRs*
2. *Forestry Board approves plan for use of carbon funds proposed by MSD/REDD+ Unit in consultation with REDD+ Steering Committee, based on registered REDD+ beneficiaries, lease agreements, and results of MOF monitoring of conservation conditions*
3. *MOF retains maximum 10% (3% proposed for ERP) for government plus amount needed for incentives for tree planting by communities. Amount included for such purposes in the plan for use of Carbon Funds will vary depending on availability of other funds*
4. *As an interim measure, TLTB holds 5% buffer which is invested for future needs, then released on approval of Forestry Board before establishment of Forestry Endowment Trust Account*
5. *Owners of land are beneficiaries of monetary benefits in form of lease payments and compensation costs (where relevant) Lease payments may be variable depending on carbon finance received. ITaukei landowning unit (LOU) may decide to assign lease payments to community development projects. LOU can also benefit from monetary or non-monetary incentives for tree planting*
6. *Smallholder farmers are beneficiaries of non-monetary or monetary benefits e.g. seedlings, tools, equipment etc.*

Box 15-1 Suggested process for Delivery of Benefits

Using existing structures such as the Forestry Board (under the Forest Act 1992) to approve plans for the use of carbon funds will ensure transparency and fulfilment of safeguard requirements under World Bank Policies and the Cancun Safeguard Principles (Section 14).

The three key beneficiaries include owners of the land, community trust and small holder farmers. Benefits from the carbon funds will be received by the Ministry of Economy where it will be channelled to the MOF. The study on Benefit Sharing Mechanism recommends that delivery of benefit to Community Development Projects be considered under the following structure:

- 50% of benefits allocated for REDD+ activities such as seedlings, surveillance and monitoring, removal of invasive species, procurement of safety gear, rain suits, cameras, tools for agriculture, beekeeping, fisheries, ecotourism, fire-fighting tools to create and maintain firebreaks and others;
- 50% of benefits allocated for community development such as school renovation, health centers, church renovation, boreholes, solar lighting, scholarships, etc.
- Preference to projects that benefit a larger proportion of the community, including women, youth and any vulnerable and marginalized people
- Ineligible non-monetary items to include the purchase of chainsaws, hunting and fire tools/equipment, projects that disproportionately benefit any individual or family.

Key institutions that may support delivery of benefits are outlined in Box 15-2 and summarised in Table 15-3.

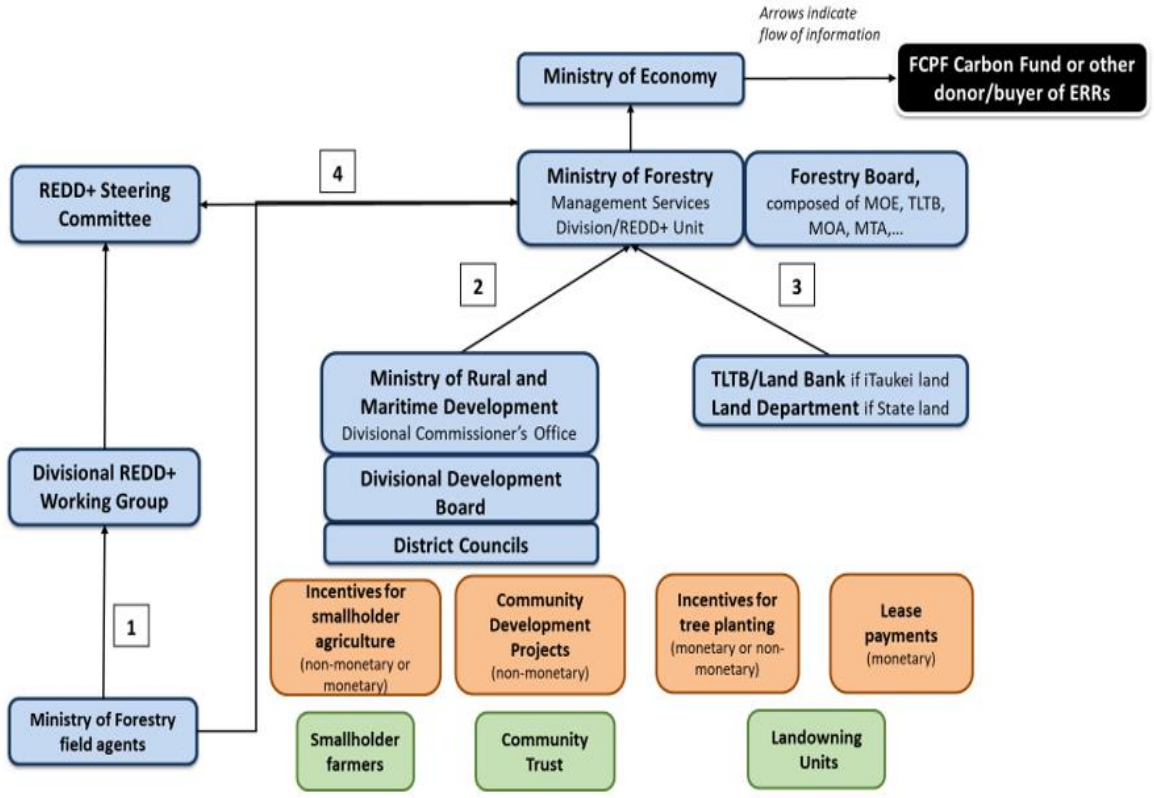
Disclosure, Communication and Dissemination of Information

All information pertaining to ER-P activities will be disclosed for public information. These include benefits received and distributed by Village, District and Division (village development projects and agroforestry incentives, lease payments, conservation costs and community planting incentives); list of beneficiaries registered for REDD+; ERRs generated and carbon finance received as well as the amounts allocated to each beneficiary group. It is also important to disclose for public information the annual plans for benefit sharing approved by Forestry Board, including lease payment amount/ha and maximum allocation for Village Development Project and evaluation reports of performance for each ER license holder.

15.1.1 Monitoring the Benefit Sharing Mechanism

The BSM is a performance, results-based approach and only those directly involved in achieving these results will be the beneficiaries. The Drawa Project have developed clear guidelines on benefit sharing and monitoring plan. The Project assumes three streams of benefits including carbon, community and biodiversity. Each stream of benefit has clear monitoring plan with standard operating procedures.

At the national level, without the Benefit Sharing Plan, the study on Benefit Sharing Mechanism recommends that the MOF Extension Officers will monitor all ER-P activities and report on performance of beneficiaries with respect to commitments in the ER License and Leases. Technical reports are presented to the Forestry Board through prior validation from the Divisional Working Group and endorsement by the REDD+ Steering Committee. Reports on the monetary benefits are submitted by TLTB and Ministry of Lands/Land Bank to the MOF who then presents to the Forestry Board for endorsement prior to submission to the Ministry of Economy. At the national focal point, the Ministry of Economy will report to the FCPC Carbon fund. A flow chart depicting the monitoring framework is outlined in Box 15-3.



1. *Ministry of Forestry field agents report on performance of beneficiaries with respect to commitments in REDD+ Licences and Leases*
2. *Technical reports on implementation of community development projects and incentives for small holders*
3. *Financial reports on lease payments and buffer funds (if these are managed by TLTB)*
4. *MSD/REDD+ Unit prepares annual report of benefits shared and performance on REDD+ activities and conservation commitments, and proposes plan for use of carbon funds for next period in consultation with REDD+ Steering Committee for approval by Forestry Board*

Box 15-2 Monitoring and Reporting Arrangement for Benefit Sharing

15.2 Summary of the process of designing the benefit sharing arrangements

In preparing the BSM a concerted attempt, especially by forestry officers has been made to place less stress on the monetary benefits that might be derived from the Carbon Fund for two important reasons. The first reason is that in accordance with good development practice it is considered necessary not to unrealistically raise beneficiary expectations that the ER-P will provide substantial monetary benefits on an individual basis. Secondly, market price and amount that will retired are still unclear as to what the indicative amounts available for distribution under any benefit sharing arrangement that is agreed.

Discussions on the design of the benefit sharing arrangements for the ER-PD have been on-going since 2016 and these have included discussions at program, provincial and national workshops, and field consultations with different Regional and Sub-Regional Divisions of Forestry and forest-dependent communities.

The recent study on Benefit Sharing Mechanism consolidated earlier discussion using participatory tools at Divisional and National workshop to gather information used as the basis of the analysis. Validation workshop also at Divisional and National level guided final recommendations for the development of the Benefit Sharing Plan. A High Level Consultation was undertaken to share the findings from Divisional and National Workshop as well as to seek guidance on pertinent issues such as (a) criteria for allocation of benefits; (b) conditions for receiving benefits, (c) delivery systems, (financial management and flow of funds, (d) governance arrangements, roles and responsibilities, (e) disclosure of information and (f) monitoring systems. Supplementation information gathered from previous Divisional and National Workshops included (a) identification of benefits, (b) eligibility criteria, (c) identification of benefits, (d) approach to nested projects and (e) feedback grievance redress mechanism.

The above issues will be consolidated in the Benefit Sharing Plan which will be developed by December 2019.

15.3 Description of the legal context of the benefit-sharing arrangements

The review of national laws and regulations is mostly useful in identifying REDD+ stakeholders with legal rights and those who are essential to the emissions reduction activities. Policies and laws described in Section 4.5 are also applicable to benefits sharing such as the iTaukei Lands Trust Act (Cap) 134, Land Use Act 2010, Land Transfer Act and others. The following discussion considers relevant legislation for benefit sharing from the perspective of beneficiaries taking into account the legal context of benefit sharing arrangements.

For benefits sharing arrangements, the ***Land Transfer Act*** provides a secure system of land title by registration and applies to all three categories of land title ownership: Freehold, State or iTaukei lands as it defines land to include everything on or under the land, including all trees and timber, unless specially exempted[37]. An example of such exception is the ownership of all minerals which is vested in the State by the *Constitution*, and the *Minerals Act*.

The Constitution of the Republic of Fiji recognises the rights of ownership and protection of iTaukei[38] lands and entrenches this right by stating that those lands shall not be permanently alienated. The only exception is the compulsory acquisition of those lands by the State for public interest purpose on just and equitable compensation terms.

As outlined in Section 2.2, 4.2. and 4.4 iTaukei landowners, or Landowning Units (LOUs) have been owners and custodians of lands and forests in Fiji for generations and remain the largest group responsible for land management. Their rights are described in Section 4.4 and aligned to laws, statutes and regulations out lined in 4.5 which provides conditions for leases and licences issued on the land. Although there is no explicit law addressing benefit sharing and eligibility to REDD+ benefit, existing legal framework are sufficient to ensure equitable benefits to all beneficiaries.

Eligibility to customary land rights and fishing rights is linked to iTaukei membership to a *mataqali* (sub-clan) and corresponding *yavusa* (tribe) that are defined according to Fiji's patrilineal system (Section 4.4). The

[37] s. 2(1) of the Land Transfer Act. "*Land includes land, messuages, tenements and hereditaments, corporeal and incorporeal, of every kind and description, together with all buildings and other fixtures, paths, passages, ways, watercourses, liberties, privileges, easements, plantations, gardens, mines, minerals and quarries, and all trees and timber thereon or thereunder lying or being unless any such are specially excepted".*

[38] as well as Rotuman and Banaban lands

iTaukei Lands and Fisheries Commission (TLFC) is a statutory body established by the *iTaukei Lands Act* for the registration of the boundaries and members of landowning units (*Mataqali)*. TLFC is also mandated by the *Fisheries Act* to register the boundaries of traditional fishing grounds (*qoliqoli*) and the members of each corresponding tribe (*Yavusa*). A condition of recognition by the statutory law of customary landownership and fishing rights is registration in the iTaukei Lands and Fisheries Register (*Vola ni Kawa Bula* or VKV) which is periodically updated by TLFC.

Ownership of land and trees does not immune landowners from compliance with the provisions of the Forest Act 1992 or regulating forestry activities. In particular the requirement for a licence for timber harvesting and the taking of forest produce is clearly articulated in the Forest Act. A forestry licence is not required for the exercise of customary hunting, cutting, taking and fishing rights for domestic purpose under the ***iTaukei Land (Forest) Regulation***. The Forest Act similarly protects customary rights to cut or remove forest produce from iTaukei land without a forest licence for sustenance. The risk of relocation, depriving land use to community members or any households forced to desist from using land for other purposes such as traditional agricultural cropping or livestock grazing is minimal as legal provisions allow for access and use of forest resources for subsistence purpose as outlined above.

In the context of benefit sharing arrangement, , forest carbon right is considered in terms of rights to benefit from the trade of emissions reduction and removal (ERR) at national level, noting that the Government of Fiji, through the Ministry of Economy, has entered into a binding agreement, with the International Bank for Reconstruction and Development (IBRD) acting as the trustee of the Forest Carbon Partnership Facility (FCPF).

15.3.1 Lease and license holders

Lease and licence holders have rights within the terms of their lease or licence.

Holders of Leases and licences on iTaukei land

With iTaukei lands representing approximately 90% of all land in Fiji, land and forests leaseholders are lessees of iTaukei lands. The standard conditions applicable to each of the various categories of leases granted by the TLTB are prescribed in Schedule 4 of the TLTA. They include, inter alia, residential, agricultural, gardening leases, as well as “special purpose” leases. The latter has enabled the TLTB to create new categories of leases that are of particular interest in the context of REDD+, such as conservations leases (e.g. Sovi Basin conservation lease) or REDD+ conservation leases (e.g. the Emalu REDD+ lease). The maximum length of leases granted by TLTB is prescribed at 99 years except for agricultural leases that have a 30-year term under the Agricultural Landlords and Tenants Act.

Lessees of designated land under the Land Use Act

iTaukei lands designated[39] and held in the Land Bank under the Land Use Act are no longer managed by the TLTB but by the Land Use Unit in the Ministry of Lands. Leases granted by the Land Use Unit are protected leases with a term of up to 99 years. They may be issued with terms and conditions determined by the Land Use Unit (see Table 15-1), through consultation with iTaukei landowners.

Tenants of Agricultural lands

An interesting feature of ALTA (Section 4.5), from the perspective of emission reduction benefits, is the obligation of tenants to practice “good husbandry”, defined to include the application of minimum standards necessary to protect and conserve the soil, maintenance of fertility of the agricultural holding, control of pests, diseases and noxious weeds. However, unsustainable agricultural practices are a key driver of deforestation

[39] with the consent of landowners (Reg. 4, Land Use Regulations 2011) and at the discretion of the Prime Minister (s.6, Land Use Act)

and forest degradation in Fiji. Tenants of agricultural land have both rights to the land and need incentives to practice sustainable and climate-smart agriculture. Participation of tenant farmers in the ER-P activities will ensure that such conditions are fully realised. Tenant farmers are defined as small holder farmers in the list of beneficiaries.

Rights on planted trees: Plantations

Land is defined to include the trees and timber, but when forests are planted on leased land with the consent of the landowner (plantations), the ownership of the trees resides in the lessee during the term of the lease. The operations of plantations activities require compliance with the regulations applying to forestry/ timber harvesting activities. To inspire landowners to lease idle land for plantation establishment, benefits sharing arrangement for plantations is recommended to be channelled to Community Trust representing a conglomeration of landowners who own the land on which plantations are established.

15.3.2 Forestry licenses

A land lease does not authorise the lessee to fall or extract timber on the leased land without a licence and/or consent from relevant authority representing the landowner (Director for Land for State land or TLTB for iTaukei land).

The MOF, under the Forest Act (Section 4.5), regulates all forests and forest produce (except mahogany plantations) through licensing. There are 2 types of timber extraction licences: long term concessions (10-30 years) and short-term licences, with the annual licences being the most common for native forests harvesting native forests. The prevalence of annual or short-term forest harvesting licences do not create any incentive to manage forests sustainably.

In response to this situation, the ***Forest Bill*** introduces a new type of licences, the Forest Management Licence. Under the new Forest Act, when enacted, the Conservator of Forests will have the power to issue a Forest Management Licences for the purposes of creating long term tenures for persons, organisations or companies which can demonstrate a commitment to sustainable forest management in the planting and harvesting of trees within a forest plantation[40]. The holder of such licence will have a stronger case for eligibility to a share of REDD+ benefits. It is proposed to expand the definition of Forest Management License to include ER License with appropriate and relevant conditions to support ERR activities.

15.3.3 Beneficiaries nominated in trust deeds

A trust deed is a legal document whereby trustees are appointed to hold or manage a property (money, assets, land, etc.) on behalf and in the best interest of the beneficiaries. A trust deed sets out the relationship or association between parties, the nature of the property held in trust, and the beneficiaries of the trust, conferring them a legal right. Trusts are regulated under ***Trustee Act***.

Fiji is well familiar with trust funds, and LOUs commonly have established trust funds to manage community funds. For example, the TLTB requires LOUs to elect trustees to manage assignment of lease funds. Prior to the complete digitalisation of the VKB that allowed the direct transfer of funds to members of the LOU, funds were (and in some instances still do) distributed to LOUs trustees for them to redistribute to the members of the LOU. The Land Use Act also requires that the LOUs of designated land elect trustees to receive and redistribute the funds.

Conservation Trust Funds are well established internationally as an effective method of funding biodiversity management, conservation and potentially benefits from REDD+. Fiji's Sovi Basin Protected Area is an

[40] s.21 Forest Bill 2016

example of conservation trust fund. Beneficiaries of trusts can be any entity named in the trust deed, such as LOUs, communities, NGOs or Private sector.

It is expected that the Benefits Sharing Plan will assess the various categories of trusts, including charitable trusts and their potential use for benefit sharing and define the most appropriate modality for community trust.

16 NON-CARBON BENEFITS

16.1 Outline of potential Non-Carbon Benefits and identification of Priority Non-Carbon Benefits

In the absence of the Benefit Sharing Plan, this section will discuss non-carbon benefits gathered from information and experiences gained in the Readiness phase and aligned to Criteria 34-35 of the Methodological Framework.

Non-carbon benefits are benefits gathered from forest, which can be tangible or intangible. Tangible forest resources include wood, leaves, grasses, fruits, medicinal plants, fish, meat from hunting and others. Intangible forest resources include cool fresh air, flowers and pollen from the forest, erosion prevention, nutrient supply, supply of fresh cool water and many others. Forest-dependent communities look towards non-carbon benefits to sustainably improve existing livelihoods. Discussions surrounding non-carbon benefits recognise three categories including social, environmental and governance benefits.

Forest dependent communities consider non carbon benefits generically related to sustainable improvements of their existing livelihoods. High dependency of remote rural communities in Fiji on forest resources as discussed in SESA and other studies indicate non carbon benefits to include access to non-timber forest products (including medicinal plants), bee-keeping, the establishment of conservation trusts and ecotourism, which all provide opportunities for wealth creation, enhance communities' food security and facilitate the empowerment of individuals and communities to be self-sufficient and self-reliant.

The significant long-term positive environmental benefits of creating high value conservation forests (HVCFs) must also include continued traditional use of these forest resources by communities and others for collection of construction material (timber for local use), hunting and medicinal plants. Food and shelter are direct benefits, even though at times it is difficult to attach monetary values to them. But all of these non-carbon benefits serve a multitude of users. In the context of ecosystem services, such as watershed protection and reducing erosion from degraded steep slopes, these benefits directly benefit farming communities in the lower reaches of these forested watersheds.

The ER Program recognizes three broad categories of non-carbon benefits - socio economic, environmental and governance as shown in the following Table 16-1. Key non carbon benefits are identified indicating scale of potential impact, and the most immediate beneficiaries anticipated from ER Program interventions. The table also highlights priority non carbon benefits that will be included in the proposed program monitoring and evaluation systems. However, the list is non exhaustive and may be added to as the program develops. (Note some interconnectivity between the NCBs and also the safeguard monitoring requirements). The ER-Program interventions are likely to yield, directly and indirectly, multiple non carbon benefits.

Table 16-1: Non-Carbon Benefits

Type of Benefit	Future	Investment Modality	Potential Beneficiaries
Socio-Economic NCBs			
Maintaining Sustainable Livelihoods, Culture and Community (Priority NCB)	Forest-dependent users are (i) more aware of their rights and of the policies, legislation and regulations that impact on their livelihoods and (ii) horizontal linking of stakeholders with shared interests (owners/managers/users) of the forests and establishing relationships of trust, reciprocity and exchange; and, (iii) adding to the social capital of local communities by acknowledging their identity, their sense of honor and commitment to belonging to the community.	Development of integrated Land Use Plan using participatory tools such as Participatory Learning and Action tools with special emphasis to women, youth and the vulnerable in society.	All registered Beneficiaries and communities that are linked to the REDD+ ER-P activities (notably women in remote and rural areas, households living in poverty and physically and intellectually vulnerable members of community).
Valuing Forest Resources (Priority NCB)	Forest users (e.g. village women who collect NTFPs on a regular basis) have a good idea as to the value of forest resources but are unable to translate this knowledge into the public domain that other stakeholders accept.	Tools used in Integrated Land Use Plan include socio-economic assessment of local communities. Such inventory may include additional questions to gather perceived value of forest resources to compile total Economic Value of Forest resources in Fiji (from the perspective of forest users)	All stakeholders participating at District level in the ER-P accounting area.
Income Generation and Employment (priority NCB)	(i)Transparent Lease and License issued to beneficiaries (ii) Additional Income Derived from Agroforestry and Climate-Smart Investments in Agriculture.	Integrated Land Use Plan at District level, socio-economic assessment and participatory learning and action tools all contribute to identification of income generation aspirations and needs of participating communities	Community Trust and landowners
Environmental NCBs			
Promotion of Agroforestry and Shade grown cultivation (Climate-Smart Agriculture - Priority NCB)	Introduction of agroforestry and climate smart agriculture including, drought-tolerant crops, reduction of post-harvest losses, reduction in use of toxic insecticides and pesticides and home gardens to enable women to meet some of the household's food security requirements closer to their physical residence than hitherto has been occurring.	Government Program under Ministry of Agriculture and MOF. ER-P activity will also focus on this.	All households in the ER-P accounting area that rely on land-based livelihood activities associated with agriculture and agroforestry. Additionally, female members of households will benefit from reducing time met in providing non-cereal based foodstuffs.

Type of Benefit	Future	Investment Modality	Potential Beneficiaries
Conservation and Protection of Biodiversity (Priority NCB)	Support for the KBAs, IBAs and EBAs helping to manage and preserve Fiji's endemism	Fulfilment of Fiji's National Biodiversity Strategy and Action Plan under CBD focal point – Ministry of Waterways and Environment aiming to protect 17% of Fiji's land mass to fulfil Aichi Targets. Conservation Lease under the ER-P activity.	Landowners Community Trust
Protection and Maintenance of Ecosystems Services (Priority NCB)	Water shed protection for environmental services aimed at protecting watersheds and water sources.	GEF 5 Ridge to Reef Project focusing on watershed protection and catchment management including restoration of degraded areas.	Landowners Small holder farmers Community Trust
Protection and Proliferation of Medicinal Plants and Curative Practices	Identification of medicinal plants that should be protected and clear linkages established with known and potential curative practices.	MOF – Rehabilitation of Degraded Forest focusing on planting of native species of which many are medicinal plants	All stakeholders participating at District level in the ER-P activities.
Water Regulation and Watershed Management	Contributes to quantity and quality of water and probable contribution to climate change mitigation, especially in degraded watersheds.	ER-P activity focusing on Community Planting – carbon enhancement of degraded areas aimed at rehabilitating watersheds.	Landowners Small holder farmers Community Trust
Governance NCBs			
Strengthening of Village Level Socially Inclusive Governance (Priority NCB)	Involving the YMST in the process will increase capacity building to that existing organization.	Ministry of iTaukei Affairs YMST mobilization plans. ER-P activities.	All stakeholders participating at District level in the ER-P activities.
Forest Governance and Management (Priority NCB)	Contributes to sustainable forest management in ways that are not possible at present and represents a significant improvement	Ministry of Forest – Forest Warden Program linking with Ministry of iTaukei Affairs YMST.	All stakeholders participating at District level in the ER-P accounting area.
Improved Provincial Forest Management Service	Forest-dependent communities are more involved in participatory forest assessments that include data collection and reporting to the Province through the Divisional Working Group.	Ministry of Forest – Forest Warden Program linking with Ministry of iTaukei Affairs YMST and District Advisory Councils under the Ministry of Rural and Maritime Development (strengthening of existing structures).	All stakeholders participating at District level in the ER-P activities.

Type of Benefit	Future	Investment Modality	Potential Beneficiaries
Improved Land Tenure Regime (Priority NCB)	Opportunities to (i) improved forest management tenure; and, (ii) contribution to resolution of boundary disputes.	Review and adoption of the Forest Bill 2016 advocating Forest Management Licenses which supports long term land leases associated with long term forest licenses.	All stakeholders participating at District level in the ER-P accounting area.
Participatory Land Use Planning (Priority NCB)	Improved Division and district land use planning because of the involvement in the planning processes of actual land users to contribute to climate-smart agriculture.	TLTB Master Plan ER-P activity	All stakeholders participating at District level in the ER-P accounting area

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16.2 Approach for providing information on Priority Non-Carbon Benefits

The program includes the development of a comprehensive monitoring and evaluation (M&E) system that will systematically collect data on the implementation of activities including non-carbon benefits that will go to the program beneficiaries. The M&E system will be based around formal semi-annual and quarterly reporting and will include the development of different data capture forms such as paper based and digital formats. The M&E system will include evidence-based information on the prioritization of non-carbon benefits and will include both quantitative data collection and qualitative socio-economic information. The M&E will be based performance which may be compared to the baseline information collected as part of the SESA qualitative and quantitative socio–economic information to help assess the impact of the implementation of the CRAs benefit-sharing arrangements and safeguard measures that are proposed to be utilized by the Program.

A multi-stakeholder approach will be adopted for information dissemination based on a full and effective consultative, transparent and participatory process, ensuring that its design and implementation reflect inputs by relevant affected stakeholders. The approach will be guided by the Consultation Strategy and Consultation Plan developed during the Readiness Phase. This will include support by the Chiefs, landowners of different Mataqalis (clans), women, youths and other vulnerable groups. It is also important to consider existing traditional management mechanisms and norms with special attention paid to legal and customary rights of local communities which should be aligned to national laws. The ER Program should monitor and report on these non-carbon benefits as feasible, taking note of existing and emerging guidance on monitoring of non-carbon benefits by the UNFCCC, CBD, and other relevant platforms.

Extensive REDD+ awareness programmes have been undertaken for the national REDD+ pilot site of Emalu and for the communities and landowning clans in the vicinity of the pilot site for example. Village/community awareness programme are carried out by a multi-sector team which includes Forestry Department, Agriculture Department (Land Use Section), trained landowners, Provincial Office, SPC and GIZ. Regular feedback and information sharing on the progress of REDD+ is also undertaken with the pilot site landowners. Awareness programs strategically targeting beneficiaries in the REDD + sites also provide avenues for information dissemination on priority non-carbon rights.

It is through the promotion of non-carbon benefits that many REDD+ strategies address the root causes of drivers of deforestation and forest degradation, thereby catalysing change that results in emission reductions. As REDD+ activities demonstrate over time their ability to deliver various non-carbon benefits, such as improved ecosystem services or the protection of traditional livelihoods of indigenous and forest-dwelling communities, there will likely be greater political will to implement REDD+ activities.

The M&E system is expected to be based around formal semi-annual and quarterly reporting and will include the development of different data capture forms (these will include paper based and digital formats). The M&E system will include evidence-driven information on the prioritization of non-carbon benefits and will include both quantitative data collection and qualitative socio-economic information and will be based on consultations with target stakeholders (i.e. iTaukei landowners, lease holders, women, poor and near poor and other vulnerable persons) and this can be compared to the baseline information collected as part of the SESA qualitative and quantitative socio–economic information to help assess the implementation of the benefit-sharing arrangements and safeguard measures that are proposed to be utilized by the Program.

17 TITLE TO EMISSION REDUCTIONS

17.1 Authorization of the ER Program

The Minister of Economy, Government of Fiji (Hon. Aiyaz Sayed-Khaiyum) signed the Letter of Intent (LOI) to enter into **Emission Reduction Payment Agreement** with the International Bank for Reconstruction and Development (**IBRD**) as the **trustee** of the FCPF Carbon Fund for the transfer of ERs from the program "Reducing Emissions and Enhancing Livelihoods in Fiji".

Name of entity	**Ministry of Economy**
Type and description of organization	Government Organization
Main contact person	Hon. Aiyaz Sayed-Khaiyum
Title	Minister of Economy, Civil Service and Communications
Address	370 Victoria Parade, Ro Lalabalavu House, Suva. PO Box 2212, Government Buildings, Suva, Fiji.
Telephone	(679) 3307011 (679) 3216700
Email	Aiyazsayed-khaium@govt.fj
Website	http://www.economy.gov.fj/
Reference to the decree, law or other type of decision that identified this entity as the national authority on REDD+ that can approve ER Programs	The Ministry for Economy is the national focal point and will negotiate and execute the Emission Reduction Program Agreement (ER-PA) on behalf of the Republic of Fiji. This authority is through Cabinet's Decision [CP (16) 148] dated Tuesday 13th September 2016 (attached), which states: "*Cabinet: (ii) agreed that the Minister for Economy sign the "Letter Of Intent" for Fiji's Emission Reduction Program under the Forest Carbon Partnership Facility".* The Letter of Intent is attached as Annex 17-1. The Ministry of Economy is the legal representative of the Republic of Fiji and is the national focal point to the UNFCCC.

17.2 Transfer of Title to ERs

The LOI was signed on December 21, 2016 by Mr. Aiyaz Sayed-Khaiyum, The Attorney General and Minister for Economy (herein identifies as the "Program Entity") and Mr. James Reichert Acting Country Director, Timor-Leste, Papua New Guinea and Pacific Islands of the International Bank for Reconstruction and Development (IBRD) (herein identified as the "trustee" of the Carbon Fund of the Forest Carbon Partnership Facility), hereafter referred to as "the parties".

Paragraph 2 states that the LOI creates a "legally binding agreement" between the parties. It also states that should the Program Entity wish to be represented by a ministry other than the Ministry for Economy to negotiate and execute an ER-PA (Emission Reduction Program Agreement) for the ER Program with the Trustee, the Program Entity shall make a decision prior to the ER-PA Negotiation Start Date and shall notify

the Trustee. As such, there has been no official notification made to the Trustee of any variation or amendments to the LOI on the status of the Program Entity (Annex 17-1).

Considering the significance of land tenure to the title of ERs, an assessment of land tenure has been conducted as part of policy analysis, SESA and benefit sharing arrangements. The information collected on land tenure system, categories of tenure, tenure rights confirms informational needs of the indicator 28.1 and implication for title to ER as per the indicator 28.3 of the FCPF Carbon Fund Methodological Framework,

17.2.1 Land tenure

The information on Fiji land tenure summarized below and additional details are presented in section4.5. The three categories of land tenure in Fiji include: - (i) native, *iTaukei,* at approximately 90% (ii) crown land, at 4% and (iii) free-hold or private land at 6% of total land area. According to the 2013 Constitution:

a) **Crown Land** is owned by the State and may be leased for purposes approved under the Crown Lands Act. Crown Lands cannot be sold or leased except in accordance with the Crown Lands Act[41] and the Director of Lands (DOL) is the approving authority for Crown Land leases. The Act is administered by the DOL under the Ministry of Lands and Mineral Resources. Crown Lands can also be designated into the Land Bank in accordance with the provisions of the Land Use Decree 2010 (Section 6.2)[42]

b) **Native Land or *iTaukei* Land** is owned by native or indigenous Fijians. Fiji's Constitution recognises such land to be owned by customary owners of this land and that it shall not be permanently alienated, whether by sale, grant, transfer or exchange, except to the State in accordance with section 27 of the Constitution which primarily relates to compulsory acquisitions.[43]

The ownership of native land is further cemented under the *iTaukei* Lands Act[44]. The *iTaukei* land may be alienated by way of a lease for the purposes set out under the *iTaukei* Lands Trust Act. The TLTB is the administrator of the Act and the approving authority for Native or iTaukei lands leases.

To understand Fiji's *iTaukei* landownership, one must look at the hierarchy or structure of Fijian or *iTaukei* society (See Figure 17-1). Fiji is made up of 14 *Yasana* (Provinces) that form three *Matanitu* (Confederacies) namely Kubuna, Burebasaga and Tovata. Each of these Provinces is divided into *Tikina* (Districts) which comprise several villages. These villages are divided into the *Yavusa,* which is the largest social unit made up of a multiple *Mataqali* that are custodians of specific traditional roles and tasks within the *Yavusa.* The *Mataqali* is the land-owning unit and is made up of multiple *Tokatoka* or related families except in certain provinces where the *Tokatoka* is the single land-owning unit.

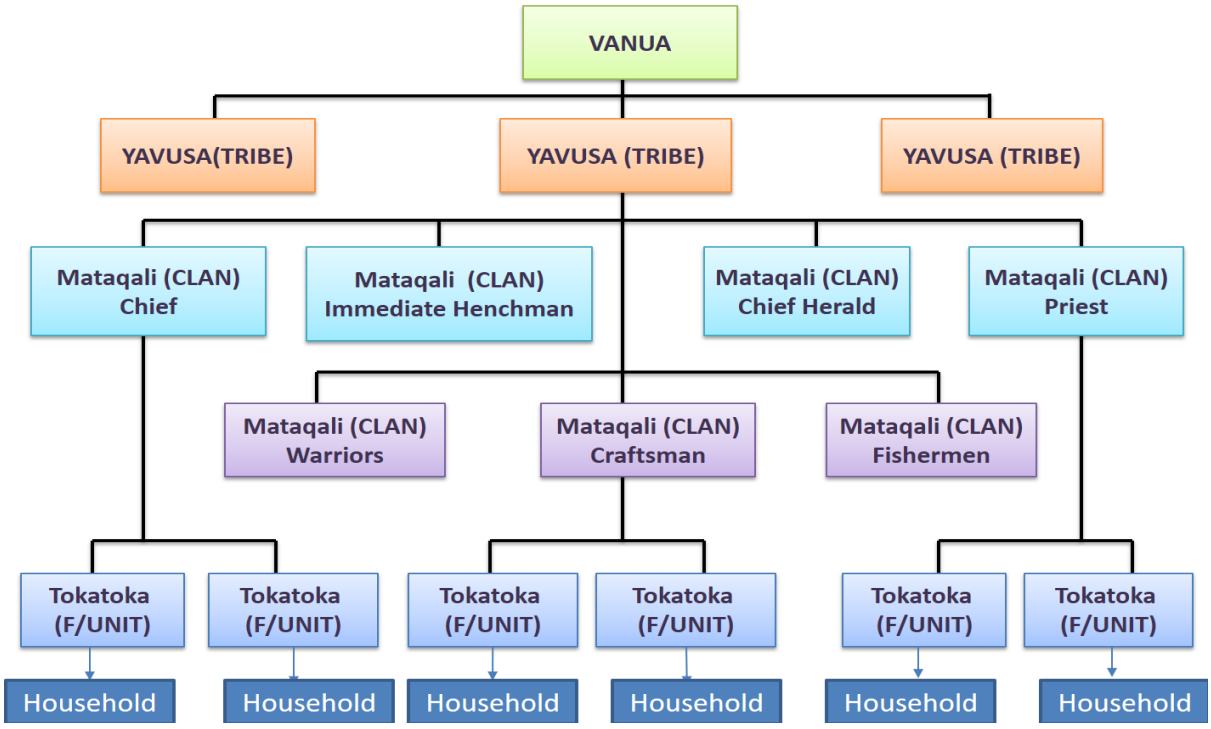
In 2010, the Government introduced the *Land Use Decree 2010* which provides an alternative option for Native or *iTaukei* land-owning units and the State to designate their unencumbered land[45] for registration in the Land Use Bank[46]. The objective of the Decree is to:

(a) utilize designated native land in a manner that is in the best interest of native landowners; and
(b) utilize designated crown land with a view to achieving optimal return to the State"[47].

Ownership of designated land remains with the Native or *iTaukei* land-owning unit and the State.[48] The Land Use Decree 2010 is administered by the Land Use Unit under the Director of Land (DOL) who is the approving authority and may lease designated land in accordance with the Land Use Decree.

c) **Freehold Land** is privately-owned and may be alienated by the owner in accordance with the Land Transfer Act. In fact, all three categories of land in Fiji need to comply with their respective legislations that govern the process for alienation and covered the Land Transfer Act.

[41] Section 3, Crown Lands Act, Cap 132
[42] Section 6 (2), Land Use Decree 2010
[43] Section 28(1), Constitution of the Republic of Fiji 2013
[44] Section 3, *iTaukei* Lands Act, Cap 133
[45] Section 4 of the Land Use Decree 2010
[46] Section 7 of the Land Use Decree 2010
[47] Section 3 (1) (a)-(b) of the Land Use Decree 2010
[48] Section 5 of the Land Use Decree 2010



Source: Ministry of iTaukei Affairs

Figure 17-1 : Hierarchy (structure) of a Classical iTaukei Society

In relation to land tenure, considering the importance of iTaukei landownership of about 90 percent of land in the country, the iTaukei land tenure provisions are expected to be integral to regulations on the title to carbon. Land owning clans (the *Mataqali*) of iTaukei land are expected to have title to the carbon emission reductions and need to transfer the title of emission reductions to the Carbon Fund to allow use or trading of the emission reduction.

The number of land owning clans in Fiji is relatively small and especially in the forest areas, average landownership of clans in Fiji is 149ha, and clans own more than 1,000ha and up to a maximum land holding of 9000ha, and so it is not expected that the numbers of individual titles would present an issue for transfer, particularly if the Community REDD+ Agreement (CRA) process is used as the basis for the title where a number of clans can come together and begin the carbon title process.

Ownership of Forest Carbon - Current Legal Position

Before developing a legislative and policy framework for forest carbon rights, it is imperative to first establish who owns the carbon sink in standing forest and soil under existing laws. The general position is ownership to land could include rights to carbon. This is confirmed under the current legal system in that a landowner in the context of iTaukei land, Crown Land and Freehold land owns the forest growing naturally and therefore by implication, must also own forest carbon rights. This position is founded on existing definition of landownership and includes interest in land, even if that interest is a right of exclusive possession of land and its inheritance by heirs. The rights to lease payment, easement or profit constitute an interest in land that legally extends to carbon rights.

The provisions of the Clause 8 of Forest Decree and Mining Act confirm that the owner of land also owns the forest on that land. The Forest Decree is explicit in stating that the ownership of forest timber remains with the owners of the land whilst the trees are attached to the land. Where trees are legally cut, the existence of

mandated royalty payment implies that it is accepted that the landowner owns the trees growing on the land. Under the Mining Act, a tenement owner can cut specified trees within the classes specified under (Mining Act section 20 and 24(1) (c) with the consent of the owner. This underlies, by implication proprietary interest in trees on land for owners.

On iTaukei Land, an iTaukei landowner owns forest growing naturally on the land, and by implication must also own the forest carbon rights as the common law presumes that owner of land also owns trees, and therefore also owns the carbon rights as reflected in the Statutory definition of land under section 3 of iTaukei Lands Act that recognizes use and customary access rights. Under leased iTaukei land, there is a general reservation in the lease conditions whereby the ownership of trees growing on the land is reserved to the landowner or the lessor (iTaukei Land Trust Board as trustee for the landowner). Therefore, landowner (and Trustee) has forest carbon rights to the trees growing naturally on the land.

There is also a standard clause to ensure that a landowner shares benefit from leased land not foreseen at the execution of lease, in the event land in question is used for purposes of REDD+ projects.

In case of plantation forest on iTaukei land, planted forest is owned by the lessee, who has the full right over plantation trees but not in relation to the stored carbon. Carbon rights on Crown Lands remain with the State. This includes forest on State leases and Mangroves. On freehold lands, owner holds carbon rights to forest growing on the land. Finally, the recent developments such as the Forest Bill 13 of 2016 recognize the rights to forest carbon sequestration projects.

Legal examination of carbon ownership under existing laws articulates the current position, which by confer ownership to the owner of the land thus removes emphasis on the forest. In the absence of legislation that creates carbon as a property, such as forest plantations, carbon ownership can be transferred to the owner of the forest through terms of agreement with landowners. Without affecting underlying ownership, any transfer of ownership of carbon rights can also be facilitated through sub lease and trade. The MOF in collaboration with the Ministry of Lands and iTaukei Land Trust Board is expected to define and confer property rights to carbon and its modes of transfer. Considering complexities surrounding carbon valuation and trade as commodity and equitable benefit sharing agreements, more can be achieved through development of legislation to address specific ancillaries and possible gaps.

Legal carbon covenant with contractual terms of forest plantation lease conditions can be added as part of TLTB leases, licenses, and regulations for conservation leases or specific carbon project leases. The proposed carbon covenant perpetuates and protects the dominant land use type and its ancillaries (carbon sequestration), as a conditional precedent that passes with the land. These terms are central to the lease itself and will be an inherent condition on the title until the land use remains unchanged.

Proper and expedient legislative review and process must be facilitated to ensure drafting and passage of the proposed specific carbon rights legislation to capture the smooth process, in defining and recognizing carbon as property and conferring of its title ownership to enable protection of carbon rights, its transfer and the facilitation of trade. However, this necessitates parallel amendments to current Leases and Licenses Regulations to TLTB, which must also be facilitated as an initiative of relevant Ministries for gazettal and timely implementation.

17.2.2 Forest law and regulation

As per the Forest Decree (1992), the Minister for Forestry (MOF) is authorized by Parliament to manage the forest resources and act on behalf of the Government of Fiji.
A Forest Bill is being drafted to make amendments to the Forest Decree (1992) and will cover aspects of forest administration (part 2), forest policy (part 3), licensing (part 4) fees, timber royalties and customary rights (part 5) and forest protection (part 6). The Bill will include provisions to amend existing statues related to iTaukei customary rights (paragraph 30, part 5) and will include forest carbon trading (paragraph 33, part 6). The Forest Bill is expected to be debated in Parliament in December 2019.

17.2.3 Carbon title

As carbon right is an interest linked to the land, it would be expected to be dealt with in similar ways to any other asset (and interest) attached to a land lease i.e. as part of the lease for transfer, surrender or extension and the details of this would need to be included in the lease conditions in the form of the "*carbon title*".

The draft Forest Bill will provide the following definitions in relation to the Carbon Title:

- "carbon" means chemical element present in all organic matter which contributes in the form of various greenhouse gases, for example carbon dioxide and methane to climate change;
- "forest carbon" means carbon stored in forest biomass
- "carbon credit" is a generic term for any tradable certificate or permit representing the right to emit one ton of carbon dioxide or the mass of another greenhouse gas with a carbon dioxide equivalent (tCO2e) to one ton of carbon dioxide;

17.2.4 Transfer of title to ERs

The draft Forest Bill will make provisions for:

- Forest Carbon Trading, which registers and allows the trading of the carbon title under the Emission Reduction Program Agreement;

- Emission Reduction License, with the following conditions:
    - Is issued to the Carbon Title Holder to participate in the allowable ER activities, and complying the procedures and standards under the Emission Reduction Program Agreement;
    - Empowers the MOF to enter into such land on which the ER activities are being conducted to monitor, validate, verify and report on the standards under the National Emission Reduction Program Agreement;

In the absence of existing legal framework on carbon title and transfer of carbon/ER title, the above provisions are considered as the guidance for advancing the legal framework on carbon title and transfer. In the case of approval of draft Forest Bill, the regulations governing the carbon title and transfer are expected to be approved.

The process and stakeholders relevant to carbon title and transfer of title to carbon/ER is expected to be deliberated in designing regulations and in the interim serve as guidance to a Committee of the Forestry Board.

In designing the regulations and guidance, MOF and the Provincial Working Committee (PWC) is expected to coordinate with the *Mataqalis*, through the Yaubula Management Support Teams (YMST) and the *iTaukei* Land Trust Board (TLTB) (for *iTaukei* native land) and with the DOL (for State and Free-hold land) to develop and design the approach to link carbon title to the land registry, for example, the Community REDD+ Agreement could be a first step before full registration of the title and included in the MOF REDD+ registry and the TLTB and DOL land registration systems.

17.2.5 Procedure to be considered in designing regulations on carbon title and transfer of ERs

The issuance of carbon title is expected to be coordinated by TLTB and DOL in collaboration with MOF and record the title and any carbon lease covenants that would be applied to existing and new land leases and the MOF will be responsible for monitoring of forest cover and lease conditions related to forest management and use. This approach follows the Forest Decree, land laws and draft Forest Bill that jointly deal and regulate assets that are attached to land. The laws support customary and legal ownership but will assign administration and management rights to the State. This includes regulation on distribution of benefits and profits generated from natural forest. The State provides a clear and indefeasible registered title under existing land laws, and the government can also issue indefeasible guaranteed carbon title in accordance with land laws and enable

carbon credit for registration and trade. Given that the state issues the lease and carbon title, the State can also transfer it through relevant entity. The Ministry of Economy as the legal representative of Government of Fiji and the national focal point for UNFCCC can communicate on the title and transfer of ERs. The Ministry of Economy is also empowered to enter into international legal and commercial transaction on ERs on behalf of the Government of Fiji.

The carbon title (i.e. registration of carbon right) relates only to ownership of the benefits and liabilities (losses) of forest carbon sequestration from the land, and any guarantee of the value of carbon may have i.e. the value of carbon is based on the contractual agreement as per terms of the ER-PA. The transfer of carbon title, therefore, would not confer ownership of land. As a property in gross, all dealings regarding the transfer and trade of carbon to the Carbon Fund is restricted to the carbon and does not include the tree and/or any other resource including the land. This safeguard and protects the legal ownership, in the case of native land, the iTaukei Landowners.

Rights given by the state in a carbon title are intended to function as tradable forest and land interests. By recognizing the carbon right as a land interest rather than a totally separate contractual right, the title owner / lease holder may have a stronger, more durable right, that can be registered with the land title and supporting regulations (a carbon covenant and definition of this may be included in an amendment to the land laws against the registered land title/ lease).

Carbon REDD+ Agreements (CRA)

Carbon REDD+ Agreement associated with ER activities may also be used by MOF as a first expression of interest by individuals to participate in ER-P activities. It may also represent consensus where a number of clans can come together and begin the carbon title process through initial assessment by the Divisional REDD+ Working Groups (DRWG) and Yaubula Management Support Teams (YMST)) on viability of carrying out various activities outlines in Section 4.3. Once suitability is confirmed, lease, license and other registration process may forge ahead. CRA is also a tool that can be used to cluster beneficiaries where a number of clans with lease and license to implement ER activities come together to form a Community Trust (Section 9, 14,15,16) in alignment with the Benefits Sharing Mechanism.

Lease Agreement

To ensure that forest cover is kept on the land and securing the carbon title, it is proposed that a **carbon covenant** of use (this will provide regulations to control or modify certain aspects of land use, aimed at protecting the carbon resource) will be included into the lease conditions of the land use title. Such carbon covenant would set out how the land is to be used or managed over a period of time, and would be intended to ensure preservation of the trees or continuation of land management practices that sequester the carbon (for example, it could encourage SMF, agroforestry and sustainable farming techniques, carbon enhancement planting or protection of native forest as well as the adoption of diameter-limit tables and full implementation of FFHCOP as an integral part of harvesting regimes). The lease holder/ landowner who has entered into a carbon covenant would have obligations to the owner of the carbon right (the state) even if the title is transferred by the state and this would, for example, include fire protection as is already required in all cases of the forest management entities. The regulations of carbon covenant would be added to the lease conditions (for both, *iTaukei* native, State and Free-hold land) and would effectively make up additional lease conditions currently administered by the TLTB and MOL/Land Bank through the land administration land registration system. This would be a straightforward normal process of land administration and may be done quite easily, as relatively few leases would be affected.

Proportion of the Accounting Area with carbon title

It is not proposed to issue a single carbon title over the whole of the ER-P, rather the main areas under the title would be separate leases (only a few hundred are expected and these would be managed through the TLTB or MOL/Land Bank).

All registered leasehold land including forested areas have surveyed boundaries, however, some of the surveyed boundaries are inaccurate which can lead to boundary disputes. Under business as usual such boundary disputes are resolved through the mediation and a Commission. During the ER-P, such conflict will be addressed through the FGRM (see Annex 14-1). A carbon covenant may also introduce new additional restrictions on land use/ land leases to individuals, if the area they use and occupy the land, so on *iTaukei* native land, the *Mataqali* clan members would need to agree. Absentee *Mataqali* still have all benefits and these are shared by a community and all community members register their interest/rights of use including the "absentee" landowners.

Although there are several the different forest management users i.e. a mixture of customary land, State and Freehold land; the carbon title will need to be based on the existing land lease registration system in use and the processes in place including:

- acknowledgement of customary ownership and benefit sharing already in use to lease large contiguous forest block making it easy for the issuance of a carbon title (as can be seen in Figure 17.2) and involvement of the local communities; and
- issuing a defined known lease that includes the carbon title area tied to the forest management entities including the communities participating. This may help to limit the institutional, management issues and resources required to successfully register the carbon right and carbon covenant while reducing the potential area of land use conflicts.

Registration of carbon title, carbon credit and carbon covenant

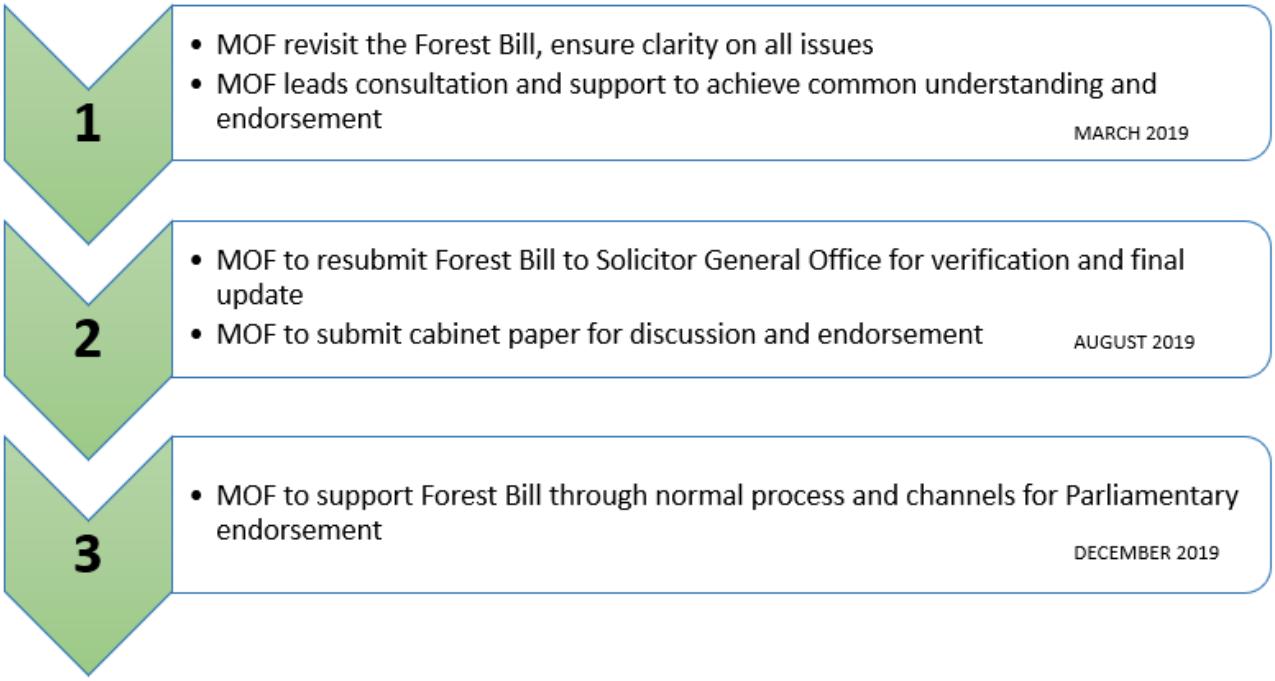
As with all land titles, interests, assets, and dealings, the carbon title and carbon covenant are expected to be added to the registered leased land entered in the TLTB and MOL/Land Bank Land Title Registry. The procedures are already included in the land laws and updates could be issued through amendments to regulations for registration. This framework is appropriate to record interests, including carbon as a condition precedent on to the title in public records. This registration process minimizes any chance of duplication or double counting, as compulsory registration prevents the unregistered forest carbon sequestration rights and dealings with un-registered land interests. The registration of the carbon covenant also reduces the chance of covenant being ignored. The registration of the carbon covenant can be done retrospectively and would become a land encumbrance as it is treated as a constituent of the underlying carbon right.

17.2.6 Parliament approval of draft Forest Bill to clarify the carbon title and transfer of ER

Deliberations and approval of draft Forest Bill are expected to provide clarity on the steps needed to clarify title and transfer of ERs. A roadmap for the process is shown below in Figure 17.2.

It is anticipated that approval of the draft Forest Bill No. 13 and corresponding regulations on carbon title and its transfer will comply with indicators 36.1 and 36.3 the FCPF CF Methodological Framework on the ability of the Government of Fiji to transfer the title of ERs to FCPF Carbon Fund. The legal framework of land tenure and benefit sharing in Fiji adequately support the linkage between land tenure, carbon title and transfer of title and complies with the requirements of indicator 36.2 of the FCPF CF Methodological Framework. However, the steps need to clarify through a framework of laws and regulations. In compliance with international laws, The State will also provide guarantee to the traded ER, before they are transferred, retired and cancelled.

Figure 17-2**: Roadmap for carbon title and carbon covenant**



18 DATA MANAGEMENT AND REGISTRY SYSTEMS

18.1 Participation under other GHG initiatives

The ER program covers 94% of forest area and 90% of the land mass of Fiji and approximates as the national ER program. Other REDD+ initiatives launched within the ER program area need to nest within the ER program ensuring that the project's FRL, MRV/MMR, and safeguard are consistent with that of the ER program.

During Fiji's Reference Period (2006 – 2016) two private REDD+ projects were established;

1. the Drawa Rainforest Conservation Project[49] which is an Improvement Forest Management Project which leads to conservation of mature indigenous rainforest through avoiding forest degradation, by means of legal protection of forest.
2. the Nakauvadra Community Based Reforestation project[50] which is an A/R project on degraded grasslands.

The project boundaries area shown in Figure 1 and 2. Details of methodology, activities, pools and gases considered by each project are summarised in Table 18-1.

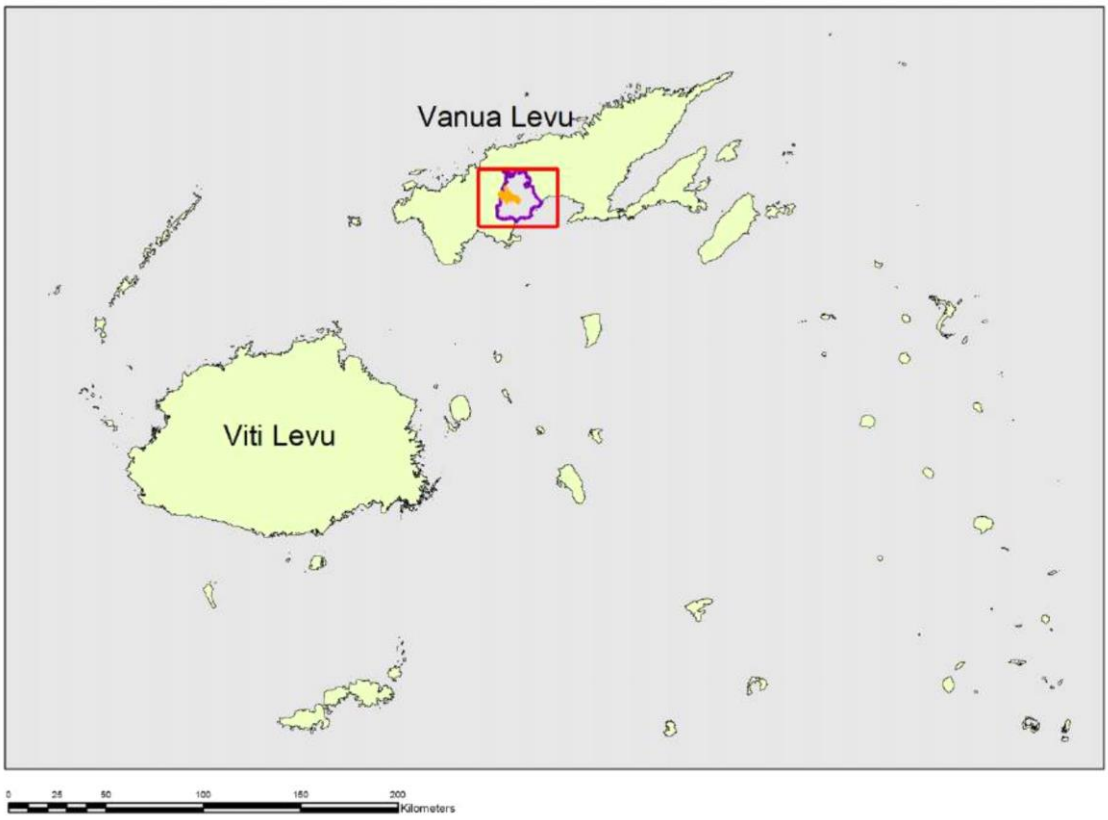


Figure 18-1: Location of the Drawa Rainforest Conservation Project. Districts are demarcated by purple boundaries. Drawa Project is demarcated by orange boundary.

[49] More detail on the Drawa Rainforest Conservation Project can be found here: http://www.nakau.org/drawa---fiji.html

[50] More detail on the Nakauvadra Community Project can be found here: http://www.climate-standards.org/2013/04/22/the-nakauvadra-community-based-reforestation-project/

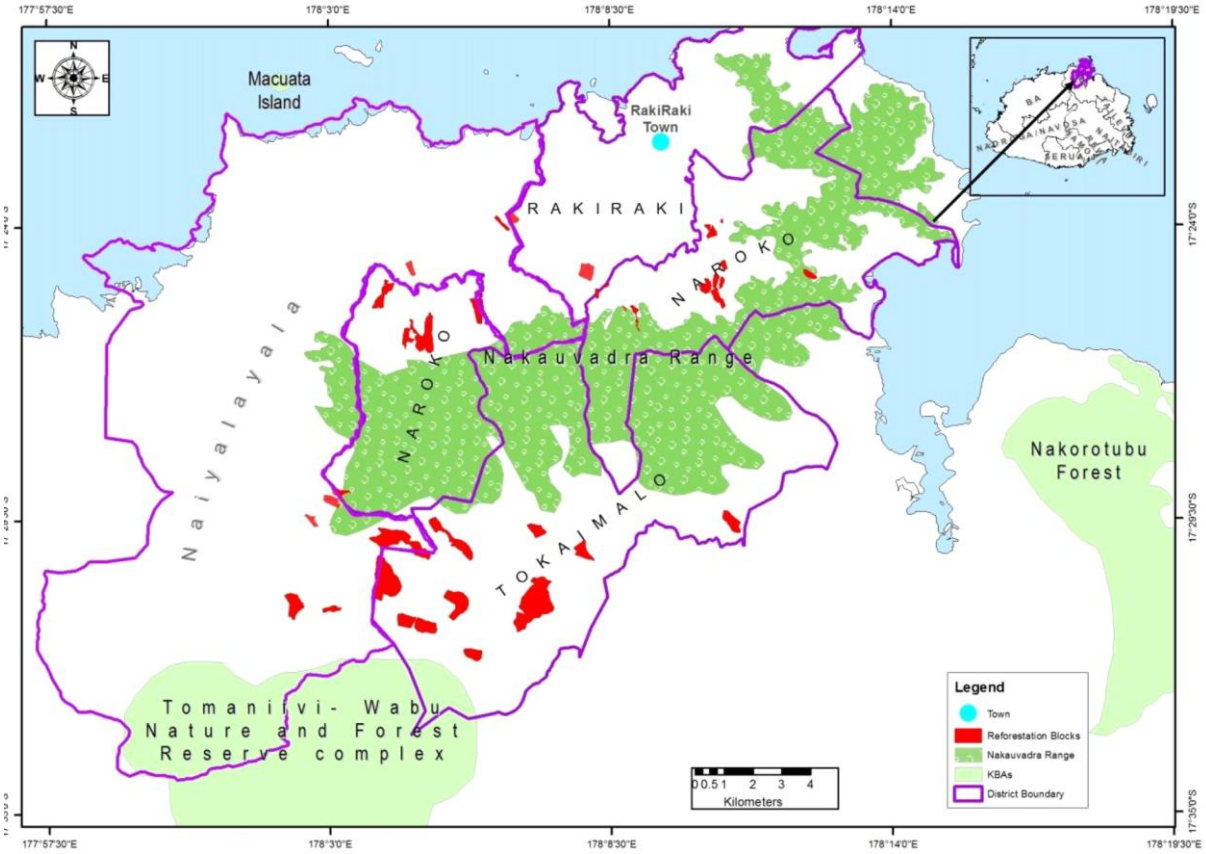


Figure 18-2: Location of the Nakauvadra Community Based Reforestation. Districts are demarcated by purple boundaries. Project areas are demarcated by red boundaries.

Table 18-1: Summary of REDD+ Projects in Fiji

Project Proponent	Nakau Programme Pty Ltd	Conservation International Fiji
Name	Drawa Rainforest Conservation Project	Nakauvadra Community Based Reforestation project
Description	The Project aims to conserve mature indigenous rainforest through avoiding forest degradation, by means of legal protection of forest. The project activity involves termination of baseline logging activities and placement of Project Area into a protected reserve.	The project incorporates a community-based reforestation model, planting hardwood timber species on 28% of the total area which can be sustainably harvested upon reaching maturity to provide for long term income generation for the landowning communities. Reforestation of the remaining 72% of the project site will be using native and endemic species.
Area	Protected Areas - 4,120 ha Eligible Crediting Area - 1,548 ha	1,135 ha
Standard	Plan Vivo	Climate Community and Biodiversity Standard

Project Proponent	Nakau Programme Pty Ltd	Conservation International Fiji
Methodology	Technical Specifications Module (C) 1.1 (IFM-LtPF)	CDM Methodology AR-ACM0003: Afforestation and reforestation of lands except wetlands' (Version 01.0.0).
REDD+ Activities	Improved Forest Management Project	Enhancement of Carbon Stocks (Afforestation/Reforestation)
Pools Included	Aboveground biomass Belowground biomass Deadwood Harvested wood products	Aboveground biomass Belowground biomass
Gases Included	CO_2, CH_4, N_2O	CO_2
Crediting Period	2012 – 2042	2009 - 2039
Estimated Net Emissions Reductions	Annual net carbon credits (years 1-15) = 18,800tCO_2e Annual net carbon credits (years 16-30) = 10,294 tCO_2e	283,489 tCO_2e Annual net carbon credits (years 1 - 30) = 9,449 tCO_e
Carbon credits to be issued and sold?	Yes – carbon credits have been registered and transacted with an international buyer.	No – credits are not registered from this project. The CCB standard is used only as a monitoring framework to report the ecosystem services of this project.

Neither project has the same scope nor apply the exact same methodology as that applied in the FRL. As a result, the project emission reduction estimates and those estimated by the ER program are not equivalent, given the differences in variables and procedures to establish the baselines.

Status of the Drawa Project

The Drawa project has completed validation and verification under the Plan Vivo standard. According to the projects 2017 Annual Report51 a total of 12,000 credits have been issued of the total 55,600 credits generated between 2012 – 2015. As an early mover, the Drawa Rainforest Conservation Project made its first sale of carbon credits in 2018. **The estimated net annual emissions removals from the Drawa project represents 1.5% of the annual emissions reductions expected under the ER Program,** representing a very small proportion. As such it is proposed to exclude the Drawa Project Area from the ER program accounting area to avoid double counting. **Therefore, this project will operate independently for the period of the ER-PA. It will be excluded from the ER program accounting area.** Once the nesting guideline is established (see roadmap details below in Table 18.2) the Drawa project will be expected to align with the national methodology by 2025.

Status of the Nakauvadra Community Based Reforestation project

The Nakauvadra Community Based Reforestation project is an ecosystems services project financially supported by Fiji Water in partnership with Conservation International as delivery partner. The Project has been validated against the Climate Community and Biodiversity Standard but to date the Nakauvadra Community Based Reforestation project has not been verified against the CCB standard[52]. This project does not intend to issue carbon credits for transaction. Indeed, validation/verification to the CCB Program does not

[51] The Drawa Project 2017 Annual Report is available form the Plan Vivo website.
[52] Validation demonstrates that a project has been designed so that it is likely to deliver multiple benefits, while verification demonstrates that multiple benefits have been delivered.

result in the issuance of tradable climate, community and biodiversity benefits[53]. There can be a maximum of 5 years between validation and subsequent verifications[54].

Establishment of Fiji's Nesting Guidelines

To avoid double-counting risks, the MOF is developing a Nesting Guideline to establish a single national accounting framework within which projects can nest. To this end, a roadmap to develop the nesting guidelines has been established (Table 18.2). The main milestones in the roadmap are:

- **Enactment of the Forest Bill 2016** which will lay the regulatory foundation
- **Establish carbon trading regulations**
- **Development of a draft technical proposal for nesting that will incorporate consensus among stakeholders.**
- **Publish Nesting Draft Guidelines** to enable projects to be nested in the national system and avoid double counting of reductions.
- **Conduct a public consolation period** for socialisation and finalisation of the guidelines
- **Finalisation and Adoption of the Guidelines**

Table 18-2: Nesting Roadmap for REDD+ projects in Fiji (2019 – 2020)

		2019			2020			
No	**Activities**	**May-July**	**Aug-Oct**	**Nov-Dec**	**Jan-March**	**April-June**	**July-Sept**	**Oct-Dec**
1	National Forest Reference Level							
2	Enactment of the Forest Bill 2016 by the Parliament							
3	Carbon Trading Regulation							
4	Publication of Draft Technical Proposal for Nesting Guidelines							
5	Consultation Period							
6	Finalisation of Technical Proposal							
7	Approval of Nesting Guidelines							

The expected result of the nesting process is that by the end of 2020, a set of rules will be in place to standardize emission reduction estimates, including the required use of the national monitoring system at the local and regional levels. The Drawa Project will be excluded from the ER Programme accounting area and allowed to continue with its accounting methodology between 2020 – 2025 (the duration of the ER Programme) following which it will be expected to align with the national nesting guidelines.

[53] http://verra.org/wp-content/uploads/2017/06/CCB-Program-Rules-v3.1.pdf
[54] http://verra.org/wp-content/uploads/2016/11/CCB_Standards_Rules_v3.0_content_map.pdf

18.2 Data management and Registry systems to avoid multiple claims to ERs

The Data Management System is currently under development, and a registry function is anticipated in the future. The REDD+ registry will be part of carbon registry for all sectors to ensure integrity and consistency of the NDC, Greenhouse Gas Inventory (GHG-I), the National REDD+ Program and National Forest Monitoring System, and domestic carbon market, if operational in the future. For the Emission Reduction Program, a registry system is proposed to be established and managed in the country. The registry will record and tracks carbon units result based payment and for market mechanism. Besides, the registry will confirm that each ER unit is appropriately issued, serialized, transferred, retired and/or canceled and avoid double counting of an ER unit.

Climate Change Division of Ministry of Economy is a national focal point for coordinating the implementation and reporting of national GHG inventory to the UNFCCC. The Ministry of Economy is planning to establish a central Data Management System and carbon registry. The system will measure, verify and report on the country's progress to the UNFCCC on GHG emission reduction efforts associated with the implementation of NDC. Fiji intends to submit it 3rd national communication report as well as first Biennial Updating Report in 2019. Climate Change Division of the Ministry of Economy is coordinating and facilitating the development and submission of these reports. It is aimed that through this responsibility of development and submission of different reports to the UNFCCC, the Ministry of Economy will improve institutional capacity to manage GHG related information, enhance capacity and manage data on GHG emissions and removals in the country.

18.2.1 Data management system

The Government of Fiji (GoF) plans to maintain a comprehensive National REDD+ Program and Projects Data Management System as a component of part of the National Forest Data Management System (Figure 18-1) and complies with the indicator 37.1 of the FCPF Methodological Framework.

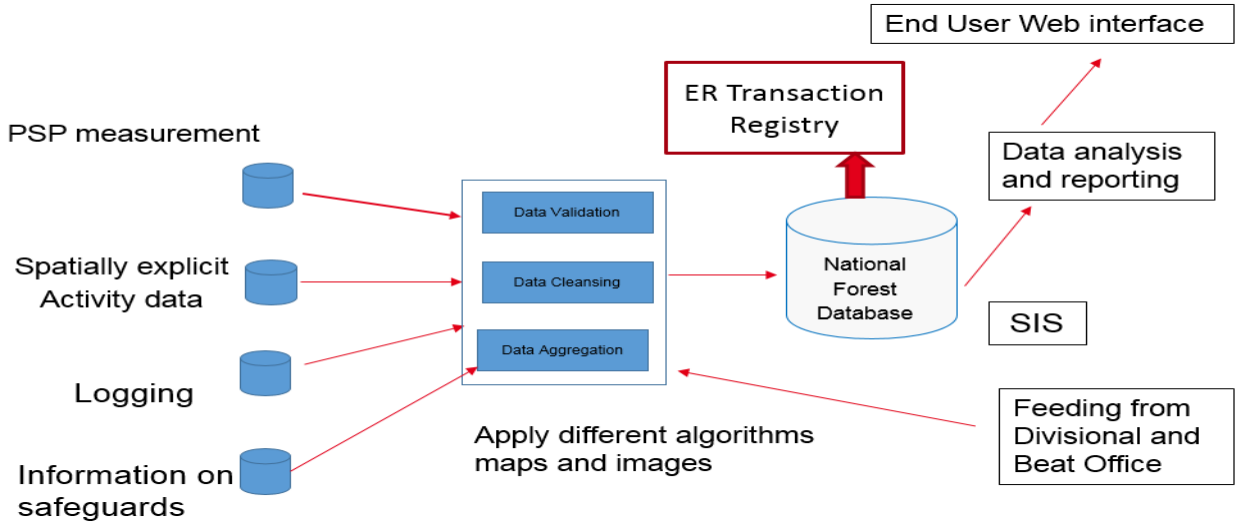


Figure 18-3 Proposed architecture of National Forest Data Management System

REDD+ Database Management System has been established under the MOF. The database is based on open source software developed and implemented with functionalities for data input and web-access and the

database system can adapt to national reporting requirements. An illustration of the National Forest Database System is shown in Figure 18-2.

The Data Management System is flexible to adapt to requirements such as a safeguard information system and biodiversity monitoring system. The Data Management System and a web-based portal are intended to be operational during the end of Readiness Phase 2019-2020. Fiji REDD+ Data Management System will provide the following information:

- *National Forest Monitoring System database:* The database will provide information related to carbon accounting which includes activity data, carbon pools, Emission/Removal Factors, average annual emissions of the reference period, auxiliary data, background report, and metadata. Likewise, the NFMS database will provide an estimation of emissions and removals of an accounting period, archive of land use change maps and data on national forest inventory, and data related to permanent sample plots.
- *REDD+ program and project database:* The existing Database Management System designed at the Management Services Division of the MOF has a provision *REDD+ program and project database:* The existing Database Management System designed at the Management Services Division of the MOF has a provision to store data and information related to REDD+ programs and projects such as project boundary, project locations, implementation entity, forest reference level and monitoring and reporting and confirms to the requirements of the indicator 37.2 of the FCPF CF Methodological Framework. Using a stepwise approach, the Database Management System will be upgraded and is expected to operational during the implementation of the ER program.
- *Monitoring and reporting of results data:* The database will provide information on the ER program activities, safeguards, and non-carbon benefits and on parameters relevant for estimation of GHG emissions and removals and is supported with R- script to generate reports. The system will be improved to meet the national and international requirements of data storage and reporting. In compliance of the indicator 37.3 of the FCPF CF Methodological Framework, the data and information of the ER program will be available to the public in the official language (English) of Fiji.
- *Hardware and software system*: Data server, backup server, computers and supporting software will be installed.
- *Standard Operating Procedures (SOP) on maintaining and operating data management system*: The SOP(s) have been prepared for maintaining and operating the database system. In addition, functionality for third party audit of the database system is proposed in compliance of the indicator 37.4 of the FCPF CF Methodological Framework.

18.2.2 National registry

There is no REDD+ registry currently in the country. In the future, it is proposed to add a registry function to the Data Management System. The approach to develop a REDD+ registry system will begin by linking existing National Forest Database Management System to the central carbon registry to be installed at the Ministry of Economy to allow the country to account and report on REDD+ emission reductions and to avoid double counting in their generation and transaction.

In compliance of the indicator 38.1 of FCPF CF Methdological Framework, GoF proposes to develop capacity to establish and to operate national transaction registry through a stepwise approach. The registry system is expected to meet the domestic and internationally carbon accounting and reporting requirements, to track ER transfers from the ER program or any other REDD+ initiative and to record and report on them.

Fiji's national REDD+ Registry is expected to take time to build and operate and will not be ready at the start of the ER-PA. Until the GoF develops such capacity, the services of an ER transaction registry are needed for few years. The GoF has decided to use the FCPF Centralized ER Transaction Registry, and therefore meets the requirements of the indicators 38.1, 38.2 and 38.3 of the FCPF Carbon Fund Methodological Framework. In terms of awareness and keeping the public informed, The Database Management System will make information available to the public via internet in English and Fijian languages. The information will revolve around the following aspects of the ER Program:

1. The Program Entity, and details of the ER-P Agreement
2. Geographical boundaries of the ER program,
3. The details of the Reference Level
4. Methods used to estimate carbon
5. Result tables which include:
    a) Emission Level and associated activities, e.g. deforestation, forest degradation and harvesting of plantation,
    b) Emission Reduction and associated activities, e.g. avoiding deforestation and forest degradation and enhancement of carbon stocks

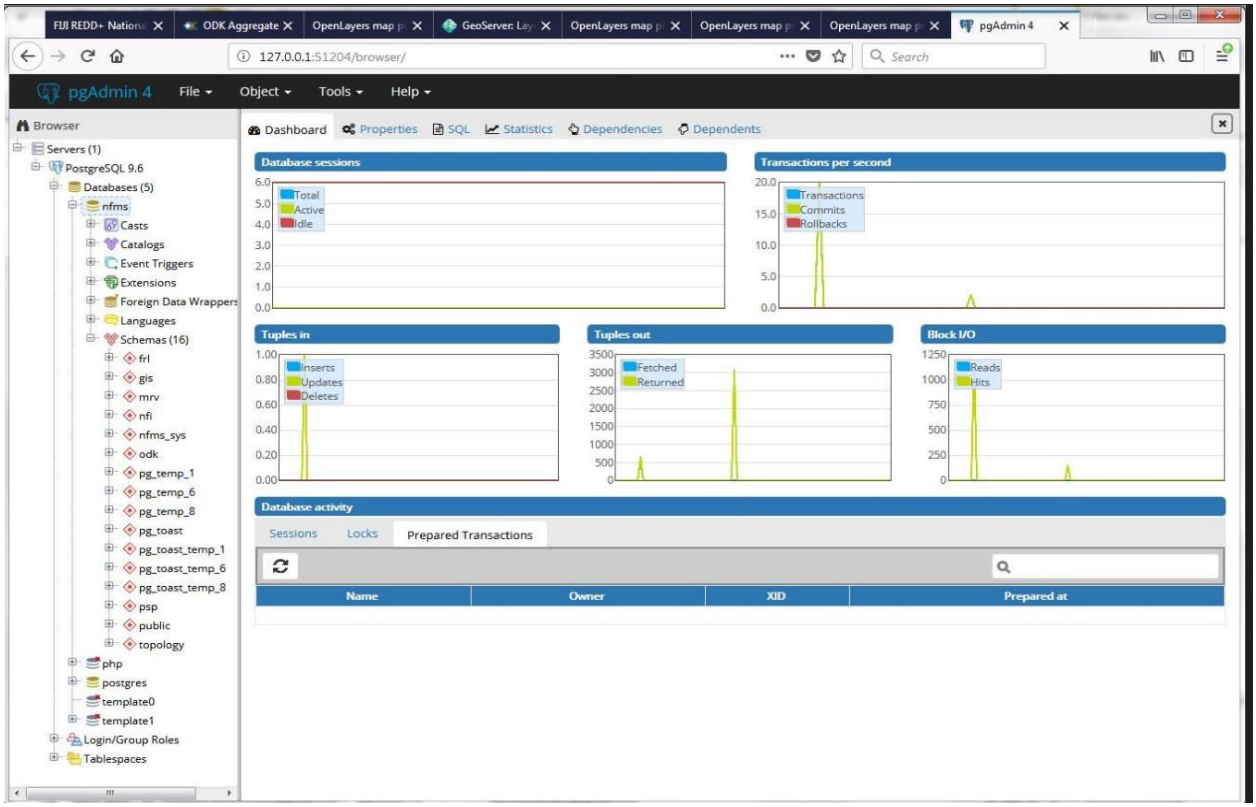


Figure 18-4: A Screenshot of the Data Management System

The information disseminated will be reviewed over time to ensure that all issues, queries and questions are thoroughly answered.

Carbon Registry

Double counting (or double claiming) is a term used to describe the use of a single emission reduction unit more than once. If Fiji's nested system allocates finance or ERs generated at the higher scale, there is no risk of double counting because the allocations are designed to fit within the envelope of jurisdictional performance. However, where jurisdictions and projects or sub-units with the jurisdictional area are accounting simultaneously (such as the Drawa and Nakauvadra projects), a mechanism to avoid double counting is required, including the system to manage liabilities (through buffer or another mechanism) that may occur when 'truing up' the accounting. Regardless of the mechanism agreed it needs to ensure that REDD+ projects report any issuance and sale of ERs are accounted for in national registry to avoid double counting. The Government of Fiji plans to consider these aspects in the adoption of its national registry.

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20 ANNEXES

The Annexes are attached as separate documents aimed at providing detailed description, data and supplementary information. Below is a list of annexes attached to the ER-PD.

Annex 2-1: Terms of Reference for REDD+ Steering Committee

Annex 4-1: Drivers of Deforestation and Forest Degradation in Fiji

Annex 4-2: Intervention Technical Note [01-06]

Annex 5-1: Capacity building activities undertaken by different organizations supporting REDD+ Development and Readiness Phase

Annex 6-1: Letter of Intent

Annex 8-1: Forest Reference Level Calculations

Annex 8-2: Generation of Activity Data (2000-2006)

Annex 8-3: Estimation of Emission and Removal Factors

Annex 8-4: Estimation of Emission from Fire and Fuelwood

Annex 14-1: Feedback Grievance and Redress Mechanism

Annex 15-1: Types of Benefit Sharing Models in Fiji

Annex 15-2: Matrix on Definition of Beneficiaries and Types of Benefits

Annex 17-1: Cabinet Decision endorsing REDD+ and supporting Ministry of Economy