Ministry of Forestry

FCPF Readiness Project Fiji

Strategic Environmental Social Assessment (SESA)

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Ministry of Forestry
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	Acronyms and Abbreviation
ADB	Asian Development Bank
AFOLU	Agriculture forestry and other land use
ALTA	Agricultural Land and Tenant Act
AZE	Alliance for Zero Extinction
BAU	Business As Usual - scenario
BSC	Biodiversity Steering Committee
BSM	Benefit Sharing Mechanism
BSP	Benefit Sharing Plan
CBD	Convention of Biological Diversity
CF	Carbon Fund
COP	Conference of parties
CRA	Community REDD+ Agreement
CSO	Civil Society Organisation
DLT	Diameter Limit Table
DRWG	Divisional REDD+ Working Groups
EBA	Endemic Bird Area
ECAL	Environmental and Climate Adaptation Levy
EMA	Environment Management Act
EMMP	Environmental Mitigation and Monitoring Plan
ER	Emission Reduction
ER-P	Emission Reduction Program (area)
ER-PD	Emissions Reduction Program Document
ER-PIN	Emissions Reduction Program Identification Note
ERPA	Emission Reduction Payment Agreement
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental Social Management Framework
FBoS	Fiji Bureau of Statistics
FCPF	Forest Carbon Partnership Facility
FFHCOP	Fiji Forest Harvesting Code of Practice
FGRM/ GRM	Feedback grievance redress mechanism
FHCL	Fiji Hardwood Corporation Ltd
FLEGT	Forest Law Enforcement Governance and Trade
FRA	Forest Resources Assessment (by the FAO in this case)
FREL	Forest reference emission level
FSC	Forest Stewardship Certification
GBP	Green Bond Principles (2017) published by International Capital Markets Association (ICMA)
GCF	Green Climate Fund
GHG	Greenhouse gases
GIZ	Gesellschaft für Internationale Zusammenarbeit
GOF	Government of Fiji
GRS	Grievance Redress Service
GSR	Great Sea Reef
HEP	Hydroelectric power scheme
HHs/hhs	House holds
HPP	Hydro Power Project
IBA	Important Bird Area
IMR	Infant Mortality Rates
INDC	Intended National Determined Contribution
JICA	Japan International Cooperation Agency
KBA	Key Biodiversity Areas
KfW	Kreditanstalt für Wiederaufbau

	Acronyms and Abbreviation
LCB	Land Conservation Board
LCI	Land Conservation and Improvement
LEDS	Low Emission Development Strategy
LoU	Land-owning units (LOU) of a Matagali
LUP	Land use planning
Matagali	A Matagali is one clan made up of several Tokatoka (a family unit), several Mataqali will make up the larger tribe or Yavusa
MOF	Ministry of Forestry
MRD	Department of Lands and the Mineral Resource Department
MRV	Measurement reporting and verification system
NAP	National Adaption Plan
NBSAP	National Biodiversity Strategies and Action Plan
NCCAS	National Climate Change Adaptation Strategy
NDC	Nationally determined contributions
NDMA	National Disaster Management Act
NFI	National forest inventory
NGO	Non Government Organisation
NP	National Park
NR	Nature Reserve
NTFP	Non- timber forest product
OP/ BP	Operational Policy / Bank Policy of the World Bank
PA	Protected areas
PABITRA	Pacific-Asia Biodiversity Transect
PAC	Protected Area Committee
PDC	Pacific Disaster Centre
PIER	Pacific Islands Ecosystems at Risk
PLR	Policy laws and regulations
R-PP	Readiness-Preparation Proposal for the FCPF REDD readiness funding
REDD+ Unit	ER-Program management unit
RL/REL	(Forest) Reference Level; Reference Emission Level
SEEDS	Sustainable Economic and Empowerment Development Strategy
SESA	Strategic Environmental and Social Assessment
SOI	Summary of Information (to the UNFCCC)
Tikina	District
TLTB	iTaukei Land Trust Board
TORs	Terms of reference
TWG	Technical working group
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank
YMST	Yaubula Management Support Teams
	Weights and Measures m = meters; ha = hectares
	Currency M = million; k =thousand Currency Unit = US Dollar USD1 = 2.099 Fiji Dollar

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Executive Summary

The Fiji archipelago consists of over 300 islands (100 of which are inhabited) with a total land area of 18,272 km2. The two largest islands, Viti Levu and Vanua Levu, together comprise 81% of Fiji's land area. Viti Levu and Vanua Levu are characterized by mountainous terrain, with both islands having peaks over 1000m above sea level.

There are four divisions with 15 Provinces. These are further divided into 86 Districts. The 2007 Census of Population and Housing reported Fiji's population to be 856,173 and the annual growth rate is estimated to be 1%. Tourism is the major foreign exchange earner, and major exports include gold, copra, fish, timber and timber chips, ginger, sugar and other processed consumer goods.

Fiji's terrestrial flora and fauna is characterized by high endemicity. Fiji's network of protected areas currently covers less than 3% of Fiji's land area.

There are a variety of different levels of protection for these areas, depending on the institution that designated them, the type of land tenure, and the legislative framework under which they were established.

Natural disasters and climate change

Fiji is a country that is most affected by natural disasters particularly cyclones, and floods parts of Fiji are extremely vulnerable to flooding however, droughts also impact Fiji. As a result, it incurs average annual losses of about 2% of GDP. The climate vulnerabilities stem from its exposure to tropical cyclones (averaging one to two a year), and to the El Niño-Southern Oscillation. Tropical cyclone Winston (2016) was the strongest ever recorded in the southern hemisphere and was a reminder of the threat that natural disasters pose to the welfare and development of Fiji. More than 70% of Fijians live in coastal and low-lying areas. The majority of urban centres, communities and infrastructure are exposed to storm surges and coastal flooding, which are projected to worsen. Key economic sectors including tourism (Fiji's fastest growing sector), agriculture (70% of the workforce), and fisheries are weather dependent and vulnerable to the impacts of climate change. The importance of these sectors means that Fiji's economy is vulnerable to external shocks, particularly climate change and extreme weather events. Fiji has been acting to strengthen the resilience of communities against the impacts brought about by climate change.

Land and land Use

Approximately 88% of the land in Fiji is customary owned land and is owned communally by the Mataqali, which is the land owning community unit. Such ownership is recognized by the Constitution of the Republic of Fiji. Customary rights of access to Mataqali fishing areas and land for communal use is recognized by the Fisheries Act and the Forest Decree. Around 90% of all land in Fiji is held under customary iTaukei land tenure, with the remainder being either state land or freehold. The key difference between iTaukei land and other land types is its inalienability. iTaukei land cannot be sold, transferred, mortgaged or otherwise encumbered. Land under this category can be leased, through the iTaukei Land Trust Board (TLTB), for a maximum of 99 years. Security of tenure is critical for long-term viability of forest-based REDD+ activities. One of the challenges to security of tenure for REDD+ purposes is that administration and control of iTaukei land is subject to being compromised by other acts due to wider national interest, in particular case in land excised under the Mining Act.

There is a lack of awareness of unsustainable land use practices, the magnitude of the soil erosion problem particularly in areas where the sugarcane crop grown and is poorly managed. A major concern is the rapid nature of the impacts leading to badly degraded land, which can occur within 30 years.[1] The insecurity of land tenure can act as a disincentive to farmers to make a shift towards more sustainable agricultural practices.

[1] Talasiga Lands in Fiji: Their Potential Expansion through Modern Farming Activities; R J Morrison, Pacific Science (2019), vol. 73, no. 1:61–77

However, there is also a lack of guidelines on the enforcement of regulations and the scale of damage to land is yet to be fully assessed.

Biodiversity

Fiji is a biodiversity hotspot of high conservation priority. Its considerable age (about 40 million years) and isolation have resulted in a diverse flora with high endemism. Nevertheless, the flora remains poorly explored, illustrated by the discovery of new species and forest types. Knowledge gaps are especially prevalent in the ecology, genetics and conservation of Fiji's plant species. The IUCN red-list states that 97% of the 70 threatened terrestrial plant species need updating. Historical long-term anthropogenic disturbance has resulted in large-scale conversion of natural forest vegetation into a highly fragmented landscape. This is placing strain on ecosystems and their resident flora and fauna. Protecting biodiversity in degraded landscapes is one of the major challenges facing the country. This challenge is complicated by the forecasted changes in climate, the following are considered especially vulnerable.

- Cloud forests on the two main islands, in particular, are of very limited extent and all should be placed in reserves;
- The upland lake and swamp catchments of Taveuni;
- Representative sustainable areas of *Pandanus* swamp, mangroves, dune and beach vegetation[2]
- Tropical dry forest is probably the most endangered ecosystem in Fiji there is an urgent need to assess the conservation status of all remaining tropical dry forest remnants to ensure that the best remaining fragments are preserved.[3]
- Half of Fiji's 66 land bird species are endemic and IUCN for Fiji includes13 endangered or vulnerable birds, 15 plants and trees, four mammals and nine reptile species are threatened with extinction following the altered landscapes, deforestation and degradation.[4]

For a comparatively small area Fiji has an impressive list of conservation hotspots with 13 Important Bird Areas (IBAs), an additional 19 sites have been proposed. Two Endemic Bird Areas (EBA) are recognised 32 Key Biodiversity Areas (KBAs) including 10 marine IBAs There are currently five recognized Alliance for Zero Extinction (AZE) areas in Fiji. However, properly constituted and managed protected areas are limited in Fiji. There are 16 Forest Reserves (22,214 ha)[5], six Nature Reserves (5,373 ha) and 15 Parks (16,912 ha) and there are only two important Ramsar sites both of these sites are within the ER-P accounting area.

Invasive species constitute an important threat to Fiji's biodiversity the number of invasive alien species in Fiji is steadily rising. The Pacific Islands Ecosystems at Risk reports as of September 2018, that 597 invasive alien plant species have been recorded in Fiji.

Social and Gender Issues

Average household sizes in the ER-P Accounting Area are 5.8 for iTaukei and 5.0 for non-iTaukei households, Household head unemployment is 18% for iTaukei and 30% for non-iTaukei. 24% of iTaukei households earn some of their income from wages and salaries compared to 48% of non-iTaukei households. 98% of all iTaukei households have attended secondary school or participated in post-secondary education compared to 93% of

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[2] Vegetation Ecology of Fiji: Past, Present, and Future Perspectives; J Ash; Pacific Science (1992) vol. 46, no.2 111-127

[3] Dry zone forests of Fiji: Species composition, life history traits, and conservation; Gunnar Keppel and Marika V. Tuiwawa (2007) New Zealand Journal of Botany, 45:4, 545-563

[4]The conservation value of secondary vegetation for Fijian woodland birds; E Reid, A. Naikatani, G. Keppel, S. Kleindorfer ; (2019) Ornithology of New Guinea and the Indo-Pacific Islands

[5] 2015 Key Statistics, Ministry of Forests

non-iTaukei households. 94% of iTaukei households own their own houses compared to 82% of non-iTaueki households. 57% of iTaukei households have access to electricity compared to 81% of non-iTaukei households but non-access to electricity is not a necessary proxy of poverty. Poverty rates for both iTaukei and non-iTaukei are approximately 35%. Upland iTaukei households rely on the forests to a greater extent than lowland iTaukei households but 35-40% of rural lowland iTaukei households rely to a significant extent on coastal mangroves and fisheries. NTFPs are also important either for household consumption and/or sale in the markets. However, iTaukei households cannot simply rely on land-based income generation activities and urban migration is becoming increasingly important. Non-iTaukei households to some extent rely on NTFPs where they are residing contiguously with forests including plantation forests but in very recent times their access to the latter has been severely restricted because of edicts from the forest plantation companies.

iTaukei women generally have more status than non-iTaukei women because they are also customary owners of land alongside men whereas non-iTaukei women cannot own customary land and are generally not included in leasing agreements. However, there are issues with iTaukei women being able to fully benefit from the fact that they too are customary landowners. While iTaukei women have considerable autonomy in their daily lives generally in the public arena they have very limited opportunities to actively participate. Although in the private sphere they do have some influence on how decisions are made. Non-iTaukei women might also have some influence in the private sphere but because non-iTaukei communities lack the social and communal obligations of iTaukei communities there is considerably less social solidarity than is found in iTaukei communities. A Gender Action Plan based on this SESA has been prepared to ensure women will benefit equally with men irrespective of their ethnicity or marital status.

Agriculture Sector

Agriculture is the primary source of income generation activity for approximately 65% of the total population. The proportion of Fiji's total land area that is under agricultural production has remained stagnant at approximately 24% since about the mid-1990s, after steadily increasing from 12% since independence in 1970. Recently, the rate of growth in agricultural production has failed to keep pace with the needs of a rapidly growing population, resulting in a progressive increase in food imports. The Fiji sugar industry, is the backbone of many in the rural economy. The root crops industry (mainly kava, yam, ginger, taro and cassava) has yielded highly competitive exports and Fiji is focusing on diversifying into their value- added products such flour and chips. The fruit industry is currently dominated by mango and breadfruit. Value added products of these fruits are potential export commodities for niche markets. With an increasing demand on agricultural production, some unsustainable agriculture practices are becoming increasingly common, leading to a range of negative impacts such as low soil fertility, soil erosion, siltation in rivers and associated flooding

Forest Sector

The forest sector is an integral part of the economy of Fiji and the government has been the key player in forest-plantation management, with the private sector involved in harvesting and timber processing. Moving forward, private sector involvement in forest-plantation development and management is set to be increased through long-term leasing arrangements and appropriate technical support. A National Plantation Policy will be introduced to provide guidelines for setting up private sector plantations and their operations as well as a Fire Management Strategic Plan to address the threat of forest fires to standing stock. Mahogany and pine are the two exotic species that dominate the plantation forest sector, but attention is now being given to fast growing biomass plantations.

For most of the Fijian forest resource, conservation concerns focus on the management of forests that have been selectively logged once and these are likely to be logged early again without allowing proper re-growth. Improved logging procedures and sustainable management regimes are being introduced and forest dependent communities have expressed concerns over the future of the forest.

The main legislation that regulates the forestry sector, the Forest Decree (1992), has undergone a legislative review process and is due to be replaced by the proposed Forest Bill (2016). Monitoring, compliance and

surveillance of forest harvesting operations is carried out by the Forestry Training Centre and the MCS Project of the Department of Forests, under the guidance of the Fiji Forest Harvesting Code of Practice (FFHCOP). Some initial work has been done on setting up Fijian forest certification standards.

Deforestation and forest degradation divers

The main anthropological drivers of deforestation and forest degradation are small scale but wide spread conversion of forest due to agriculture, the impacts of fire annual fires, particularly on the dryer parts of the main islands, and infrastructure development. Damage from cyclones can be little short of catastrophic to mangroves and plantations.

At least nine small Hydropower plant projects (HPPs) are planned on Viti Levu in the ER-P area, while these are all relatively small (less than 50MW in each case) two cascades are planned and most of the developments are proposed in upland areas of natural forest. The impacts on forests even from small HPPs can be long lasting and have a radius of some kilometers. The cumulative impacts with the associated infrastructure and forest conversion of the proposed cascades are difficult to assess.

The Emission Reduction Program

The Emission Reduction Program anticipates to work in 20 priority districts and with more than 155 communities.

Important Program Risks

- Major land degradation, including habitat destruction and fragmentation of forest, over a long period of time, mainly through clearing, deforestation, and in dry zones frequent burning and the creation of a self- perpetuating cycle of fire-dependent highly flammable grasses may reduce the anticipated stream of economic benefits from the program, and it is difficult to value these risks. The main mitigation of the risk would be to provide awareness raising and activities on a Divisional basis.

- Climate change presents a major threat to people, biodiversity and as noted, the economy in Fiji. The effects include the expectation of more extreme/intense cyclones and rainfall events with associated localised and wide-spread flooding, landslips and increased soil erosion and sedimentation, an early repeat of a catastrophic event such as a repeat of Cyclone Winston during the life of the ER-P has the potential to substantially reduce expected benefits[6]. There is no quick fix and main mitigations would be to continue and encourage further research, continue the NAP and resilience building approaches.

- Mangroves are currently not included in the ER-P. They should be. There is no technical or carbon accounting reason why they cannot as they have been mapped as part of the project preparation. It is estimated 35% to 40% of the population relies to a greater or lesser extent on mangroves and in particular they are vital for women. The importance of mangroves in terms of climate change is understood and greater efforts need to curb development that result in conversion and loss of mangroves. The ER-P as a priority climate adaptation action should promote the protection, management, expansion and monitoring of mangroves.

- A threat to Fiji's terrestrial biodiversity remains poorly planned and executed logging of native forests this coupled in some parts of the ER-P area with increased levels of conversion due to rapid expansion of shifting agriculture aimed growing taro and kava as export crops have notable impacts on some parts of the islands as people seek an cash income. Implementation of activities only in wide spread

[6] Cyclone Winston is often anecdotally cited as being as a 1:100 year event, this does not mean it will take another 100 years for a similar cyclone event to occur.

districts may result in a lack of inertia for the ER-P to produce timely benefits. The main mitigation of the risk would be to provide awareness raising and activities on a Divisional basis.

- Land use planning and plans are seen as an important way forward in the ER-P. Unless very considerable effort is made to encourage participatory approaches with clear benefits for adopting a plan their acceptance, however rationale and reasonable the land use, policies, plans may be and restrictions, they could well be ignored by the landowners. The main mitigation of the risk would be to provide awareness raising and activities on a Divisional basis and to ensure the inclusion of communities in land use planning.

- Land in Fiji is customary owned land and is owned communally by the Mataqali, benefit sharing mechanisms will be a challenge as will a formal carbon title. The ER-P currently targets only 20 districts spread across the three ER-P islands. The basis process for distribution will need careful design and explanation. A benefit sharing study is underway and expected to be completed by end of May 2019, this study will provide insights into the benefit sharing plan that Fiji will put in place for equitable distribution of benefits of both carbon and non -monetary benefits to include non carbon aspects.

- Concerns over difficulties of collaboration or conflicting policies across different sectors is not reserved only for REDD+ or Fiji. Improvements to sustainable forest management, conservation of forests for biodiversity etc. need cross-sectoral approaches; these are a challenge in most countries. In Fiji a uniting approach has been the need to collaborate to adapt to climate change. However, with so many climate related issues and the near constant risk of economic shocks, the capacity of government staff, NGOs, community groups and farmers to undertake complex program activities will be a challenge.

- To date information flow on REDD+ to rural communities has been difficult and has not been systemically disseminated in non-iTaukei communities. It is argued in this SESA and the Consultation and Participation Plan that will be included in the ESMF and Process Framework will make this explicitly clear.

SESA identifies five general themes for consideration and activities in the ER-P. for implementation to be successful the activities will need to supported by the different but interrelated sectors that already work with the forestry sector, including agriculture, energy and infrastructure.

1) Legislative reform – continuing the updating process to take account of climate change;

2) Strengthening of enforcement, certification and compliance – continue work on supporting implementation of guidelines such as the Forest Harvesting Code of Practice, continue work on Fiji's Forest Certification and support for encouraging compliance for land use planning in degraded areas;

3) Community-based resource management this should include mangroves;

4) Institutional strengthening on monitoring of forest resources and research – Fiji faces some major challenges related to climate change and the environment; and

5) Education and awareness, and in particular strengthening the involvement of women

1 Background and introduction

1.1 Introduction to the Emission Reduction Program and REDD+

The World Bank through the Forest Carbon Partnership Facility (FCPF) is assisting Fiji with financial and technical support focused on reducing emissions from deforestation and forest degradation, forest carbon stock conservation, the sustainable management of forests, and the enhancement of forest carbon stocks (activities commonly referred to as REDD+). Assistance from the FCPF is provided through the Readiness Fund, which supports participating countries in the development of REDD+ strategies and policies, reference emission levels, measurement, reporting and verification (MRV) systems and institutional capacity to manage REDD+ including environmental and social safeguards.

1.2 Background of REDD+ in Fiji

Fiji's readiness phase commenced in 2009 through the GIZ REDD+ program and in 2010 Cabinet endorsed a National REDD+ Policy. Following closely from 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 raising of awareness on the national REDD+ program, from the policy level to local communities, and technical training on important REDD+ activities such as MRV. In 2012 and 2013, after extensive consultations, two national REDD+ pilot sites were established with the main objective of providing training and a trial for readiness approaches and methodologies in preparation for national scale implementation. The two pilot sites are located on the two major islands of Fiji – Viti Levu and Vanua Levu. In addition, research related to REDD+ readiness was carried out in the Fiji Nakavu Forest research site (managed by the Ministry of Forests)

Fiji became a participant country in the FCPF in 2013 and a year later in December 2014, the FCPF 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 Readiness-Preparation Proposal (R-PP) readiness fund was signed in May 2015.

Developing a National REDD+ Strategy

The development of the strategy included an assessment of land use, changes in the allocation of land, forest laws, policies, and governance an this involved:

- 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 iTaukei Land Trust Board (TLTB).
- REDD+ lease conditions for forest conservation were developed with TLTB (for the Emalu pilot site and the Drawa REDD+ Project).

- Lessons and experiences for implementation of REDD+ was derived from the two REDD+ pilot sites and the Drawa Project site included a study on carbon measurements and monitoring in different land use types.
- Approaches follow FPIC and community-based management and monitoring were developed
- Climate smart agriculture, land use planning and reforestation methodologies were developed (main strategies for implementation of REDD+).
- As land is customarily owned in Fiji, the benefit sharing mechanisms being developed will be compatible with 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.

Implementation framework

- The National REDD+ Policy (2010) is in place - national and sector policies developed later are aligned to the objectives of REDD+ Policy.
- Fiji Harvesting Code of Practice (2013) - reviewed to promote reduced impact logging (and meet FSC guidelines) is an important component of sustainable forest management which is a REDD+ activity in the Fiji program.
- TLTB is developing a master land use plan (including land zoning) to safeguard against leases that may go against intentions of proposed REDD+ activities. The masterplan for the Nausori – Suva corridor is already in place.
- Fiji is in the process of including the agriculture forestry and other land use (AFOLU) 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.

Social and environmental impacts

- A draft strategic environment and social assessment report is in place.
- Drafting of the safeguards instruments (Environmental and Social Management Framework (ESMF), Resettlement Policy Framework and Process Framework) are currently being drafted and expected to be completed May 2019.

Political commitment to REDD+

The national REDD+ Program and the activities of the ER-Program are important components of recent national plans and strategies, most of which are forward looking long-term plans to improve climate adaption and an important aspect of that focuses on sustainable management of the Fiji's forests including mangroves. These include the 5-year and 20-year National Development Plan (2017); Low Emission Development Strategy (LEDS) to be finalised in 2019; enhanced NDC (to be submitted in 2020); the new National Climate Change Policy (2019). The inclusion of the forestry sector in the currently developed 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 reach net-zero emissions by 2050 and there is the stated intention to identify more areas under the National REDD+ Program. This stems from the strategies outlined in the 5-year and 20-year National Development Plan (2017) 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's REDD+ program to protect Fiji's forests, increase forest carbon sequestration initiatives and to generate financial benefits. The ER Program dovetails with national priorities and it is envisaged that it will 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 the NDCs demonstrates a very 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.

Political commitment to the national REDD+ Program has been on-going since the initiation of the program 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 Ministry of Forestry.

Political commitment translating to practical actions is indicated by the active national REDD+ steering committee 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. The commitment also helped to establish the multi-agency Divisional REDD+ Working groups (in the Western and Northern Division) and the Divisional Commissioners serve as chairpersons of the working group. These bodies will guide the implementation of the ER Program and there is reassurance from the involved ministries on their commitment through agreed terms of references detailing their roles and contributions.

The ECAL and Green Bond

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, FJD110.6M had been collected through the ECAL and FJD106M 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 FJD 100M Green Bond that was launched in October 2017. By 1st November 2017, FJD 40M 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. 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.

UN Climate Change Conference of Parities 23 (COP23)

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" [7].

1.2.1 Overview of Fiji

The Fiji Islands were first settled by Austronesians more than 3,500 years ago and later by Melanesians, with some Polynesian influences. Europeans first visited Fiji from the 17th Century and after a brief period as an independent kingdom, the British established the Colony of Fiji in 1874. Formative influences on Fiji's "cultures", especially the more hierarchical nature of its culture was adapted from Samoa, Tonga and Hawai'i. The major characteristics can be summarized as follows:

- The national language is spoken by all indigenous Fijians and also by many non-iTaukei and the latter have added to the language. English is the official language of the State.
- There is a group that is native to Fiji that shares a common history and culture. This ethnic group, Indo-Fijians since 2010, is now referred to as Fijians (but are non-iTaukei Fijians) and is constitutionally recognized as such in the amended 2010 Constitution. All Fijian citizens irrespective of their ethnicity are now referred to as "Fijians" and the does not distinguish between people based on ethnicity.
- Most iTaukei are Christians with the Methodists constituting 66.6% of the population and smaller religious groups such as the Seven Day Adventists only 5.1% of the population. Most of the non iTaukei people are Hindu although nearly 7% are Muslim. Fiji's recognizes the religions of it ethnic groups and celebrates Christian, Hindu and Muslim religions, but there are separation of church and state and Fiji can be considered a secular state.
- An important cultural marker is the use of Yagona (kava)[8], which is not only used in daily life but also during important customary events. The consumption of kava signifies the social acceptance of each group by one another and while Non-iTaukei also consume kava it lacks the centrality that exists in the iTaukei socio-cultural contexts.

1.2.2 Overview of the ER- Program area

Poverty rates in Fiji are among the lowest in the Pacific. Based on the US$3.20 per day international poverty line, 14% of the population lived in poverty at the time of the most recent household income and expenditure survey in 2013−14, while less than 2% of the population lived in extreme poverty in 2013-14 (US$1.90 per day). The main drivers of poverty in Fiji have been identified as household size, the presence of elderly people and children in the household, the education level of the head of household, female-headed households and the employment of the head of household. All five of these factors are more marked in rural areas. Rural household income increased by 10% from FJD10,554 in 2002-03 to FJD11,608 in 2008-09, but urban household income increased by 51% in the same six-year period, from FJD15,267 to FJD23,036. Rural Fijians produce only half of their food needs. While the poverty rates in Fiji are among the lowest rates in the Pacific and poverty rates have slightly fallen in the last decade, however, three factors are of concern:

1) Urban poverty has increased (from 12 to 13 % based on the US$3.20 per day international poverty line) even as aggregate and rural poverty have declined (from 17% to 14% and 22% to 16%, respectively). The increase is partially explained by accelerating rural to urban migration; however,

[7] The Talanoa approach is the essence of consultation and decision-making in the country and is an inclusive and participatory engagement process that will strengthen the implementation of the ER Program including adherence to social safeguards.

[8] See Text Box 3.2.

even if all those who migrated in 2008–13 were poor, it cannot fully account for the increase in the headcount of the urban poor, suggesting that there has been a genuine rise in poverty in urban areas.

2) The risk of socio-economic shocks is high, for example following Cyclone Winston:

"The Post-Disaster Needs Assessment that the GoF prepared with assistance from a World Bank led team of development partners, estimates total damage and losses to the productive, social and infrastructure sectors at US$959 million (22% of GDP)". When this includes damages to the environment and losses in eco-system services, the estimated damage and losses rise to US$1.38 billion or 31 % of GDP. Of the damage and losses to the productive, social and infrastructure sectors, damages represented 65% of the total, with losses representing the remaining 35%. The housing was badly hit accounting for 59 % of total damages with more than 30,000 homes destroyed or damaged. The agriculture and fisheries sectors, which provide employment to an estimated 70% of the population suffered 61% of the total losses. Whereas the agricultural sector is are expected to recover in three years, fisheries are expected to take up to ten years, due to the damage to coastal mangroves and coral reef habitats."[9]

3) Vulnerability is greatest for the poorest populations, who live in small communities in coastal areas in or remote outer islands. Women rely more on natural resources for their sustenance and livelihood, which makes them particularly vulnerable to climate extremes.

Fiji's rural population was 390,635 at the time of the 2017 Population Census, a decrease of 21,790 (5.3%) compared to 2007. The count shows that 44.1% of Fiji's population live in the rural areas, which is a decrease of 5.1 percentage points compared to 2007. The population growth rate of Fiji is 0.06% (2012 to 2017), the proportion living below the national poverty rate is 28%; prevalence of undernourishment 2014-2016 4.6%; maternal mortality rate per 100,000 ratio 30; female unemployment rate is 8.6% (ADB 2018). The population of the ER-P area is shown in Table 1.1 and the location of the ER-P area is shown in Figure 1.1

Table 1.1 Population and total area of Divisions and Provinces in the ERPD area

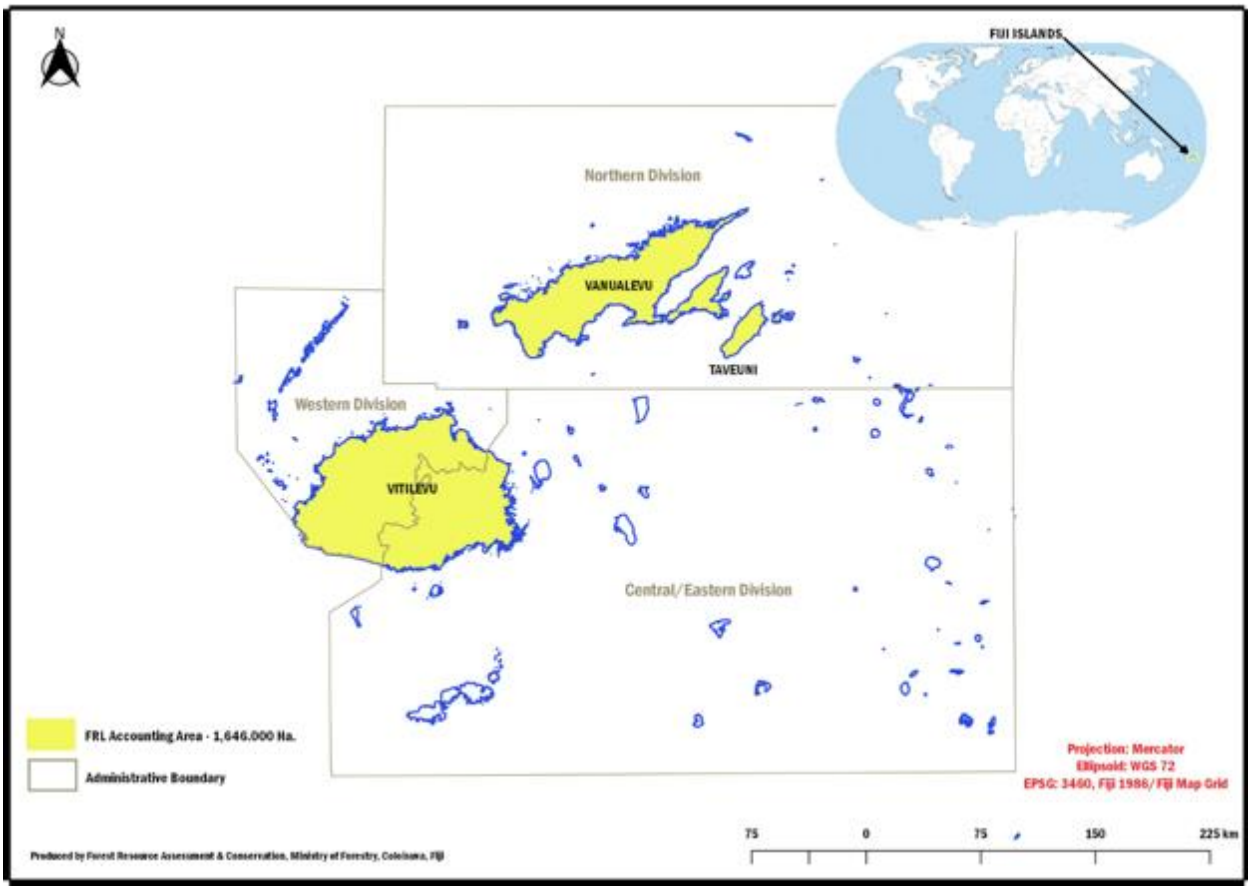
ER P Island and Provinces	Divisions	Total Area (Ha/Km²)	Population (2007)	Population (2017)	% Share of the ER-P Population
1. Viti Levu	**Central and Western**	**1,038,900 Hectares**	**594,791 Persons**	**715,219 Persons**	**83.6**
Ba	Western	2,634 km²	212,197 (54.4%)	247,708	28.9
Ra	Western	1341km²	30,904 (30.1%)	30,432	3.6
Nadroga-Navosa	Western	2,385km²	54,083 (37.9%)	58,931	6.9
Serua	Central	830 km²	15,461 (31.6%)	20,031	2.3
Namosi	Central	570 km²	5,742 (07.4%)	7,871	0.9
Rewa	Central	272 km²	101,547 (23.8%)	108,016	12.6
Tailevu	Central	955km²	48,216 (72.1%)	64,552	7.5
Naitarisi	Central	1,666 km²	126,641 (57.9%)	177,678	20.8
2. Vanua Levu	**Northern Division**	**597,657 Hectares**	**282,798 Persons**	**140918 Persons**	**16.4**

[9] Cyclone Winston, the most powerful storm on record in the Southern Hemisphere, made landfall on February 20, 2016, killing 44 people and leaving a trail of destruction across large parts of Fiji. IBRD Post Cyclone Winston Emergency Development Policy Operation 2016. IBRD June 2016

ER P Island and Provinces	Divisions	Total Area (Ha/Km²)	Population (2007)	Population (2017)	% Share of the ER-P Population
Bua	Northern	1,378km²	14,988 (16.6%)	15,466	1.8
Macuata	Northern	2,004km²	80,207 (16.3%)	65,983	7.7
Cakaudrove Includes Taveuni	Northern	2,816km²	44,321 (38.9%)	59,469	6.9
Total		**1,636,557**	**734,307** (42.9%)	**856,173**	**100.0**

Table notes: Eastern division includes the islands and groups of islands of Rotuma, Kadavu, Lau and Lomaiviti

Figure 1.1 The ER-P Accounting Area



There has been a relatively significant decline in the rural population due to limited income generation opportunities in the rural areas. In many instances, whole households are seen to migrate to peri-urban centres, where there is easier access to health and education services, cultural and recreational services. Based on the above data it is projected that by 2027 there might be greater numbers living in rural areas than there is at present and between 2007 and 2027 the rural population will be depleted by over 10%. Women are more likely to migrate to the towns and cities of Fiji than men. There are more females in the urban labour force than males, but this masks the reality that in the rural area if women are not in the paid labour force and did not state on the day of the census that they were neither unemployed or looking for work they would not be enumerated using the latter category. Similarly, there are men living in urban areas that state they are not looking for work, but are involved in the informal economy.

It can probably be concluded that over the next decade Fiji will be less of a rural society than it is today. The reality is that irrespective as to how much value can be added to agricultural, forestry and fisheries

production, whether or not both domestic and export demand fuels an increase in both production and prices paid for such commodities and whether or not the GOF can provide better quality civil and social infrastructure development interventions in rural areas there will be an incremental, but outgoing migration to Fiji's towns and cities. The iTaukei will retain ownership of their customary land short of some major social and political upheaval but the centre of gravity for livelihood-based activities that might improve their living standards will probably not be driven by land-based economic activities.

The rural iTaukei households living in the ER-P islands rely on the forests to a significantly greater extent than the rural non-iTaukei households. 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. 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 is more difficult although in relation to pigs. Most of the NTFPs collected are for self-consumption but some NTFPs such as yam, medicinal herbs and fruits are also sold on local markets. However, few households can derive sustainable livelihoods simply from the harvesting of NTFPs.

2 Approach and methodology for developing the SESA

2.1 Introduction to the strategic environmental and social assessment tool and methodology

A strategic environmental and social assessment SESA is an internationally known policy tool/instrument to identify environment and social risks and impacts pertaining to specific sectors and planning strategies. It facilitates strategic environmental and social sustainability dialogues, and informs policy reform processes. FCPF and many REDD+ stakeholders agreed that SESA would serve as a foundation across REDD+ readiness programmes and, as such, should be a comprehensive analysis of issues and policy options related to the proposed REDD+ national and subnational/jurisdictional programmes. SESA is multi-dimensional in nature, as it analyses social, environmental and economic issues, prioritises and validates key issues after extensive consultations with stakeholders, and recommends policy options.

The overall objective of SESA is to ensure that strategic environmental and social assessment principles can be applied to integrate environmental and social considerations into the Fiji REDD+ readiness process and ER Program design in a manner consistent with Fiji's environmental laws and regulations and the World Bank's environmental and social safeguard policies and procedures. In accordance with FCPF guidelines, special consideration will be given to livelihoods, rights, cultural heritage, gender, vulnerable groups, governance, capacity building and biodiversity.

Work on the SESA started November 2016 and has focused on qualitative investigations. This began with an in-depth study of literature, relevant policies, laws and regulations (PLRs) and both spatial and demographic data and has been collected by the Institute of Applied Sciences (IAS) and REDD+ team. Six programme elements defined in the ER-PIN, which were used to frame the SESA literature review and stakeholder consultations, are:

- Land-use plans;
- Strengthen local structures for land and forest care;
- Afforestation and rehabilitation of grasslands;
- Biodiversity;
- Sustainable forest management; and
- Non-carbon income.

To develop an analytical framework across the multiple themes of the Fiji REDD+ Programme, six key thematic areas were identified; agriculture, forestry and natural resources, land tenure, social/governance, benefit sharing and climate change adaption and vulnerability. For each of the key thematic areas two sets of matrices were developed, one for policies (policy action matrix) and the other for general implementation actions (situational analysis matrix).

These key thematic areas are associated with the major drivers of deforestation and degradation and were used to frame the situational analysis activities. In the absence of a detailed Drivers study, the analysis focussed on the four significant drivers: agriculture, forest fires, commercial logging and forest harvesting. Although mining and infrastructure are also drivers, the information available to the SESA Team supported focus on the four significant drivers.

In addition to literature review, the SESA process relied on extensive stakeholder analysis to define a list of key environmental and social issues that may emanate from REDD+ activities[10].

Stakeholder engagement

Under the REDD+ process, stakeholders are defined as groups that have a stake or interest or right in the forest and those that will be affected either negatively or positively by REDD+ activities. A stakeholder analysis was undertaken earlier during the scoping work preceding the Fiji REDD+ Policy development. In May 2009, during a national planning workshop, focused group discussions led to the generation of a list of relevant stakeholder groups for REDD+ and the specific roles for each stakeholder group were also defined. It was also agreed in this workshop that resource owners be fully engaged in the REDD+ program and thus involved in decision making. Another key result of this workshop was the creation of a national multi-stakeholder governance structure, now the Fiji REDD+ Steering Committee.

The stakeholder analysis for the REDD+ programme in Fiji was based on information from several important stakeholder groups: indigenous communities, non-indigenous commercial investors, private sector, government, non-governmental organisations/ civil society, academic and research institutions, international agencies, faith-based organisations, urban-based indigenous decision makers, National iTaukei Resource Owners Council (NTROC) and statutory bodies.

The IAS took a strategic approach to select appropriate case study areas in alignment with requirements of the Fiji SESA. The case study areas were selected so that they were representative of:

- Fiji's larger islands and maritime islands;
- Areas having a mix of land use/land cover, including forest, agricultural land and grasslands.
- iTaukei and non-iTaukei communities, reflecting Fiji's history, its multicultural nature and its land administration and tenure systems;
- Important forest areas that are of high conservation value, provide critical ecosystem services and are key biodiversity areas;
- Climate change issues associated with needed adaptation and resilience measures; and
- Other recent ecological, biological and socio-economic studies that feed into the environmental and social issues and risk analysis at the national and local level.

Based on the above, the Institute chose four study sites: the Nakauvadra REDD+ site, the Emalu REDD+ site (Viti Levu), the Dreketi site (Vanua Levu), and Kadavu island[11].

The later SESA work program from July 2018[12] focused on the main three islands of Viti Levu, Vanua Levu and Taveuni. The work concentrated on qualitative village consultations and gap filling through transects across the different climatic zones and landscapes of the islands where roads and conditions permitted. This has continued up to April 2019.

Field work followed in-part a simplified approach of the Pacific-Asia Biodiversity Transect (PABITRA) gateway [13] of different transects across the islands working from the ocean to mountain (see Figure 2.3 for the general areas of consultations and transects).

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[10] After Situational Analysis Report Delivery 3 Volume 1 April 2017, Institute of Applied Sciences (IAS), University of the South Pacific – updated.

[11] Kadavu was later dropped from the ER-P area.

[12] Following discussions with the REDD+ Steering Committee this more focused approach was approved in July 2018.

[13] The PABITRA approach assesses biodiversity along ocean-to-mountain transects and promotes sustainable land use on islands across the Pacific. PABITRA is a grass roots effort of a group of conservation scientists.

Table 2.1 Overview of Provinces visited for SESA investigations

Proposed ER-P area and provinces	Island	Landscape
Ba	Viti Levu	The western side of Viti Levu is a rain shadow and together with western parts of Ra is where much of the sugarcane is grown with pine becoming more important in the interior. The Nausori highlands are becoming important of cool climate vegetables. Pine plantations are scattered over much of the upland areas together with remnant natural forest. Fire is an important issue as it is Ra Province.
Ra	Viti Levu	The coastal part of Ra where heavily impacted by Cyclone Winston and are still recovering, large areas of pine were destroyed
Nadroga Navosa Sigatoka	Viti Levu	Includes important tourist locations and in land includes areas of sugar and pine. Includes the Sigatoka valley, which drains the Nadrau plateau. The lower part of the valley continues to be the most important area for vegetables, tobacco, papaya and fruit tree production. Upland areas contain pine and some large areas of remnant natural forest
Naitasiri and Namosi	Viti Levu	Includes rugged high land areas running up to the Rairaimatuku and Nadrau plateau and is important for the HPPs and includes large important areas of relatively undisturbed forest across the Korobasabasaga and Medrausucu mountain ranges. Some important tourist areas along the coast of Namosi including Pacific Harbour
Rewa	Viti Levu	Includes the Suva. The Rewa river delta is the largest area of mangroves in Fiji
Serua	Viti Levu	An important coastal tourist area but includes mangroves and areas of *pandanus* swamps
Tailevu	Viti Levu	Areas of mixed forest, livestock, plantations with coastal mangrove
Bua	Vanua Levu	This province is on the western end of Vanua Levu and has extensive pine plantings around the coast it is subject to quite strong wind
Macuata	Vanua Levu	This province is where much of the sugarcane is grown (in the central area) on Vanua Levu, toward the eastern end which is more rigged this gives way to mixture of pine and forest and then natural forest. The eastern end has tracts of relative good and unlogged forest. Around the coast and off shore from the province are extensive areas of mangroves. The high upland central area between Macuata and Cakaudrove provinces contains good forest. Along the road corridor this has been logged and there is much secondary regrowth. Invasive African Tulip has grown in some disturbed areas but away from the logged area it is not apparent.
Cakaudrove	Vanua Levu	Includes the island of Taveuni which is an important area for kava production and high levels of biodiversity. The main island has a mixture of high/ upland land forests often logged around the coast and replaced by coconuts, many of the coconut plantations are quite old

2.1.1 Qualitative work

A multidisciplinary IAS team went to selected parts of the ER-P area. The follow up SESA team focused on visiting the different landscapes and climatic zones and the different types of communities found in the ER-P area.

2.1.2 Limitations and challenges

The SESA focuses on the ER-P area only (Viti Levu, Vanua Levu and Taveuni) and is a terrestrially orientated study and does not cover the marine or conservation issues related to the marine protected areas. This takes into account the difficulties of time and expense of including many areas islands Fiji that are remote, and difficult to reach and also the many of the island have not much forest cover and were excluded from the ER accounting area.

The main challenges during fieldwork relate to the considerable variation in the different types of landscapes over quite short distances. Reaching some areas particularly during the wet season when heavy rainfalls are experienced was very difficult and many communities report that they are cut off for short periods due to floods when roads become impassable.

2.1.3 Consultations

Stakeholder consultations were undertaken under the different phases of the REDD+ work in Fiji. Consultations were held with relevant Government departments/divisions/offices at Province, District and village levels in Viti Levu, Vanua Levu and Taveuni to assess the understanding of and preparedness for REDD+. These consultations were to ensure transparent stakeholder information sharing using FPIC consultation mechanisms that help to establish broad community support and the full and effective participation of relevant stakeholders. Stakeholders included iTaukei non iTaukei, commercial investors, private sector, government, non-government organizations/civil society, academic and research institutions, international agencies, faith-based organizations, urban based indigenous decision makers, Provincial and District representatives from the 11 provinces, community groups and statutory bodies.

Village/ community awareness Program 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 Nakuvadra, 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. Stakeholder consultations conducted in the different phases of REDD plus work included;

- The IAS team conducted a series of case studies a summary is shown in the following Table 2.2[14]. The case studies used a participatory rural appraisal approach and spatial analysis. These case studies also helped obtain a clear understanding of the key environmental and social issues, inter-sectoral linkages, and potential policy trade-offs, and how they may affect the overall ER Program. The team conducted participatory rural appraisals in eleven villages and two non-iTaukei settlements from November 2016 to March 2017;

- Additional follow up stakeholder consultations using participatory approaches were held village at level meetings in seven villages from July to August 2018 (see Table 2.1) and Figure 2.3 shows the general are of consultations during July to August 2018 and a further nine village consultations were held in April and May 2019.

- REDD+ demonstrations included training and awareness raising activities at: 1) Emalu REDD+ pilot site, Navosa; 2) Nakavu Project Site, Drawa, Macuata; and the 3) Nakauvadra Community Based Reforestation Project. Other related REDD+ projects include the REFOREST Fiji Project implemented by SPC.

Fiji has adopted a hybrid approach for REDD+ implementation (Fiji Govt. 2014)[15]. This allows flow of funds at national, programmatic and project-scale in alignment with the Fiji REDD+ Policy.

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[14] After Situational Analysis Report Delivery 3 Volume 1 April 2017, Institute of Applied Sciences (IAS), University of the South Pacific, the table has been updated and modified.

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

Table 2.2 Summary of early case studies

Case Study Location	Community	Key Social Characteristics	Significant environmental, social or natural resource issues
Nakauvadra (Ra Province) Viti Levu	*Villages*: Narara Vunisea *Settlement:* Narara	• Communities fully understand the importance of their forests and its resources. • There is a clear gender division of labour in utilising the forests' resources. • In Narara village there is an on-going ecotourism activity that helps community livelihood. • Communities acknowledge the need to include all members of community in the stages of REDD+ project cycle for improved awareness, learning and understanding. • Women groups & committees are successful in implementing micro- enterprises Problems identified: (1) food and nutritional insecurity, (2) lack of income generating activities, (3) water shortage.	• Nakauvadra range and associated watershed. Headwaters of the Wainibuka, Penang and Nakauvadra River. • Aquifer (Fiji Water). • Fiji ground frog (threatened) • Important Bird Area.
Emalu (Nadroga Navosa Province) Viti Levu (Tomaniivi)	*Villages:* Nakoro Draubuta Namuamua Matokana	• Men and women share financial commitment • Clear division of labour • Apart from Nakoro, other villages are well versed with REDD+ and potential benefits • Problems identified: (1) root crops (2) water shortage (3) poor road access (4) no electricity	• Important catchment area for Sigatoka and Navua River. • High Value Conservation Forest in Fiji • Nine Red List avifauna species • High concentration of rare plants. • Rare endemic cicada *Raiateana knowlesi* (Totem for Emalu clan).
Dreketi (Macuata province) Vanua Levu	*Villages:* Nabiti, Nabavatu, *Settlement:* Matasawalevu	• Communities fully understand the importance of their forests and its resources. • There is a clear gender division of labour in utilising the forests' resources. • Women are the main income earner followed by men. • Communities acknowledge the need to include all members of community in the stages of REDD+ project cycle for improved awareness, learning and understanding. • Men in Nabiti have sole access and control on timber trees. • Problems identified: (1) road access (2) water shortage.	• Third largest mangrove delta in Fiji • Remnant dry forest (highly threatened habitat in Fiji). • Only known roost for *Chaerephon bregullae* (insectivorous cave dwelling bat)
Kadavu Island	*Villages:* Nalotu Daviqele Nabukelevu-i-Ra	• Women are the traditional herbal practitioners. • Clear leadership structure in terms of governance and chiefly system. • In Yawe district there is an on-going tourism activity that helps community livelihood. • Problems identified: (1) poor road access (2) water shortage (3) poaching in their Marine Protected Areas (4) water shortage	• Important Bird Area • Mt. Nabukelevu is a Biodiversity hotspot • Several island endemic flora species.

Additional Consultations in the ER-P Accounting Area

A first round of 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. Further information on consultations can be found in Section 5 of the ER-PD, and also in the REDD Readiness Assessment. Additional consultations in July and August 2018 and 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 (see Figure 2.1) and other vulnerable people. Further consultations and particularly with women were undertaken in April and May 2019. The following Table 2.3 provides a list of the villages and different landscapes visited.

Table 2.3 Villages visited July and August 2018 and April and May 2019

Village	District	Province	Island	Remarks - major land use
July and August 2018				
Nabukelevu Village	Serua	Serua	Viti Levu	Upland area, natural forest, mahogany
Natila Village	Bau	Tailevu	Viti Levu	Coastal mangrove
Narara	Saivou	Ra	Viti Levu	Grassland
Naseyani	Rakiraki	Ra	Viti Levu	Grassland with Pine Plantation
Savudrodro	Savusavu	Cakaudrove	Vanua Levu	Grassland and Forest
Korosi	Navatu	Cakaudrove	Vanua Levu	Forest
Qila Road	Cakaudrove	Cakaudrove	Taveuni	Deforestation
Somosomo hydro road	Cakaudrove	Cakaudrove	Taveuni	Deforestation
Soqulu Estate road	Cakaudrove	Cakaudrove	Taveuni	Deforestation
April and May 2019				
Uto	Nawaka	Ba	Viti Levu	Pine, sugarcane, grassland
Navala	Tavua	Ba	Viti Levu	Pine, sugarcane, grassland
Nalebaleba	Sigatoka	Nadroga/ Navosa	Viti Levu	Natural forest, pine, vegetables sigatoka river valley
Yalava	Sasa	Macuata	Vanua Levu	Pine, sugarcane and mangroves,
Cogea	Wainunu	Bua	Vanua Levu	Forest, regrowth, yams
Dogotuki	Dogotuki	Cakaudrove	Vanua Levu	Good quality forest
Nadala/ Navai/ (near Monasavu Dam area)	Wainimala	Naitasiri	Viti Levu	Upland forest, on the Rairaimakutu Plateau
Waivou	Bau	Rewa	Viti Levu	Mangrove
Nayavutoka	Nakorotubu	Tailevu	Viti Levu	Village was hit badly by Cyclone Winston and is still recovering, mangroves

Figure 2.1 Women's focus group consultation Vanua Levu	Figure 2.2 General community consultations Viti Levu

Figure 2.3 Map showing the general area of consultations and transects around (from the ocean to mountains) and across Viti Levu, Vanua Levu and Taveuni

2.1.4 Summary of the consultation comments

The following Table 2.4 provides a summary of the consultations with communities and Table 2.5 Summary of Divisional forest management issues raised and discussions with the other stakeholders and REDD+ Steering Committee

Table 2.4 Specific issues raised during different consultations with communities

Consultation	Issues raised
Nabukelevu Village	Community benefit sharing mechanisms, land tenure issues, how to access and gain knowledge on REDD+; How to do sustainable forest management and community forest management plans, use and management of NTFPs; hardwood plantations
Natila village	Ownership, use, management/ stewardship of mangroves
Narara, Naseyani	Afforestation, value added chains for different crops; climate smart crops - options for dry areas western division - facing diminishing returns from sugarcane; availability of water, grassland fires, boundaries to land, pine plantations, land tenure issues, protected area assignment and management
Multiple discussions	Financing afforestation/ reforestation; what are the costs and benefits of REDD+ and how to access the benefits?
Savudrodro, Korosi,	Trade off between agriculture and planning and planting re-growth trees; flooding and protection of the watershed, firewood – use large quantities for copra drying etc.
Taveuni	Land use, land planning, IPM, expansion of kava and taro crops, sustainable climate smart cropping systems, encroachment of natural forest and protected area
Vanua Levu	Meeting with women – importance of the management and use of mangroves for food; decision making on family issues, availability of cash

Table 2.5 Summary of Divisional forest management issues raised and discussions with the other stakeholders and REDD+ Steering Committee

Summary of issues	Notes
Training and development of capacity to deal with REDD+ issues	Divisional issue
How to issues - financing of REDD+ activities	As above
Land and forest tenure – various issues, including lease conditions, management of leases	As above
M&E forest information system	As above
Improvements to land use planning	As above and discussions with Ministry of Agriculture
Climate smart crops	Discussions with Ministry of Agriculture

3 Main results of the SESA

3.1 Environmental conditions of the Emission Reduction Program area

Fiji is a large archipelago with strong climatic contrasts between the eastern wetter and dry westerns sides of the large islands, and with diverse landscapes. The complexity and mix of the climatic and vegetative variations over the ER-P make generalisations difficult.

The Western division of Viti Levu is a rain shadow and has a tropical climate with hot humid 'summers' and relatively dry 'winters'. The average annual rainfall in Nadi is 1,809 mm and in Lautoka is 1,868 mm, much less than in Suva (3,041 mm). Both Nadi and Lautoka have an average rainfall of less than 75 mm in June, July and August. Rakiraki on the coast in the north of Ra province has a higher annual rainfall than Nadi and Lautoka (averaging 2,352 mm), though rainfall further south in the province is lower.

A geographic difference in sunshine distribution is evident between Suva (windward side of Viti Levu) and Nadi (Leeward side of Viti Levu during winter (June to August). The prevalence of onshore trade winds results in significant periods of overcast along the windward coast of the larger islands, often (but not always) associated with showers or drizzle. While these two locations represent the two extremes of sunshine.

On Vanua Levu the central Labasa and flatter north-eastern side of the island is also a rain shadow and is where the sugarcane industry is centred

The production of kava is currently having a large impact on agriculture and the forest where is can be grown. In Fiji the crop is valued at around FJD66M per year benefitting over 21,000 kava farms. Between 2010 and 2013, kava production in Fiji grew by over 30%. In that period, earnings doubled from FJD3.8M to FJD7M. In Vanuatu, kava exports grew by almost 40% during that period benefitting over 30,000 households.

A summary of important environmental issues in the Emission Reduction Program area includes:

- The ER-P area is susceptible to climate change and is vulnerable to natural disasters and extreme weather events;
- The area has a number of relatively large and small infrastructure project that have resulted in short and long term social and environmental impacts which can be locally quite severe;
- The ER-P area has a number of deforestation and forest degradation drivers working (including infrastructure), most are localised but the local impacts can be quite severe which impact on forest cover and include:
    - Encroachment on forest for agricultural purposes particularly the conversion of forest to kava or a mix of taro and kava;
    - Illegal logging encroachment impact on protected areas and forest reserve/watershed protection forest; and
    - Fragmentation and degradation of remnant various types of natural forest;
- Increasing threats to protected areas and biodiversity; and
- Forest governance issues.

3.1.1 Climatic conditions

The Fiji's climate is tropical marine with only minor seasonal temperature variation, but this can vary considerably from year to year due to the El Niño- Southern Oscillation. There are two extreme phases of the El Niño- Southern Oscillation: El Niño and La Niña. There is also a neutral phase. In Suva, the El Niño events tend to bring dry seasons that are drier and cooler than normal, while La Niña events usually bring wetter than normal conditions. 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 the mountains and have an annual average rainfall of 1800 mm with a well-defined dry season favourable to crops such as sugarcane.

Impacts of climate change on Fiji [16]

- Temperatures have increased, it is expected that temperatures will continue to rise with more very hot days;
- Rainfall has not changed as 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% and an increase in rainfall intensity of about 20% within 100 km of the cyclone centre;
- Sea level has risen and is expected to continue to rise and will lead to saline intrusion; and
- Ocean acidification has been increasing and will continue to increase.

Fiji is prone to the devastating effects of heavy rainfall during the passage of tropical cyclones and as such accurate measurement of rainfall during such events is urgent for effective disaster mitigation and risk analysis.

Table 3.1 Average annual temperature (^{0}C) and rainfall (%) changes compared to 1980-1999, medium emission scenario

No.	Province	Temperature				Rainfall			
		2020	2030	2040	2050	2020	2030	2040	2050
1		0.5	0.7	1	1.3 (1.2-1.4)	1.2	1.7	2.3	3.0 (2.0-4.0)
2		0.5	0.7	1.1	1.4 (1.2-1.6)	1.2	1.7	2.4	3.1 (2.0-4.0)
3		0.6	0.9	1.3	1.7 (1.4-1.8)	0.7	1.0	1.5	1.9 (1.0-3.0)
4		0.6	1	1.3	1.7 (1.6-2.0)	0.9	1.4	1.9	2.5 (2.0-3.0)
5		0.6	0.9	1.3	1.7 (1.6-2.0)	1.6	2.4	3.3	4.3 (3.0-5.0)
6		0.5	0.8	1.1	1.4 (1.0-1.6)	1.4	2.1	2.9	3.8 (3.0-5.0)

Source: Climate change and sea level rise scenarios for Fiji

Table 3.2 Sea level rise compared to 1980-1999 medium emission scenario

Region	2020	2030	2040
	7-8 cm	11 -13	15-18
	8-9 cm	12-13	17-19

[16] Fiji Meteorological Service, Australian Bureau of Meteorology and CSIRO, Pacific Climate Change Science Program

Source climate change and sea level for Fiji

Rainfall

Rainfall is highly variable and strongly influenced by the orography of the islands and the prevailing south-east trades. The trade winds are often saturated with moisture, causing any high land mass lying in their path to receive much of the precipitation. The mountains of Viti Levu and Vanua Levu create wet climatic zones on their windward sides and dry climatic zones on their leeward sides. Little climatic differentiation occurs on the smaller islands.[17]

Floods

Large-scale flooding in Fiji is mostly associated with the passage of a tropical cyclone or tropical depressions that results in prolonged heavy rainfall. Urban centres situated near the mouth of the four main rivers on the main island (Nadi, Ba, Sigatoka and Nausori) are affected the most. Localised flash flooding during the wet season (November to April) is common. Flooding occurs almost every wet season and occasionally in the dry season during La Niña events. Major floods tend to be associated with severe weather events, such as tropical depressions and cyclones that bring high intensity rainfall.

Droughts

Most meteorological droughts since 1920 are associated with ENSO (El Niño-Southern Oscillation) phenomenon. Recent severe droughts occurred in 1987, 1992, 1997-98, 2003 and 2010. Drought is a big concern in many sectors in Fiji, and more climate information would help stakeholders to plan for times of low rainfall[18]. A strong ENSO episode is likely to result in a major drought over the country, as happened during 1982/83 and 1997/98 ENSO events. The 1998 drought, affected over half of the country, where no significant rainfall fell for more than seven months, and food was distributed by the government to 105,000 people. Seasonally dry locations such as the west of Viti Levu during the winter months, where monthly rainfall is 50mm or less, need only experience below average rainfall for a few months to bring about drought conditions.

Tropical Cyclones

Fiji lies in the area that is occasionally traversed by tropical cyclones. They are mostly confined to the period November to April, with greatest frequency around January and February 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. On average, some ten to fifteen cyclones per decade affect some part of Fiji, and two to four will do severe damage.

Projections for future tropical cyclone activity in a warmer climate indicate on the one hand a decrease in overall activity, but at the same time, a dramatic increase in the occurrence of the most devastating cyclones. Analysis indicates a substantial increase in the most devastating tropical cyclones at 1.5°C of global warming and even more so at 2°C of global warming[19]. For a warming of about 2.5°C by the end of the century, occurrence probabilities of Category 4 or 5 cyclones are found to nearly double relative to the recent past. Warmer sea-surface temperatures will increase the probability of stronger cyclones forming.

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[17] Fiji Metrological Service Annual Climate Summary 2016/17 and see the website

[18] Climate and Oceans Support Program in the Pacific 2015

[19] Tropical Cyclones: Impacts, the link to Climate Change and Adaptation, Adelle Thomas, Patrick Pringle, Peter Pfleiderer and Carl-Friedrich Schleussner; Climate Analytics (2017)

3.1.2 Climate change

There is a statistically significant trend in both maximum and minimum temperature, with increases ranging from 0.08 to 0.23°C per decade. More recent temperatures show a higher rate of increase, particularly in maximum temperature (0.18 to 0.69°C per decade from 1989 to 2008). This clear signal of climate change is consistent with that found in previous studies of temperatures in Fiji and other Pacific Islands. Trends in extreme values show an even stronger signal of climate change than that for mean temperatures. Preliminary analysis of daily maxima at six stations indicates that for four of them (Suva, Labasa, Vunisea and Rotuma) there has been a tripling in the number of days per year with temperature >32°C between 1970 and 2008.[20] Trends in extreme values show an even stronger signal of climate change than those for mean temperatures. The most striking indicator of climate change in Fiji found by Mataki et al. (2006) was a significant increase in the number of hot days (Tmax >32°C) and decrease in the number of cool nights (Tmin <18°C) at Suva. The following climate change impact assessments have been made based on the medium climate change scenario:

- *Water resources*: Annual flows of rivers in the North and Northern area of North Central Coast are set to increase. Flood flows in most rivers tend to increase while flows during dry season are declining. After 2020, the groundwater level may drop drastically.

- *Sea-level rise* may also lead to higher risks of saltwater intrusion of rivers and underground water resources, causing serious social and economic losses.

- *Agriculture:* In most regions, the number of days when temperatures exceed 25°C will increase notably while the number of days when temperatures drop below 20°C will decrease. Water demand for agriculture may increase two or three-fold compared with that of 2000. Crop water shortage would be exacerbated with decreased cover of hydrophytes and rising evapotranspiration rates. Spring crop outputs are set to decline at a faster rate than summer crop outputs. Winter maize productivity may decrease in the Central Coast area.

- *Forestry:* Climate change will have a diverse range of impacts on forest ecosystems and flora. By 2100, native forest cover comprised of closed tropical moist semi-deciduous forests and closed evergreen forests, amongst others, will decrease. The ecosystems of closed tropical moist semi-deciduous forests are likely to be most affected by climate change. Climate change will heighten risks of forest fires in all regions, primarily during the dry-hot season.

3.1.3 Soils and topography

a) Soils

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. The general soil pattern of Fiji shows a strong correlation with the topographic and climatic pattern.

A national soil survey conducted during the 1960s 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[21]. Land is divided into eight classes based on a number of criteria,

[20] Temperature trends in Fiji: a clear signal of climate change Ravind Kumar, Mark Stephens and Tony Weir (2013): The South Pacific Journal of Natural and Applied Sciences, 31, 27-38, 2013.

[21] 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.

including slope, drainage, soil depth, water- holding capacity, extent of erosion, fertility, stoniness, rainfall and altitude.

Fiji had a comprehensive soil survey, characterization, classification and correlation completed in 1997. This report has detailed typical profile morphological, physical and chemical information on the 227 soil series identified in Fiji. This updated the soil classification based on location provides Series name, and follows the FAO system and follows on from the soil Taxonomy based earlier national soil resources survey (Twyford and Wright, 1965) classifications, moisture, temperature regimes, landforms, horizons (depth, colour, texture, structure, etc.). (See Table 3.3). The soil series have been mainly arranged following physiographic headings with the initial subdivision separating soils of the lowlands and foothills from those of the uplands. This separation reflects the change in soil temperature regime at 600m altitude soil temperature regime above 600m and below 600 and for the soil series there is a further category that subdivides soils on the basis of their internal drainage class, e.g. imperfectly drained, poorly drained[22].

Table 3.3 Soils of Fiji following the soil map of Fiji physiographic legend

Soils of Fiji	Summary of the different soil series
Soils of the lowlands and foothills <600m altitude	
Marine marsh	From marine and estuarine alluvium
Beach strands, dunes and estuaries	Derived from mixtures of calcareous sands, sands of high or low quartz content, river alluvium from basic and intermediate rocks over calcareous sands, estuarine alluvium, mixed 'black' sands and calcareous sands over coral beach rock
Major flood plains	Soils from river alluvium from basic and intermediate rocks, including soils of levees, relict river channels , river terraces, organic marital soils
Relict river terrace	Soils from river alluvium from acidic rocks, river alluvium from basic and intermediate rocks
Plateaux soils	Derived from basic and intermediate rocks; from rocks of acid composition
Secondary floodplains and depressions soils	Derived from mixtures of alluvium from acid and basic rocks
Fans and outwash surfaces	From river alluvium from basic and intermediate rocks
Karst landscape soils	Derived from elevated limestone
Young volcanic soils	Derived from various lava, ash etc.
Hill soils	Derived from a mixture of calcareous tuffs, sandstones marls, other sedimentary rock
Upland soils >600m	
Upland swamps	Derived from organic material
Food-plains and terraces	Alluvium derived from basic rock
Young volcanic landscape	Soils derived from basaltic rocks (as, lava etc) or the material derived from those rocks
Hill country	Derived from Basic and intermediate rock or alluvium from those rocks

b) Topography

The ER-P area is dominated by mixture of narrow coastal plans inland plateaus, steeply dissected, mountainous country with deep incisions of rivers and streams.

The geological history of Fiji is complex owing to its proximity to the Australian–Pacific plate boundary. The oldest rocks in Fiji are island-arc volcanics of Late Eocene age formed by westwards subduction of the Pacific

[22] A reference manual for utilizing and managing the soil resources of Fiji. D M Leslie (2012) Secretariat of the Pacific Community.

plate beneath the Australian plate.[23] 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 yr^{-1}, and within the zone that has been subject to volcanism. The northern part of the Viti Levu islands consists mainly of volcanic landforms. On Vanua Levu a chain of volcanic mountains aligned in a southwest to northeast orientation form a central highland spine and give a mountainous profile. The three tallest peaks above 900 m are towards the centre of the volcanic chain, south of Labasa Town. Most river networks drain generally northwest or southeast, controlled by the linear arrangement of the volcanoes.

c) Summary of land use

Demands on the land resources are increasing. If the on-going expansion of commercial cropping onto marginal lands, cropping on fragile soils without land conservation practices in place, deforestation and burning of grasslands continue, then Fiji will experience further land degradation, lower yields and an increase in rural poverty.

Predominant land uses in Fiji are rural agriculture, forestry, tourism, urban/commercial industrial Agriculture includes crops and livestock grazing. The farming systems in Fiji are largely influenced by weather, and tailored to suite the different climatic patterns wet or dry zones of the country.

In the dry zones of the main islands (Viti Levu on the western side toward Nadi and Vanu Levu around Labasa and further west), monocropping of sugarcane is planted extensively on flat land and even on quite steep slopes (these can be greater than 15 degrees) and pine (*Pinus carribea*) in the uplands. Repeated burning of the grass (or wild fires caused by burning of the sugarcane crops) has reduced some areas to bare ground (*talasiga* areas[24]) where subsoils are often exposed.

The wet zones are where most subsistence, semi-commercial and commercial planting taro, ginger and other root crops and tree crops such as breadfruit are primarily concentrated. Vegetables are intensively cultivated in Sigatoka valley in the intermediate zone and on scattered areas in the wet zone.

3.1.4 Hydrology

The larger rivers are generally monitored by hydrological stations, where flood flows commonly exceed several thousand cubic meters per second, especially in the Rewa, Fiji's largest river system. The basin covers 2,900 km^2, or approximately one third of the Island of Viti Levu. The main Rewa River is approximately 90 km long and the river discharges out into the Pacific Ocean through the Rewa River Delta into Laucala Bay close to Suva. The western portion of the Rewa watershed is located on the Nadrau Plateau where the maximum elevation is 1,360 m at Mount Victoria (Tomanivi) which is also Fiji's highest mountain. The Monasavu dam in the Rewa catchment in the central highlands on Viti Levu is Fiji's largest storage reservoir impounding 133 million cubic meters of water for Fiji's largest power station located 625 vertical meters below the reservoir at Wailoa which supplies 80 megawatts or up to 60% of the country's energy needs.

The Navua River catchment is located in south-eastern Viti Levu within the two provinces of Serua and Namosi With a drainage area of 1,070 km^2, this is Fiji's third largest river system with a river length of 91 km draining out into the Pacific Ocean at the Drakeilobi Bay within the Beqa Lagoon. At the highest point, the catchment is 1,084 m above sea level. Average annual rainfall in Navua town is 3,500 mm. [25]

The Sigatoka River extends on northwest to west side of the watershed and is sourced on the west side of Mount Victoria and flows for 120 kilometers to the coast between the central and western ranges. The Sigatoka River has a catchment area of approximately 530 km^2

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[23] The age and origin of the Pacific islands: a geological overview: V E Neall, SA Trewick (2008) Philos Trans R Soc Lond B Biol Soc 2008 Oct 27 363 (1508) 3293-3308.

[24] *Talasiga* meaning sunburnt land.

[25] Catalogue of Pacific Island Rivers, Pacificiwater.org 2019.

- In general, Fiji has poor and fragmented hydrological records, with few discharge measurements undertaken in the last decade, especially at medium and high flows for the larger rivers.
- Progressive deforestation for agriculture may cause flood peaking to become more extreme in the future.
- In January 2009 a massive rainfall event, (due to system convergence and not a cyclone), was experienced, being bringing the Nadi River up to catastrophic flooding levels
- The western and northern divisions of Viti Levu were flooded twice in early 2012.
- Surface water is used as the main source of water supply for all cities and major towns on the larger, high islands of Fiji, as well as for industry and irrigation.

The Ba River runs from its headwaters in the central mountainous parts of Viti Levu north through Ba Town, spilling into the Pacific near the village of Nailaga. The Ba River catchment is approximately 94,950 ha in size. Land use is dominated by talasiga (open grassland).

The Penang River (alternatively, the Rakiraki River) flows approximately 1km outside Rakiraki Town. Although the Penang River is considerably smaller than the Ba River, significant flooding and forced evacuations has occurred in recent years. The Penang River catchment is about 10,250 ha. Land use is dominated by talasiga.[26]

On Vanua Levu river watersheds are separated by narrow serrated interfluves and slope angles are steep, frequently approaching 30° or more. Upper river channels are steep and very bouldery; lower watershed areas have hilly terrain and flat alluvial terraces and flood plains in valley bottoms. The highlands are vegetated by natural rainforest, whereas the central coastal hinterlands are used for commercial sugarcane cultivation. The north coast of Vanua Levu island is particularly vulnerable to floods, owing to its geomorphological characteristics and because most tropical cyclones approach from northern Fiji waters.

In 2003 Tropical Cyclone Ami caused severe inundation of 3–4 m depth over a wide area. Huge quantities of sediments, deposited by swollen rivers, ruined sugar cane farms and extensive infrastructural damage was suffered by Labasa Town with disrupted domestic water supply on Vanua Levu forcing the Fiji Government to transport potable water from Viti Levu.[27]

3.1.5 Early human settlement

Recent discoveries suggest that the southwest coast of Viti Levu was one of the first regions to be settled by human colonists. Currently, the earliest-known settlement in Fiji is Bourewa located at the mouth of the Sigatoka River. Dated to between 1350 and 970cal BC this site consists of shell and ceramic midden a top calcareous beach sand. Bourewa is also located at the point where the broad coral reef comes in contact with the shoreline, although at the time of occupation it was a small island 1km off shore. The Bourewa site was occupied first by the Lapita people, population who colonized Fiji (and other west Pacific archipelagoes) between 1350 and 550BC. Lapita sites have been found elsewhere in south west Viti Levu. Little is known of the successors of the Lapita people in this part of Fiji, although other studies in the archipelago suggest that most of the population remained tethered to coastal resources for nearly two millennia.[28]

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[26] Evaluating ecosystem-based adaption for disaster; P Brown, A Daigneault, D. Gawith, W. Aalbersberg, J. Comley. P. Fong, F. Mogan. Landcare Research, USP.

[27] Hazard warning! Hydrological responses in the Fiji Islands to climate variability and severe meteorological events; Regional Hydrological Impacts of Climatic Change Hydroclimatic Variability (Proceedings of symposium S6 held during the Seventh IAHS Scientific Assembly at Foz do Iguaçu, Brazil, April 2005). IAHS Publ. 296, 2005.

[28] Human responses to climate change around AD 1300: A case study of the Sigatoka Valley, Viti Levu Island, Fiji R. Kumar, P D Nunn, J S Field, A de Biran. Quaternary International 151 (2006) 133–14.

3.1.6 Species biodiversity and endemism

As of August 2013, 1,417 species in Fiji were assessed according to the IUCN Categories and Criteria for inclusion in the Red List of Threatened Species. While the majority of assessed species are found in marine habitats, a greater percentage of terrestrial species are threatened. This pattern can be explained by the more restricted range of many of the terrestrial species and the extent of human impact on terrestrial ecosystems.

Agricultural activities of concern include cattle farming, logging, wood harvesting and shifting cultivation practices (which can include conversion to coconut and sugarcane plantations). Land-use change due to agriculture, the spread of invasive species, fires, habitat degradation and alteration, mining activities and over-exploitation are the main threats to all single-country endemic species. In total, 930 of the 2,062 extant single-country endemic species (nearly 45%) are at a risk of extinction.

The biggest threats to single-country endemic species classified as "threatened" are the spread of invasive species followed by land-use change due to agriculture, fires and habitat loss.

Of a total of 258 extant Fijian endemics, 45% are plants, and 34% are molluscs (Class *Gastropoda*). Over half (56%) of these endemics have been assessed as threatened, with 32% listed as Critically Endangered.

The uniqueness of its biodiversity distinguishes Fiji from all other countries. Much of Fiji's biodiversity is unique to Fiji, however, virtually most if not all of the terrestrial natural habitats of Fiji have been modified or even extensively modified over time due to human influence. This does not in any way reduce the significance of the biodiversity. While the National Biodiversity Strategy and Action Plan does not systematically recognize different risk management approaches to protecting biodiversity, however, it does recognize, that some areas are of critical importance. This follows advice from international and national conservation NGOs (this also follows the OP4.04) and of the course the Action Plan recognises protected areas, nature reserves etc. (see Table 3.4 and Figure 3.1 below). The conservation NGOs (including NatureFiji, BirdLife International IUCN, WCS etc.) have identified important biodiversity areas and these are all listed in the National Biodiversity Strategy and Action Plan. For example, these include the identification of Important Bird Areas, Endemic Bird Areas, Key Biodiversity Areas and Alliance of Zero Extinction Sites (all have accepted international definitions e.g. "IBAs are sites of global biodiversity conservation importance selected because they may hold threatened birds, birds restricted to particular regions or biomes…" etc., see Section 3.1.6 c) below). The National Biodiversity Strategy and Action Plan also recognises "critical" ecosystems (but not all potential "critical" habitats are recognized as such) and there is no definition of risks faced by different habitats, nor are there definitions of "critical" "natural" or "modified" habitats used in Fiji. As noted already, almost all the natural habitat ecosystems of Fiji have been modified to some extent, but some "critical natural habitat" areas are included in the National Biodiversity Strategy and Action Plan. The ER-P area for Fiji includes the following which are referred to as "critical" (in a broad sense) by the National Biodiversity Strategy and Action Plan: 1) Areas of cloud forest, 2) The Sovi Basin (this is the largest remaining relatively undisturbed tract of lowland forest), 3) Kilaka Forest an area of relatively undisturbed upland forest (Kilaka Forest Conservation Area 4.02km^2) on Vanua Levu, 4) mangroves (in general), 5) riparian forest (in general), 6) wetlands (in general including two Ramsar sites), and 7) the IBA, KBAs, and AZE sites.

The National Biodiversity Strategy and Action Plan notes that different risk management approaches are not available for all critical habitats i.e. "most of the protected areas do not have management plans in place although the National Trust is piloting management plans for Sigatoka Sand Dunes National Park and Sovi Basin Protected Area and other NGOs such as WCS have been working on management plans for protected areas. Furthermore, many of the areas have not been selected on the basis of ecological knowledge or biodiversity values".). It should also be noted that there is no intention in the ER-PD to promote significant activities to disturb, modify, log, replant etc. any potential "critical" habitat or protected area; quite the opposite as the ER-PD does include strengthened forest governance and which should contribute to improvements to the protection of the protected areas, high conservation forest and hotspots of high biodiversity. The ER-P will support the development of management plans/ improved management approaches and any necessary mitigation for critical natural habitats and this approach is included in the SESA (Tables 4.2 and 4.3) and the ESMF (Tables 4.1 and 4.2).

Of the 1,769 native vascular plant species in Fiji, 50% or more of Fiji's plants and birds, all 24 palms, 72 of the 76 species of *Psychotria*, both frogs, over 90% of some insect groups, such as cicadas and marine insects, are all endemic. The total number of vascular plants known is approximately 2,600, of which 1,600 are native and 1,000 introduced. Current best estimates suggest that Fijian flora consists of 310 *pteridophytes* and at least 2,225 seed plants. Out of a total of 27 reptile species, 12 are endemic.

Fiji's remaining native forest is now mainly confined to areas of high rainfall and elevation and steep slopes, with much of the accessible lowland forest cleared by loggers and converted to plantations or agriculture. The exploitation of forests for timber has played a major role in deforestation and significantly affected forest quality and diversity (GoF, 2010c). The loss of native forest will have undoubtedly affected populations of the restricted-range species and several are classified as threatened or Near Threatened. An example is *Lamprolia victoriae*, which, although still common in forest on Taveuni (nominate *victoriae*), is very rare on Vanua Levu (race *kleinschmidti*) where it is restricted to the already heavily logged and unprotected Natewa peninsula. The survival of the majority, if not all, of the restricted-range species will depend on the existence of areas of native forest large enough and sufficiently well distributed to negate the localized destruction caused by regular cyclones (D. Watling *in litt*. 1993).

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, reef and foreshore ecosystems.

Fiji has undertaken a number of initiatives to progress towards biodiversity conservation in the country, and these are documented in Fiji's Fifth National Report to the Convention of Biological Diversity (CBD) (GoF, 2014a). The report highlights the increasing importance of preventing spread of invasive species: "Travel within the Fiji group is increasing rapidly and there is a need for measures to be introduced to prevent the spread of established invasive species within Fiji's 300+ islands".

The 2013 State of Conservation in Fiji assessment also outlines key achievements in conservation in Fiji, with particular focus on the size and type of protected areas and governance initiatives in the country (SPREP, 2016).

The National Environment Strategy (NES) drew up a list of 140 Sites of National Significance, proposing that a formal legislative process be enacted to give them greater protection from destructive development. There are 16 Forest Reserves (22,214 ha)[29], six Nature Reserves (5,373 ha) and 15 Parks (16,912 ha) and two Ramsar sites 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).

In the 15 years since the NES, a several forest areas have been reserved either through formal leasing arrangements with landowners or through informal agreements. Notable among these are Waisali – established through a formal lease in 1996; and the 'Heritage Parks' of Bouma and Abaca.

a) Terrestrial protected areas in Fiji

Fiji's Fifth National Report to the CBD notes that there are 23 existing terrestrial protected areas in Fiji, covering 50,000 ha. Approximately 35,000 ha on Viti Levu and the remaining 15,000 ha on Vanua Levu and Taveuni. Most of the protected areas do not have management plans in place. See Table 3.4 for a list of Forest Reserves and Protected Areas and Figure 3.1 for the location of protected areas in the ER-P area.

The Fiji National Protected Area Committee (PAC) was established in 2008 under section 8(2) of Fiji's Environment Management Act 2005 as a technical advisory arm to the National Environmental Council (NEC).

Priority locations for terrestrial protected areas have been identified in Fiji's NBSAP and include Tomainivi National Park, Monosavu- Nadrau Platea and Koroyanitu on Viti Levu, Tunuloa Silktail Reserve, Vunivia and Waisali on Vanua Levu and the Taveuni Conservation Area (including Taveuni Forest Reserve, Ravilevu

[29] Ministry of Forests, 2016 Key Statistics Booklet. The Conservator of Forests, Ministry of Forests, 2016.

Nature Reserve and Bouma-Lavena Forest Park) on Taveuni Island (DoE 2007). Taveuni has a large area of rainforest protected as Reserved Forest. Consequently most watersheds in Taveuni are still forested, and reefs minimally affected by land-based sediments.

The Taveuni Forest Reserve, Ravilevu Nature Reserve comprise a several ecosystems coastal lowland, wetland, upland or montane and cloud forest systems and a include the discovery of a new palm species and a recent survey[30] found 562 taxa of plant species were recorded including two unknowns. The main threats the protected areas focus on agricultural encroachment

The Sovi Basin is the largest remaining undisturbed tract of lowland forest in Fiji. As an alternative to the logging and agricultural conversion that has decimated some of the country's other forests, Conservation International, the Fiji government and the local landowners agreed to use a conservation agreement to create new protected areas on land owned by traditional owners. The landowners will receive lease and royalty payments in return. In total, 20,000 hectares of the basin are now protected, conserving 11 different forest types and 10 endemic bird species, one of which is the endangered long-legged warbler (*Trichocichla rufa*), which was previously considered extinct and then re-discovered in Sovi only six years ago (Government of Fiji 2010). However, proposed development of the Namosi copper mine and construction of a dam by the Fiji Water Authority may threaten the protected area in the Sovi Basin if these proposals are successful.

[30] An assessment of the Biological Diversity and Sites of Archeological Significance within the Taveuni Forest Reserve and the Ravilevu Nature Reserve (2017); Marika Tuiwawa, John Game Senilolia Tuiwawa, IAS technical report no. 2017/19 USP.

Table 3.4 List of forest reserves, parks and nature reserves and protected area in ER-P area

ER-P province	Forest Reserve	Area (ha)	Other parks and reserves	Area (ha)	Nature reserves	Area (ha)
1. Viti Levu						
Ba	Buretolu	1,198			Tomanivi	1,323
	Nadarivatu	7,401			Nadarivatu	93
	Tavua	two roads			Naqaranibuluti	279
					Mount Evans forest park	210
Ra						
Nadroga-Navosa					Sigatoka sand dunes	240
Serua	Yarawa	162	Batiniwai protected forest	15,749		
Namosi					Garrick mem park	427
Rewa						
Taievu						
Naitasiri	Savura	447				
	Colo-i-Suva	369				
2. Vanua Levu						
Bua						
Macuata						
Cakuadrove (includes Taveuni)	Taveuni	11,291			Ravilevu	4,018
	Ravilevu	4,018			Bouma forest park	81
	Korotari	1,047				
Other area		206				107.6
Total		**25,933**		**15,749**		**6,671**

b) Ramsar Sites

Fiji Joined Ramsar convention 11 August 2006 and currently has two sites.

Upper Navua Conservation Area (Ramsar Site no.1612 since April 2006).

The Upper Navua Conservation Area is located in the Province of Serua on the south central side of the island of Viti Levu. The site is nationally and internationally exceptional in terms of both fauna and flora. Upper Navua Conservation Area is one of the very few relatively untouched major drainages remaining in Fiji and an excellent representative of this wetland type within the Fiji Tropical Dry Forests biogeographic region[31].

Qoliqoli Cokovata (Ramsar site No. 2331 since January 2018).

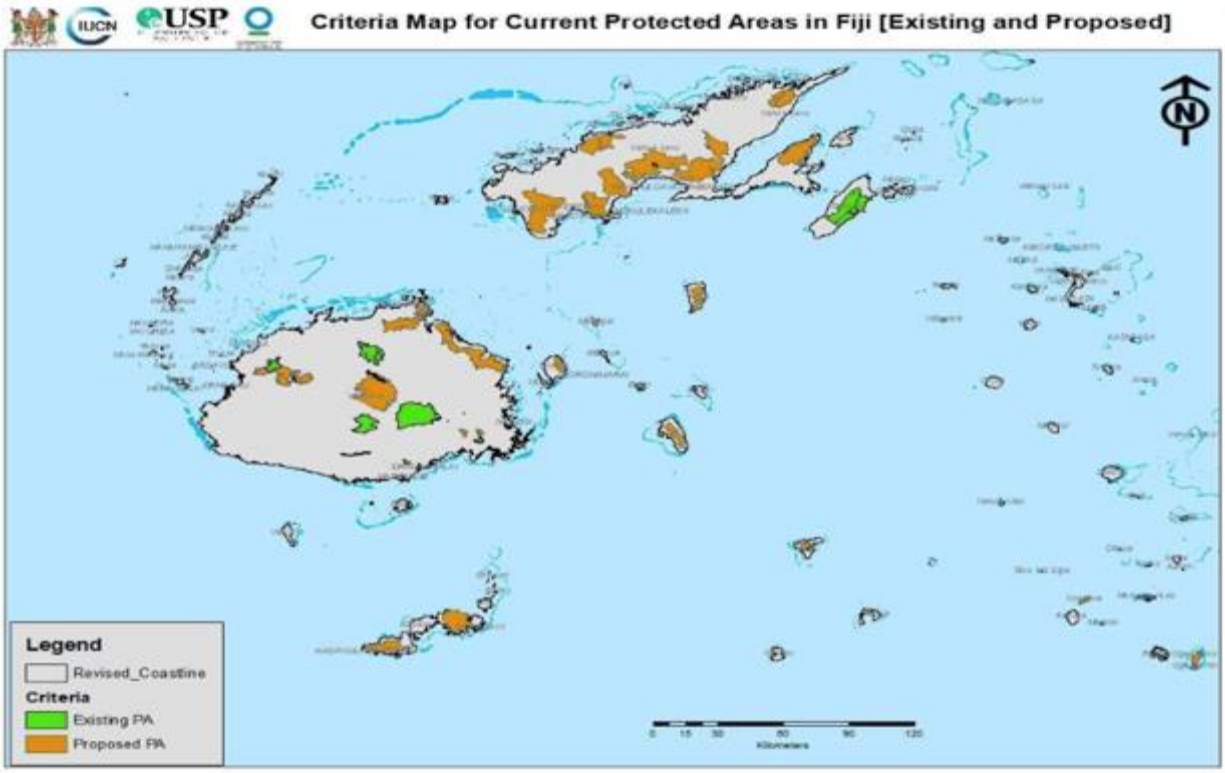
[31] Ramsar Wetlands information Sheet (RIS) 1612 2009-2014 Ramsar.

Located on the north coast of Vanua Levu. It is bounded on the northern seaward side by an extensive barrier reef system known as Cakaulevu or the Great Sea Reef (GSR). At over 260 km in length, the GSR is the third longest continuous barrier reef system in the world. The GSR system and the associated reefs, lagoons, seagrass-algal beds and mangroves sustain an exceptional level of marine biodiversity and endemism in the Fiji Islands marine ecoregion, and has been identified as one of the five marine priority conservation areas in Fiji (WWF South Pacific, 2003). The Qoliqoli Cokovata is considered the "heart" of the entire GSR, thus is of global significance too. The inland boundary of the site follows the coastline and the 37 villages of four districts (Dreketi, Macuata, Sasa and Mali) residing on the adjacent land and associated islands collectively retain custodial ownership over the Qoliqoli Cokovata[32].

Proposed Ramsar site: Lake Tagimoucia

There is a Ramsar nomination for Lake Tagimoucia, Fiji's largest freshwater lake, located on the island of Taveuni. Nature Fiji is drafting an RIS and IUCN Oceania is developing a map of the lake.

Figure 3.1 Protected areas and key biodiversity areas of the ER-P



c) Important Bird Areas, Endemic Bird Areas, Key Biodiversity Areas and Alliance for Zero Extinction Areas

Half of Fiji's 66 land bird species are endemic and 15 species are threatened with extinction following ~70% deforestation. Under conditions of large-scale habitat loss, secondary vegetation can be important for woodland biodiversity conservation[33]. Regenerating forest sites have been found to have the greatest species richness with mostly endemic and native woodland bird species and few introduced species. Regenerating plantation sites harboured a comparable number of endemic species and threatened species as regenerating

[32] Ramsar Wetlands information Sheet (RIS) 2331 2018 Ramsar

[33] The conservation value of secondary vegetation for Fijian woodland birds; E Reid, A. Naikatani, G. Keppel, S. Kleindorfer ; (2019) Ornithology of New Guinea and the Indo-Pacific Islands

forest sites but had significantly fewer native species and no introduced species. Important Bird Areas (IBAs[34]), 13 IBAs are confirmed in Fiji, and an additional 19 sites have been proposed. Two Endemic Bird Areas (EBA) are recognised in Fiji. The first includes all the Fijian islands with the exception of Rotuma. This EBA ranks third for numbers of restricted-range bird species in the Pacific and includes the Endangered long- legged thicket bird (*Trichocichla rufa*), and the Vulnerable pink-billed parrot finch (*Erythrura kleinschmidt*), the Ogea monarch (Mayrornis versicolor), the crimson shining-parrot (*Prosopeia splendens*) and the shy ground-dove (*Gallicolumba stairi*). All the restricted-range species occur in forest, and some occur in man-modified habitats. Many species are widely distributed through the islands, but two are confined to Vanua Levu and Taveuni, three to Viti Levu and four to Kadavu. The Ogea Monarch M. versicolor is restricted to Ogea in the Lau archipelago, occurring on the two principal islands—Ogealevu (13 square kilometers) and Ogeadriki (5 square kilometres)—and on the smaller nearby Dakuiyanuya. Several of the more-widespread restricted-range species are shared with the Samoan Islands (EBA 203) and/ or other Central Polynesian Secondary Areas (s127-s131), and a few occur to the west in Vanuatu (EBA 200) (BirdLife International 2013).

Fiji has 32 Key Biodiversity Areas (KBAs) including 10 marine IBAs.

There are currently five recognized Alliance for Zero Extinction (AZE) areas in Fiji three are in the ER-P area Mount Evans Range, Mount Koroyanitu, Nausori Highlands, and Taveuni Forest Reserve. The Alliance for Zero Extinction (AZE), a joint initiative of biodiversity conservation organisations from around the world, aims to prevent extinctions by identifying and safeguarding key sites, each one of which is the last remaining refuge of one or more Endangered or Critically Endangered species. AZE is first focusing on species that face extinction either because their last remaining habitat is being degraded at a local level or because their tiny global ranges make them especially vulnerable to external threats. To be designated as an AZE site, a site must meet all. Three criteria: it must contain at least one Endangered (EN) or Critically Endangered (CR) species, as listed on the IUCN Red List; it must be the only area where an EN or CR species occurs and contain the overwhelmingly significant known resident population (>95%) of the EN or CR species; and it must have a definable boundary. The following Table 3.5 show a list of endangered species.

Table 3.5 Summary of endangered species (not including marine life)

Species	IUCN Status / Notes
Birds	
Red throated lorikeet (*Charmosyma amabiis*)	Critically endangered unseen since 1993
Bristle-thighed curlew (*Numenius tahitiensis*)	Vulnerable not known only a few recorded observations
Silktail (*Lamprolia victoriae*)	Vulnerable
Ogea monarch (*Mayrornis versicolour*)	Vulnerable
Rotuman myzomela (*Myzomela chermesine*)	Vulnerable
Friendly ground dove (*Gallicolumba stairi*)	Vulnerable
Black faced shrike-bill (*Clytorhynchus nigroularis*)	Vulnerable
Pink billed parrot-finch (*Erythura kleinschmidti*)	Vulnerable
Shy ground dove (*Alopecoenas stairi*)	Vulnerable
Fiji petrel (*Pseudobulweria macgillivrayi*)	Critically endangered
Polynesian storm petrel (*Nesofregetta fuliginosa*)	Vulnerable (but not found in Fiji anymore)
Long-legged warbler/ thicket bird (*Trichocichla rufa*)	Endangered no known - very rare
Kadavu parrot (*Prosopeia splendens*)	Vulnerable
Giant forest honeyeater (*Gymnomyza viridis*)	Least concern
Taveuni Silktail (*Lamprolia victoria*)	Near threatened

[34] Total IBA area 5.88M ha. IBAs are promoted globally by the BirdLife International Partnership as conservation priorities for birds and other biodiversity but are not a statutory designation. Total number of bird species 108, globally threatened 14 and country endemics 36.

Species	IUCN Status / Notes
Azure crested flycatcher (*Myiagra azureocapilla*)	Near threatened
Plants	
Dalo (*Colocasis esculenta*)	Traditional variety being replaced by hybrids
Cibicibi (*Cynometra falcata*)	Endemic under threat
Yaka (*Dacrydium nausoriense*)	Endangered under IUCN, Threated by over exploitation
Tagimaucia (*Medinilla waterhousei*)	Status not clear, unknown very limited distribution only on Taveuni and Mt Seatura
Yanita (*Pterocymbium oceanicum*)	Critically endangered, unknown limited distribution
Balaka (*Balaka macrocarpa*)	Critically endangered
Sandalwood (*Santalum yasi*)	Status not clear, populations in the wild have been over exploited
Pacific kauri (*Agathis macrophylla*)	Endangered, over exploited
Drautabua (*Acmopyle sahniana*)	Critically endangered
Balaka (*Balaka streptostachys*)	Critically endangered
Soga (*Metroxylon vitiense*)	Endangered Rare only small populations
Taqwa (*Cyphosperma tanga*)	Critically endangered Rare only very small populations
Alsmithia longipes (*Heterospathe longipes*)	Endangered Unknown Restricted distribution
Vilaito (*Neoveitchia storckii*)	Endangered Unknown Restricted distribution
Navua palm (*Heterospathe phillipsii*)	Endangered Restricted distribution
Neuburgia macroloba	Endangered
Spiraeanthemum serratum	Endangered
Cyphosperma trichospadix	Vulnerable
Aglaia basiphylla	Vulnerable
Physokentia thurstonii	Near threatened
Mammals	
Fiji blossom bat (*Notopteris macdonaldi*)	Vulnerable
Pacific sheath tail bat (*Emballonura semicaudata*)	Endangered restricted last seen in 1979 on Viti Levu
Fijian flying fox (*Mirimiri acrodonta*)	Critically endangered Very rare restricted population on Taveuni
Reptiles	
Fijian copper headed skink (*Emoia parkeri*)	Vulnerable, rare due to loss of forest habitat and one of Fiji endangered reptiles
Green turtle (*Chelonia mydas*)	Endangered
Hawksbill turtle (*Eretmochelys imbricate*)	Critically endangered
Fiji burrowing snake (*Ogmodon vitianus*)	Vulnerable, Fiji's only endemic snake
Ono-i-lau skink (*Leiolopisma alazon*)	Critically endangered Unknown, very limited distribution of one island
Cretsed Iguana (*Brachylophus vitiensis*)	Critically endangered
Fiji Banded Iguana (*Brachylophus fasciatus*)	Critically endangered
Rotuman forest gecko (*Lepidodactylus gardineri)*	Vulnerable, unknown limited distribution
Leatherback turtle (*Dermochelys coriacea*)	Critically endangered
Fiji Ground frog (*Cornufer vitianus*)	Endangered
Fiji Green Tree Skink (*Emoia concolor*)	Near threatened
Barred tree skink (*Emoia trossula*)	Endangered

Table notes: Information from NatureFiji and IUCN Red List.

d) Forest Ecosystems

The native terrestrial vegetation of Fiji is predominantly rain-forest, which varies principally in response to the climate. On the wetter south-eastern side of the large islands, the forests are diverse and mixed, including about 1350 vascular plant species. In general the forests are taxonomically diverse, in keeping with most tropical rainforests. On the drier northwest side of the large islands and on small islands there area few remains lowland forests. These are mostly restricted to rocky sites. With increasing altitude there is a decline in species diversity of the forests and a gradual decline in canopy height. The cloud base is reached at about 600-800 m near southeastern coasts and at 900-1100 m inland, giving rise to cloud-shrouded mountain ridges sup- porting cloud forest.[35]

Major habitat types on each of the major islands (Viti Levu, Vanua Levu, Taveuni, Kadavu and Gau) and island groups (Mamanuca, Yasawa, Lau and Lomaiviti Groups, and Rotuma) include:

- Cloud forests: on the top of higher mountains (Ash 1992 cited by Olson et al. 2009);
- Montane forests: between 600 and 800 meters;
- Lowland moist forests: 0–600 meters;
- Transition forests between the wet and dry sides of the larger islands;
- Tropical dry forests - currently only small fragments of tropical dry forest remain in Fiji [36]; and
- Coastal littoral forest (CLF) - is found along beaches and supra-tidal coastal areas, inner margins of mangroves and small, uninhabited offshore islands. This forest type comprises drought- and salt-tolerant ocean-dispersed plants and is one of the most highly threatened ecosystems in Fiji; and

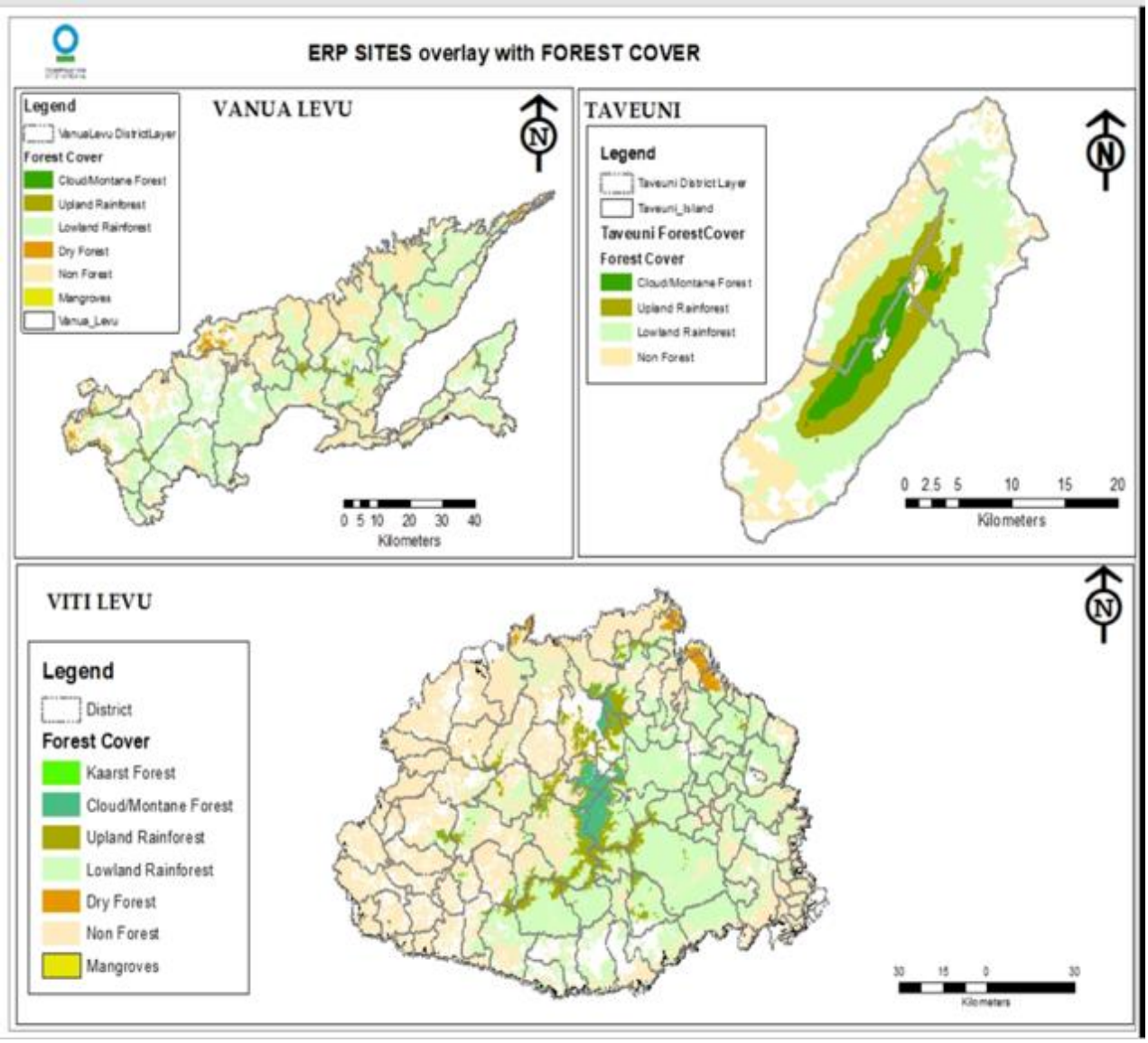
The following

[35] Vegetation Ecology of Fiji: Past, Present, and Future Perspectives; J Ash; Pacific Science (1992) vol 46, no.2 111-127

[36] Dry zone forests of Fiji: Species composition, life history traits, and conservation; Gunnar Keppel and Marika V. Tuiwawa (2007) New Zealand Journal of Botany, 45:4, 545-563.

- Figure 3.2 shows the forest cover map.

Figure 3.2 Forest cover in the ER-P area



Recent trends indicate an increase in overall forest cover in Fiji from 52% of land mass in 1990 to 56% of land area in 2010 (Food and Agriculture Organisation of the United Nations (FAO) 2010) (see Table 3.6), reflecting the increase in plantation forestry (primarily pine and mahogany), which now composes 11% of the forest area of Fiji (Government of Fiji 2010). The increase in plantation forests was associated with a 9% decline in primary forest cover from 490,000 hectares in 1990 to 449,000 hectares in 2010. This trend is continuing with on-going clearance of primary forests. There has been a loss of certain forest types, some of which were once extensive in Fiji (Government of Fiji 2010).

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 and converted to plantations. The exploitation of forests for timber played a major role in deforestation and significantly affected forest quality and diversity (Government of Fiji 2010). Remaining areas of natural forests in Fiji are also threatened by expansion of hydropower and large-scale mining.

Loss of forest cover has important ramifications for terrestrial ecosystems. The first relates to biodiversity as loss of habitat is a major cause of species loss and extinction. The second relates to the impacts of land clearance and increasing erosion, which has flow-on effects on freshwater and coastal ecosystems as a result of siltation and sedimentation.

Table 3.6 Change in forest cover over time in Fiji

Area 1000 ha									Forest change		
Land area	1990 forest area	1990 Forest %	2000 Forest area	2000 Forest %	2005 Forest area	2005 Forest %	2010 Forest area	2010 Forest %	1990-2000 %	2000-2005 %	2005-2010 %
1,827	953	52	980	54	997	55	1014	56	0.29	0.34	0.34

e) Forest conservation issues

- For most of the Fijian forest resources, conservation concerns focus on i) the management of a forest that has been selectively logged once and is likely to be logged again logging procedures and management regimes are also a concern for conservation; ii) expansion of agriculture; and invasive species[37];
- Areas of cloud forests, in particular, are very limited and all areas should be placed in reserves:
- The upland lake and swamp catchments of Taveuni;
- Representative sustainable areas of *Pandanus* swamp mangroves, dune, beach vegetation[38]; and
- Tropical dry forest are probably the most endangered ecosystem in Fiji and there is an urgent need to assess the conservation status of all remaining tropical dry forest fragments to ensure that the best remaining remnants of Fiji's tropical dry forest are preserved.[39]

Threatened coastal trees in Fiji include:

- Vesi (merbau, Intsia bijuga), which has disappeared from coastal and limestone forest due to overexploitation on many islands;
- Drala (coral tree or dadap *Erythrina variegata* var. *variegata*), an important nitrogen fixing and cultural tree, that has disappeared in Fiji over the past decade due to infestation by an African wasp;
- Mulomulo (Portia or thespians tree, *Thespesia populnea*), which has disappeared due to the clearance along the inner margins of mangroves and overuse for medicine and woodcarving; and
- Bird-catcher or lettuce tree (*Pisionia grandis*), the most important seabird rookery species, which is threatened or has disappeared from many islands.

Fiji's agreed to follow the Aichi biodiversity targets[40] with indicators assessment and include:

- By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and forest degradation and fragmentation is significantly reduced.

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[37] A Guide to Monitoring Import Bird Areas in Fiji Tuverea Tumoto, Miliana Ravuaso, Mark O'Brien BirdLife International (2012). The guide includes detailed monitoring of state of and threats to the IBAs and for other detailed discussion see reports from the different conservation NGOs.

[38] Vegetation Ecology of Fiji: Past, Present, and Future Perspectives; J Ash; Pacific Science (1992) vol 46, no.2 111-127

[39] Dry zone forests of Fiji: Species composition, life history traits, and conservation; Gunnar Keppel and Marika V. Tuiwawa (2007) New Zealand Journal of Botany, 45:4, 545-563

[40] From the National Biodiversity Strategy and Action Plan for Fiji 2017-2024, Ministry for Housing, Local Government and Environment 2017. The NBSAP is a national policy document recognised under the Environment Act 2005.

- By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

f) Forest types

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 %, 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 % 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 Forest Resource Assessment[41] lists four forest classes within its forest area, namely (i) closed forest, (ii) open forest, (iii) pine plantations, and (iv) hardwood plantations. For the FRL, land that falls under one of these four classes is defined as forest. Mangrove is not listed under forest in Fiji's Forest Resources Assessment (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).

Mangrove are currently not included the reasons stated:

- Three governmental agencies have regulatory jurisdiction over mangrove and, therefore, the Ministry of Forestry refrained from including mangrove in the forest reference level (FRL) to avoid potential conflict between the agencies involved;
- Mangrove may be considered under "Coastal Wetlands (Blue Carbon)" in the LEDS; and
- Ensure consistency with other reporting requirements (i.e., FRA reporting).

However, there is **no technical or carbon accounting reason** why they cannot be included particularly as the mapping of mangroves has been completed.

Also there are **very strong socio-economic reasons for including** them as it is estimated that 35%-40% of Fijians are wholly or partially dependent on mangroves.

MOF is **already very involved in the management of mangroves** – is a member of the National Mangrove Management Committee and supports an International Tropical Timber Organisation (ITTO) project on mangrove rehabilitation.

The project would be an opportunity to improve cross sector management approach of the mangroves.

The Forest Decree recognises three types of forest by the use purpose. More detail of this category is described in the Table 3.7 below.

[41] Global Forest Resource 2015, Country Report, Fiji, (2014), FAO, Rome, the report was prepared as a contribution to o the FAO publication, the Global Forest Resources Assessment 2015 (FRA 2015).

Table 3.7 Forest and land use classification system for national scale

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 per cent 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.
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'.

3.1.7 Invasive species

The South Pacific region is a hotspot of biodiversity but also has the world´s highest concentration of invasive alien plant and other species see the following Table 3.8 for some of the important invasive plants and their potential impacts.

Invasive plant species are plants introduced by humans to localities outside their natural range that become established in their new environment (Lowe, Browne, Boudjelas, & de Poorter, 2000). The economic and ecological impacts of invasive alien plants worldwide have been widely documented (Rejmánek, Richardson, Higgins, Pitcairn, & Grotkopp, 2005; Pyšek & Richardson, 2006; Richardson, Daehler, Leishman, Pauchard, & Pyšek, 2010). The number of invasive alien species in Fiji and in, the South Pacific is steadily rising. The Pacific Islands Ecosystems at Risk (PIER) database lists, as of September 2018, 1,930 invasive alien plant species (Denslow et al., 2009; PIER, 2018a), a notable increase on the 1,132 identified four years previous (Meyer, 2014). Of those 1,930 species, 597 have been recorded from Fiji (PIER, 2018b).

In Fiji, the Department of Environment (DoE) is the chair of the Biodiversity Steering Committee (BSC). This board is responsible for the coordination and implementation of the National Biodiversity Strategy and Action Plan (DoE, 2007). Invasive alien species are defined as one of seven thematic fields for the implementation of biodiversity conservation through the plan (DoE 2014). In 2009, a meeting of the Species Management Committee, along with other groups and stakeholders, in Suva assessed major threats to native biodiversity caused by invasive alien species and investigated necessary measures for the mitigation of these threats by creating an implementation framework for species conservation (DoE, 2014). This meeting resulted in

current efforts for the prevention of new introductions, management of established species in key biodiversity areas, and the eradication of specific species on small islands (DoE, 2014).

The only two invasive alien plant species that have been formally acknowledged as a major threat to the genetic resources of Fiji's forests are the African tulip tree (*Spathodea campanulata*) and Mission grass (*Pennisetum polystachion*) (FAO, 2010; Brown and Daigneault, 2014). However, the Fiji Invasive Species Task Force has been formed to discuss invasive species.

Table 3.8 Selected invasive species and summary of risks and possible benefits

Invasive Species	Latin name	Risks	Possible benefits
African tulip	*Spathodea campanulata*	Populates disturbed or areas or gaps in the forest	Pioneer species helps maintain ground cover where otherwise it may be lost and lead to soil erosion and land degradation risks
Mission grass	*Pennisetum polystachion*	Considerable wildfire risk during dry season	Ground cover but introduces considerable fire risk
Selected other selected invasive species			
Ivory cane palm	(*Pinanga coronata*)	Considerable threat to biodiversity, spread rapidly and outcompetes endemic fauna	None recognised to date
Merremia vine and Mile a minute vine	*Merremia peltata, and Mikanai micrantha*	Tendency to smother regrowth	Maintains ground cover can be removed
Pine	*Pinus caribaea*	Volunteer re-growth	Pioneer species helps maintain reduce land degradation
Mahogany	*Swietenia macrophylla*	Low risk/ low disbursement	Helps maintain forest cover
Lantana	*Lantana camara*	Populates disturbed or areas	Helps maintain ground cover
Acacia	*Acacia Mangium*	Recent introduction, non-native impact local biodiversity if grown in continuous plantations	Fast growing, grows on poor soil, leguminous, can be used to recover badly degraded land. Can be inter-planted with slower growing native species
Kosters curse	*Clidemia hirta*	Can form dense thickets that smother plantations, pastures and native vegetation	Helps maintain ground cover
Lucaena	*Leucaena leucocephala*	Invasive in degraded vegetation systems, considered one of the 100 worst invasive species by the Invasive Species Specialist Group of IUCN	Fast growing legume, maintains ground cover and has multiple uses, as fodder, firewood or charcoal, green manure etc

African Tulip (*Spathodea campanulata*)

African Tulip is native to equatorial Africa and was introduced into Fiji as an ornamental tree in the 1930s (Smith, 1979). The species is listed as one of 100 of the World's Worst Invasive Alien Species by the Invasive

Species Specialist Group (Lowe, Browne, Boudjelas, & de Poorter, 2000). In Fiji, African Tulip is now the dominant tree species in secondary forest and abandoned plantations, in some areas forming large monotypic stands, and has recently been recorded in primary forest (Keppel & Watling, 2011). The Fiji Department of Agriculture (Swamy & Singh, 2008) listed African Tulip as a noxious weed, as it invades valuable farmland and is difficult to eradicate due to rapid re-sprouting from stems and high numbers of seeds and seedlings. In a survey of 360 households in 30 villages conducted in eastern Viti Levu in 2012, 76% of respondents stated that African Tulip reduces agricultural output, 36% stated that Aftican Tulip reduces land for grazing, and 48% stated that African Tulip competes with other useful trees (Daigneault & Brown, 2013). The same study also stated that farmers spend 10% of their 35 hours a week on managing African Tulip whilst 95% of the villages stated that population of African Tulip is increasing (Daigneault & Brown, 2013).

There is an on-going debate among the Fijian scientific community about the economic and ecological benefits and impacts of African Tulip, in addition the potential for African Tulip to assist in the restoration of agricultural and degraded land (Keppel and Watling, 2011); however, further research is needed to quantify the negative and positive impact of African Tulip.

Merremia vine (*Merremia pelatata*)

Lianas and vines are part of a forest ecosystem that constitute less than 5% of woody plant biomass in tropical forests (DeWalt & Chave, 2004). When established they reduce natural tree recruitment growth and increase the regrowth recovery times leaving low-canopy, liana dominated areas which then extend outward over time (Schnitzer, Dalling, & Carson, 2000; Schnitzer, Mascaro, & Carson, 2008). They usually occupy tree fall gaps created through natural tree mortality, landslides or tropical cyclones. A recent long-term study in Panama found that lianas have a huge negative impact by reducing the net-above uptake by about 76% per year (van der Heijden, Powers, & Schnitzer, 2015).

Merremia peltata is a woody vine, and although it is native to the pacific region, it is considered an invasive in this study by virtue of the nature of its growth, dispersal ability, phenotypic pasticity and wide tolerance range. Recorded from most high islands in Fiji; it is a serious invasive species due to its smothering effect on trees up to 20 meters high on forest edges (Daigneault & Brown, 2013; Taylor & Kumar, 2016).

It is found on lowland wet areas around abandoned or fallow lands, along rivers and old settlements. It has been classed by academic experts in the pacific region as a serious threat to natural ecosystems with an urgency to develop bio-control (Meyer, 2000). It takes over logged areas thrives on disturbance where it smoothers native plants. In recently logged mahogany forest in Nukurua, Tailevu it has formed a dense cover smothering the remaining native species that have survived the logging operation (Tuiwawa, 2004). Reforestation or rehabilitation of forests infested by Merremia vine are expensive and sometimes ineffective.

In a 2012 study conducted in 30 villages in eastern Viti Levu; 28 villages were assessed on whether *M. peltata* is found in their area. An estimated 42% of respondents reported that *M. peltata* reduces agricultural input while 34% reported that *M. peltata* competes with other traditional tree species (Daigneault & Brown, 2013).

Mikanai micrantha

In the Pacific Islands mikania is a fast-growing, aggressive perennial climbing vine in disturbed natural areas, as well as in agricultural systems. It impacts on forest succession and associated biodiversity and its rapid growth make mikania an aggressive competitor for nutrients, light and water in crop- ping systems.

Cultural methods of controlling mikania are time consuming, labour intensive and generally inefficient due to its ability to grow back quickly. Herbicide applications can control mikania but can also harm food crops and cause undesirable human and environmental consequences. Biological control looks promising through the rust fungus P. spegazzinii is autoecious (completing all stages of its lifecycle) on M. micrantha. It infects all aerial parts of mikania, causing leaf, petiolar and stem cankering, which often leads to the eventual death of the plant (Ellison and Murphy, 2001). Host specificity research will commence in Fiji against a required test list of 33 plant species considered important in Fiji. The screening procedure will include both choice and no-choice tests and will measure feeding, ovipostion and survival rates.

Ivory cane palm (*Pinanga coronata*)

In summary, the ivory cane palm has considerable potential to reduce native biodiversity, to change the structure and dynamics of forests, and to affect the overall ecosystem functioning. In addition, a general negative impact upon Fiji's forestry can be expected. Despite these obvious threats, nothing has been done to contain the species.

The ivory cane palm is native to Java and Sumatra (Kimura and Simbolon, 2002; Witono et al., 2002; Witono, 2003; Witono and Rondo, 2006; Keppel and Watling, 2011). In Indonesia, it is one of the dominant species in rainforests, extending from sea level to 1,800 meters a.s.l. (Witono et al., 2002; Witono, 2003). The natural tendency to form mono-dominant stands implies that *P. coronata* can outcompete and displace other understory species (Watling, 2005; Daehler and Baker, 2006). The palm was brought to Fiji for ornamental purposes in the 1970s and started spreading from gardens close to the Colo-i-Suva forest reserve on Fiji's main island of Viti Levu (Keppel and Watling, 2011). Its invasive potential was first recognised in the early 1990s (Watling and Chape, 1992). Today, it is rapidly spreading, forming dense stands in the mahogany plantations of Colo-i-Suva and neighbouring native forests, where it is displacing native species (Dyer 2017, Dyer et al., accepted; Dyer et al., in press).

Green (or 'American') iguana (*Iguana iguana*)

The green iguana is an invasive alien animal species with well-known economic and ecological impacts. In Fiji, the green iguana was illegally introduced and released on a single property on the island of Qamea in the year 2000 (CI-Pacific, 2013), and was positively identified and reported on the same island in 2008. It has since also been observed on the islands of Koro, Laucala and Taveuni (Thomas et al., 2011). The initial response to this potentially harmful invasive alien species was swift and driven by the local non-profit organization NatureFiji- MareqetiViti and the Fijian government. An initial risk assessment, which included scientific research and creating community awareness, was undertaken (CI-Pacific, 2013). The government introduced legislation that made moving green iguanas between islands illegal and punishable by high fines through the Biosecurity Authority Fiji (at the time named the Fiji Department of Biosecurity Services) in March 2010, and funded an eradication plan through the Fiji Ministry of Primary Industries (Thomas et al., 2011).

The introduction of outside species can be particularly detrimental for islands like Fiji, and are generally driven by human actions, whether intentional or unintentional.

- The Ministry of Forestry, who introduced some of these species to replenish natural stocks.
- The Department of Agriculture, who studies and categorizes species by their level of impact, and contributes to the management of introduced species.
- The Biosecurity Authority of Fiji is mandated to protect Fiji's agricultural sector from the introduction and spread of animal and plant pests and diseases, facilitate access to viable agro-export markets and ensure compliance of Fiji's agro-exports to overseas market requirements.

3.2 Main drivers of deforestation and forest degradation

The main identified drivers of deforestation and forest degradation in the Fiji ER-P area are:

- Planned and unplanned conversion of natural forests to agricultural land uses;
- Planned logging and conversion of natural forests to tree plantations;
- Unplanned conversion of forests due to encroachment;
- Impacts from infrastructure development especially planned HPPs and associated infrastructure;
- Forest degradation from unsustainable forest management Illegal and firewood; and
- Other causes of deforestation and forest degradation - natural disasters.

3.2.1 Ranking of the drivers of deforestation and forest degradation

Generally, deforestation and forest degradation result from distinct drivers brought about by different agents, though some drivers affect deforestation in the immediate term and degradation in the long-term. As can be seen from the following summary of the drivers of deforestation and degradation (Table 3.9) there are some differences across the three islands for example: 1) logging and plantations are important drivers on the two larger islands of Viti Levu and Vanua Levu, but not in Taveuni, mahogany is planted in natural forest so can be locally an important driver; 2) agricultural expansion is important in all three particularly Taveuni, taro and especially kava (both export crops) are important driver crops, sugarcane was an historical driver, fires associated with the sugarcane are degradation issue; 3) infrastructure of all types is relatively important on all three islands and especially the proposed and on-going HPPs on Viti Levu, mining is perceived as an important driver only on Vanua Levu as it has a small open cast bauxite mine; and 4) all islands perceive natural disasters and as a driver although landslides and widespread flooding from intense rain associated with a tropical cyclone can occur more often than a direct hit from a tropical cyclone, but the impact from a tropical cyclone can be severe.

Table 3.9 Summary ranking of the main drivers of deforestation and forest degradation

ER-P Island	Current Drivers of Deforestation and Degradation by Island			
	Deforestation	**Relative importance**	**Degradation**	**Relative importance**
1. Viti Levu Central and Western Divisions 10,388km^2				
	Logging	XX	Selective logging	XXX
	Settlement	XX	Settlement	XX
	Infrastructure, (esp. HPP and roads) 9 small HPPs on-going and proposed	XXX	Infrastructure, 9 small HPPs on-going and proposed	XXX
	Agriculture crops subsistence agriculture	X	Agriculture crops subsistence agriculture	XX
			Sugarcane (mainly historical)	XX
	Plantations - pine woodlots	X	Pine woodlots	X
			Mahogany plantations in the natural forest	XX
			Firewood	X
	Tourist investments (loss of mangroves)	XX	Tourist investments (loss of mangroves)	X
			Cyclones locally severe, intense rainfall may cause more damage than the wind	XX
			Fire from sugarcane burning	XX
2. Vanua Levu Northern Division 5,587km^2				
	Logging	XX	Selective logging	XXX
	Plantations/ wood lots conversion of natural forest	XX	Plantations/ wood lots conversion of natural forest	X
			Pine wood lots	X
	Subsistence agriculture	X	Subsistence agriculture	XX
	Taro	X	Taro	X
	Kava	XX	Kava	XX
			Firewood, copra dryers	XX
	Infrastructure	XX	Infrastructure	XX
	Mining (but can be locally severe)	X	Mining	X
			Cyclones locally severe, intense rainfall may cause more damage than the wind	XX

ER-P Island	Current Drivers of Deforestation and Degradation by Island			
	Deforestation	**Relative importance**	**Degradation**	**Relative importance**
			Fire from sugarcane burning	X
3. Taveuni (included in Cakuadrove province) Northern Division 434km^2				
	Subsistence agriculture	XXX	Subsistence agriculture	XXX
	Taro	XX	Taro	XX
	Kava	XXX	Kava	XXX
	Settlement	X	Settlement	X
	Infrastructure, (esp. roads)	X	Firewood	X
	Tourism related	XX	Tourism related	X
			Cyclones locally severe, intense rainfall may cause more damage than the wind	XX

Sources: ER-PIN, CI Consolidated Deforestation and Degradation Driver Report June 2018 and field consultations July, August 2018.

Although Fiji's Laws do not define forests, this study uses the Fiji REDD+ Policy definition of forests to guide the identification of deforestation and forest degradation:

"Land spanning more than 0.5 hectares with trees higher than five meters and a canopy cover of more than 10% or trees able to reach the 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 are expected to reach a canopy cover of 10 % and a tree height of 5 meters are includes as are temporarily stocked areas, resulting from human intervention or natural causes which are expected to regenerate. Includes areas with bamboo and palms, provided the height and canopy cover criteria are met, forest roads, fore 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 stands in agricultural production systems, for example in fruit plantations and agroforestry systems. The term also excludes trees in urban parks and gardens (DoF, 2011, p. vi).

The conceptual framework for this study incorporates both direct drivers and underlying causes in addition to the agents that contribute to deforestation and forest degradation in Fiji.

3.2.2 Drivers of deforestation

Drivers for deforestation cause conversion of forest to another land use or the long-term reduction of tree cover. Forest degradation considers long term reduction of potential supply of benefits from the forest and often results from poorly regulated or managed extractive activity carried out at a small-scale by many actors, which is further intensified by the general undervaluation of forest ecosystems and the non-tangible benefits they provide (Barquero-Morales, et al., 2014; Skutsch, Torres, Mwampamba, Ghilardi, & Herold, 2011).

Watershed deforestation contributes to elevated levels of suspended sediments and nutrient content in coastal waters (Klein et al., 2012). Riparian vegetation and mangroves along much of this coastline have been cleared to the high tide mark for agriculture and coastal development, leaving only narrow mangrove fringes with reduced ecological and coastal protection functions. This makes the remaining more intact mangrove forests of special conservation and fisheries interest (Watling, 1985).

Watershed deforestation impacts on marine environments, for example, the area around Nadi has several large rivers running through deforested land used for sugar cane farming which occurs all along the coast, and there are several large river estuaries. Due to watershed deforestation, many of the rivers carry a heavy sediment and nutrient load, and the offshore reefs and shoals are affected by muddy sediment deposition and algal overgrowths. Reefs in Nadi Bay have largely been buried under silt (Sykes, 2010b). By comparison Taveuni has comparatively large area of forest protected as Reserved Forest. Consequently many of the watersheds in Taveuni are still forested, and reefs minimally affected by land-based sediments.

3.2.3 Drivers of forest degradation

The main drivers of forest degradation are a combination of legal and illegal logging often coupled with agricultural cultivation and low-key small scale but continual encroachment into forest areas with a view to convert the forest to some form of agriculture. This type forest degradation is often difficult to spot and control particularly in PAs as it can take place some distance inside a forest or on the leeward side of a hill, and can be difficult to resolve as a household (and even communities) will often claim lack of boundary markers, a lack of an agreed boundary, increasing land pressures due to economic expansion of cash crops, and lack of forest ranger patrols.

Localised harvest of timber, NTFPs and firewood from natural forests for household uses, in addition to illegal harvesting, are an existing and future driver of forest degradation, which needs to be monitored closely. An important factor in illegal logging is the willingness of local communities to engage in the protection of natural forest (protection and production forest) and to engage in forest planting. Currently in many natural forests the forest and NTFP resources are looked upon as "free goods" while over collection of many NTFPs is not considered a major problem this may develop in future.

The solutions to these problems tend to be longer term and include greater understanding that forest resources are finite increased respect along the boundaries of PAs, developing collaborative forest management approaches to improve local forest understanding of sustainable forest use and local use rights to provide more local "ownership" of the forest and carefully orientated livelihood improvement activities.

Logging of plantations is not looked upon as a driver of deforestation or forest degradation as after the plantations are harvested they, are normally rapidly replanted by the companies (or households) to meet the market demands for domestic timber.

Illegal logging operations are known to occur in the ER-P region but are consistently difficult to identify and halt and may take various forms such logging licence is boundaries are overlooked or tree size limited may be ignored and quotas may be exceeded. The period of rotation may also be shortened.

3.2.4 Socio-economic drivers of forest degradation

Infrastructure Development

Infrastructural development in Fiji is regulated by a number of laws dependent on the type of infrastructure and its location. Where sustainable resource management or the environment is concerned, the EMA is the most relevant law applicable to the control and management of development activities. As EMA binds everyone including government any infrastructural developments including government or other private entities must be subject to the EIA process if the development activity falls within the scope of EMA. Other laws that play an important role in infrastructural development include: Town Planning Act (Cap 139), Water Authority of Fiji Promulgation 2007and Fiji Roads Authority Decree 2012.

Nine[42] small HPPs are planned on Viti Levu in the ER-P area most will be construed during the life of the ER-P and, while these are all relatively small schemes[43] two cascades are planned.

Mining

There is no national policy on mining in Fiji. Mining is largely a State administered matter in conjunction with the relevant regulatory bodies such as the Department of Environment. Landowners in this event would grant the necessary consent through TLTB for surface access rights and are compensated for the loss of forest and garden that exist on the actual mining lease area. If the land is a designated land under the Land Bank, then the Land Bank Unit through the Department of Lands spearheads the negotiation on surface access rights and benefit sharing. The landowning unit is not involved if land is leased through the Land Bank leasing arrangement. In the Mining Act, certain lands are not allowed for prospecting, mining or entry, for example: any Fijian village; any land within 60m of any spring in use as a source of water supply (exceptions apply); or any reserved forest, declared as such under the provisions of the Forest Act (exceptions apply).

3.2.5 Agriculture

The study on Deforestation and Forest Degradation Report[44] included both commercial agriculture, in which the objective is selling the majority of products, and subsistence agriculture, in which producers focus on growing enough food to feed their entire families with the surplus sold in the local market to complement household income.[45] Sugar cane production is the most important commercial agricultural product, while the most popular small-scale semi-commercial or subsistence crops include kava, taro, cassava, and rice.

The Fiji National REDD+ Program as established in 2009 identifies agricultural clearance as one of the three main drivers of deforestation in Fiji (GoF, 2017b), as confirmed by the participants of the community, divisional, and national consultation workshops. While there has been a significant change in agriculture over the last 20 years with a decrease in area under production, deforestation continues to be driven by conversion to agriculture as previously cropped areas, now depleted areas are abandoned, and new areas are cleared. It must be noted however that much of the available agriculture land were cultivated by the mid-1970s so development for new expansion of agricultural land will fall on rolling to steep terrain, often with some form of forest cover (Leslie & Ratukalou, 2002a). Unsustainable practices are becoming increasingly common, including: intensive farming methods (e.g., hillside farming methods), land reclamation within wetlands (e.g., mangrove conversion for rice farming), and commercial husbandry with poor pasture management (e.g., slash and burn methods to clear areas for new pasture) (Ganpat & Isaac, 2016).

Twyford and Wright (1965) classified Fiji's land utilization capacity based on its suitability for cultivation and the effort needed to modify it for agricultural use. The results indicate that an estimated 5,298 sq.km of Fiji's land mass is suitable for agricultural production. An additional 5,846 sq.km needs modification for drainage

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[42] 5-Year and 20 Year National Development Plan Transforming Fiji, Ministry of Economy 2017 the NDP foresees 2 HPPs per year from 2016-2021; Also supported by various supporting reports including Fiji clean energy investment forum FEA's Strategies & Plans and Opportunities in Fiji's Renewable Energy Sector 2015; Fiji Electricity Authority 2017 Annual Report; Word Small Hydropower Development Report 2016 UNDIO; Fiji's Hydro Potential Report Volume 1 2009 Fiji Department of Energy; Namosi Villagers Against Hydro Dam Project Fiji Sun March 2919; Namosi Hydro talks: Land portions will be permanently inundated EIS Fiji Times March 2019; The Project for the Effective and Efficient Use of Renewable Energy Resources in Power Supply in Republic of Fiji Final Report, Ministry of Infrastructure and Transport Fiji Electricity Authority (FEA). 2015 Japan International Cooperation Agency Tokyo Electric Power Services Company, Ltd.

[43] Depending on the country small HPP can be defined as between less than or up to 30-50MW.

[44] Analysis of Drivers of Deforestation and Forest Degradation and Identification of Response Strategies, Conservation International 2018.

[45] In Fiji, producers earning less than FJD8,000/year are categorized as subsistence, producers earning between FJD8,000 and FJD15,000/year are categorized as semi-commercial, and producers earning over FJ$15,000/year are categorized as commercial (MoA, 2016).

and soil conservation before they can be used for agriculture. Such lands are well suited for forest and (marginally) for grazing. The rest of the land is deemed unsuitable for both agriculture and forestry (although limited forestry use may be considered) with strong recommendation for protection for water catchment and biodiversity (UNCCD National Focal Point, 2007; Twyford & Wright, 1965; ADB, 2014a; Akram-Lodhi, 2016; MoA, 2016).

Between 1991 and 2009, the number of farms in Fiji reduced by one-third from 95,400 to 65,033, and the average size of each farm has decreased from 6.2 ha to 3.9 ha or o.039 sq.km to 0.062 sq. km (Department of Agriculture, 2009). This represents an overall reduction in total farm area of nearly 60%, to the current total of 251,858 ha or 2158 sq.km (Department of Agriculture, 2009), which is equivalent to 14% of Fiji's landmass. Given that 29% of Fiji's land was suitable for agriculture production in 1965, an estimated 15% of prime agriculture land is now either dormant/abandoned or converted to other land uses such as infrastructure development, housing, industrial expansion, and others.

Although decreasing area of production, agriculture is still an important economic activity and remains the largest employer in Fiji. Estimates from 2015, value agriculture at 8.3% of GDP, which includes subsistence (2.8%); crops[46], livestock, and horticulture (4.2%); and sugarcane (1.3%) (FBoS, 2016b). Agricultural commodities have stabilized between 2014-2015 with strong increase in livestock beef and pig farms while cassava, taro and assorted vegetables have driven crop production Inability to compete effectively in deregulated global markets coupled with political instability have had adverse effect on the sugar industry.

The demand for agricultural products is rapidly increasing, as a result of rural-urban drift along with change in diet and food preferences, the growth of the hospitality and tourism sector, and government pressure for more exports and import substitutions. In addition, non-renewal of agriculture leases has caused an influx in migration farmers, particularly those producing sugarcane, to move out of agricultural activities and into an urban lifestyle. As a result, about 51% of Fiji's population live in urban areas, and this is expected to increase to 60% by 2030 (UNICEF, 2011). Natural, climate-related events have added to the pressure. For example, Tropical Cycolen Winston, (Category 5 cyclone) hit Fiji in 2016 which impacted 62% of the population. This resulted in an estimated total damage and loss across all sectors at FJ$2.85 billion (Esler, 2016), nearly one-third (29%) of which was sustained in the production sectors. The prices of certain crops like kava have significantly increased due to the cyclone and because of the high demand on both the domestic and export markets (Naleba, 2017).

a) Commercial Agriculture

Sugar is the only agricultural commodity that qualifies as a commercial crop, given the characteristics of: (1) being a leading commodity that drives production and (2) providing a consistent contribution to annual GDP. The government is a major shareholder of the Fiji Sugar Corporation (FSC) and recognizes the importance of the sugar industry with more than 20,000 independent farmers (cultivating an average 3 ha per farm) (Department of Agriculture, 2009).

Sugar was once the stronghold of the agriculture sector, reaching a maximum annual production of 3.2 million metric tons in 2006 (FSC, 2007); however, production has been declining since 2007 (FSC, 2015). Several factors contributed to this decline, including: the poor performance of the sugar industry, the slow adjustment to trade liberalization, the impact of natural disasters, incidences of pest and disease outbreaks, export trade restrictions, political instability and inconsistent public-sector support.

The government began to reform and invest in the industry in 2006, to support mill upgrades for improved efficiency. The effort appeared to be successful for a short period, as efficiency of processing cane into sugar increased – but it then declined. Despite the improvement in sugar productivity, the stagnant growth of the sugar industry over the last decade reflects the failure of productive activities that spin off from a vibrant and growing export market. The lack of stimulus from the sugar sector and non-renewal of land lease has given rise to rapid rural-urban migration.

[46] Including taro.

b) Subsistence Agriculture

Almost half of Fiji's population lives in rural areas and derives a portion of its livelihood from agriculture (ADB, 2012). The majority of farms produce a mix of crops and livestock (73%), with the remainder cultivating either crops (20%) or livestock (7%) (Department of Agriculture, 2009). Agricultural land uses are categorized as: temporary crops,[47] permanent crops[48] (including kava), coconut, pasture (including animal husbandry), planted forest, natural forest on farm, non-agriculture land, and fallow.

There are over 30 species listed under temporary crops, the most popular of which are cassava, taro, and assorted vegetables which are most commonly cultivated by farmers with at least three hectares of land. The most popular permanent crops are banana, coconut, and kava (Department of Agriculture, 2009).

In terms of deforestation and degradation, the production data from the Ministry of Agriculture (2017) indicates that the high levels of semi-commercial cultivation of kava, taro, and cassava cultivation are leading to encroachment into the native forests, as confirmed by the deforestation and forest degradation community consultation sites in Naitasiri and Ra provinces. Small patches of forest are cleared and planted with kava (as it requires shade in its first three years of growth), after which the kava is thinned and a greater patch of forest cleared to expose it to direct sunlight. Kava is followed by taro and cassava. By the time these crops are harvested, the soil is depleted of its fertility, causing farmers to continue to seek new farm lands in the native forests.

The informants from Rewasau and Nabukelevu stressed that newly cleared forest is the best location for new kava crop. While kava has a production cycle of three to five years depending on the variety, high market demand is driving local farmers to plant the varieties with a shorter life cycle.

Many farmers in the study site prefer to plant taro and cassava for subsistence and sale of excess produce (CI, 2017). Vegetable farming in the study sites is limited to subsistence, other than the village of Navai in Naboubuco, Naitasiri (CI, 2017). Other subsistence agriculture includes rice farms although the area is very small (less than one ha); florist where ornamental plants are raised in a backyard nursery; and livestock. Livestock farms are often under one-half hectare in size with two to four animals. The cattle (raised for beef) are let loose in the forest with no restrain simply due to high cost of capital input needed for fencing material and maintenance of feedstock. Pigs and goats are also common amongst local farmers, often with a carrying capacity of four to six animals per farm.

Although ginger is a non-traditional commodity, it has proven to be a successful diversification crop in other areas which has generated interest among rural farmers. The caveat in such interests lies in the agronomical needs of the ginger plant which needs a lot of sunlight and good drainage hence is associated with forest clearing similar to kava. However, the production cycle of ginger is much shorter with greater impact on deforestation, forest and land degradation.

It has been observed that households where the head of the household works in agriculture are detected to be poorer than those whose heads worked in the services sector (ADB, 2012). Additional findings from the community consultations revealed that some households depend on remittances from relatives in urban areas. Coupled with easy availability of processed foods from village canteens, subsistence agriculture in some communities has declined.

c) Fire

Fire is widely used in Fiji and includes 1) sugarcane farmers who burn their fields to facilitate hand harvesting;[49] 2) village farmers burn forest, fallow fields, and secondary vegetation to plant crops, fallow 3) fires on mission grass covered hills serve to provide 'new grass' for village cattle, horses, and goats (King

[47] Temporary crops include all crops that have a planting cycle of one year or less.

[48] Permanent crops include all vegetables and woody plants or shrubs that take more than nine months to become productive, have a planting cycle of five years or more, and do not need to be replanted once it goes into production.

[49] Sugarcane fields are burned prior to harvest to remove the sharp leaves and other material on the stalk that slow down – and, in some cases, can injure – workers who manually harvest the cane.

2004), 3) hunters who use fire to flush out game and/or crop-thieving pigs (Kull, 2012) and 4) fire in Fiji, is to clear vegetation on lower hill slopes for the collection of wild yams (Dioscorea spp.) according to King (2004),

Impact of fires

Anthropogenic fires are seen as an important primary driver leading to the loss of Fiji's tropical dry forests (Keppel & Tuiwawa, 2007). The fires that cover the most ground are those set in the grasslands of the drier, lee-side of the islands[50]. Major land degradation occurs over a period of time, mainly through clearing, deforestation, and in dry zones frequent burning and the creation of a self-perpetuating cycle of fire-dependent highly flammable grasses.

Fires occurred in the western lowlands of Viti Levu and Vanua Levu islands, even where fewer sugar cane plantations are located. These regions are also predominantly occupied by pine plantation, and although fire clearance is strictly prohibited for FSC certification, unplanned fire is remains a considerable threat (Herold & Payton, 2009) to young pine plantations. Given the heavy ground fuel accumulated over time, many of these fires are very intense, exacerbating the effect on forest degradation and deforestation.

Sugarcane fields

Fire takes place during the harvest season of sugarcane, lasting from July to November (dry season) with the peak of the burning season being in September. Fire occurrence is also related to annual rainfall, showing an increase in fire when the annual rainfall was lower than the average (2003, 2010, 2014). The opposite is also true, wetter years (2007, 2009, and 2012) show a low number of fires. Sugarcane burning is discouraged and was penalized under certain conditions, but it is still practiced by farmers to accelerate the task of harvesting, clearing weeds and undergrowth, and destroying insects; to minimize labour costs or mitigate labour shortages; or to advance milling priority (Davies, 1998). This burning alone is responsible for 44% of greenhouse gas emissions from sugarcane production (de Figueiredo, Panosso, Romao, & La Scala, 2010). Sugarcane fires spread to grasslands, forest, and pine plantations, thus contributing to the forest degradation and deforestation. The practice of burning cane prior to its harvesting. This practice increased rapidly. The burning of sugar cane may be deliberate or it may be accidental. In Fiji it is estimated by the industry that over 95% of all burning is deliberate, the residual 5% being attributable to lightning, carelessness or neighbourly sabotage (which is, of course, also deliberate). Some of the deliberate burning is initiated by the growers, some by the harvesting gangs. The effects of burning are widespread, affecting processing, harvesting, growing, and the environment, five principal categories of consequence: soil and environmental damage; diminished quantity and quality of sugar recovery; slower, more costly and less efficient processing; diminished energy potential of bagasse fibre; and easier harvesting [51].

In a rapid spatial assessment between the locations of the sugarcane plantations and fire occurrence between 2002 and 2016, it was observed that there is a high correlation between sugarcane plantations and fire occurrence. This correlation is most evident in the northern lowlands of Viti Levu and Vanua Levu islands.

A coordinated effort on wildfire control, at community level and including a fire surveillance system; improving the institutional environment for agroforestry planting is required.

Current legislations have adequate powers to reduce impact of uncontrolled fires but staff needs to be properly trained and funded. For example, the 1992 Forest Decree the conservator can declare, enforce fire hazard around plantation areas. This should be complemented with community based education awareness programs. Existing legislations that can be utilised for fire management includes:

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[50] Kull, Christian A. (2012) Fire and people in tropical island grassland landscapes: Fiji and Madagascar. Journal of Pacific Studies 32: 121-129.

[51] The causes and consequences of cane burning in Fiji's sugar belt; Davis J (1998); Journal of Pacific Studies 22: 1998 1-25.

1. Fire Hazard Plan (National Disaster Management Act1997);
2. Fire Rangers (Forest Bill 2016);
3. National Fire Services Act (1994); and
4. Village By-laws (iTaukei Affairs Act (Cap 120)).

At community or village level village by-laws can be used to assist in fire prevention and control. The government with the assistance of the Secretariat Pacific Community is currently working to development a Forest and Rural Fire Management Strategy for Fiji.

3.2.6 Forests

It is estimated that 140,000 hectares of Fiji's native forests have been converted to non-forest land-use since 1967. The four main causes of this conversion include forest clearance for commercial agriculture and rural development projects; commercial and subsistence farming; growth of small settlements and urban areas; and infrastructure development such as roads to service settlements.

Recent trends indicate an increase in overall forest cover in Fiji from 52% of land mass in 1990 to 56% of land area in 2010 (Food and Agriculture Organization of the United Nations (FAO) 2010) (see Table 4), reflecting the increase in plantation forestry (primarily pine and mahogany), which now composes 11% of the forest area of Fiji (Government of Fiji 2010). The increase in plantation forests was associated with a 9% decline in primary forest cover from 490,000 hectares in 1990 to 449,000 hectares in 2010.

The major causes of loss of coastal and littoral forests include:

- Overexploitation and felling of useful trees for construction, woodcarving, fuel, medicines and other uses;
- Rapid urbanisation and expansion of settlement;
- Conversion of coastal areas to agriculture (sugarcane), aquaculture and tourism;
- Invasive alien species, including goats, pigs, rats, ants and weeds, such as Wedelia (*Sphagneticola trilobata*). Listed as one of the '100 of the World's Worst Invasive Alien Species, Wedelia has spread to beaches on most islands and is found along riverbanks to elevations of 700 meters. It has invaded Sigatoka Sand Dunes National Park and other conservation areas; and
- Failure to replant trees after cyclones and other extreme event or natural causes.

a) Logging

Commercial logging includes every activity where wood or timber products from forest resources are exchanged for economic gains, which includes plantation logging, conventional logging of native forest, and wood consumption for biomass plants and cremation.

The logging activities for subsistence uses are described in detail in the Traditional forest uses Section 3.2.7, which includes firewood and housing materials, among others.

Fiji's forestry resources have long suffered unsustainable extraction through commercial logging and subsistence use of both timber and non-timber forest products. Underlying factors such as local and international demand as well as local infrastructure development have seen an insatiable demand for forest products required in building projects. Moreover, only 4.3% of Fiji's forests are legally protected.

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, Wyndham Vacation Resort, and the recommencement of the Momi Bay Development (ADB, 2014a).

Rapid turn-around of logging activities in native forest after commercial logging exacerbates forest degradation in the absence of restocking or restoration, and leads to extremely degraded areas of forest. Annual licenses for timber extraction in logged native forests are issued within five to ten years of coupe closure from the last logging activity. Other licenses include Forest Right Licenses to harvest mangroves for cremation and firewood licenses to collect waste logs for sale to businesses with industrial boilers.

Overall there has been decline in the harvesting of logs from native forest from around 130,000 m^3 in 2003 to 46,000 in 2014, as most or all of the forest areas accessible by heavy machinery have already been logged, and extraction is moving into areas with higher costs (Whiteman, 2005; FBoS, 2014; FBoS, 2008a). Under Sustainable Forest Management scenario, assuming an average log production at 62,500m^3/year, the carbon emission is estimated at 252,000 tCO_2 however conventional logging is reported to emit 13% more carbon than Sustainable Forest Management (Haas, 2015).

Although conventional logging shows comparatively high growth rates in the remaining forest stand compared to lower intensity logging, this incremental growth was concentrated in the smaller trees, indicating a heavily degraded forest and decreasing proportion of commercial trees. Much of the remaining forest stands have only 40% of their initial biomass density due to severe degradation and high mortality from damage during felling and extraction (Kaitani & de Vletter, 2007). The communities that participated in the consultation process also highlighted that the damage caused by the heavy logging machinery (especially when misused) usually cause further degradation in the form of landslides, erosion, and sedimentation. In the absence of a national land use plan, the open and heavily degraded forests are vulnerable to conversion to other land uses such as plantation forest and agriculture.

Of the 914,868 ha of native forest on the main islands, 58% is Closed Native Forest (with over 40% canopy cover) and the other 42% is Open Native Forest (with 10-40% canopy cover); however, of these 388,415 ha of Open Native Forest, almost 96% of is classified as open multiple use forest while the remaining 4% is classified as open protected forest. Assuming that native species make up 91% of Fiji's forest cover, the mean carbon stock for Fiji's indigenous forest is estimated at 175 tCO_2e/ha or 157,325,000 tCO_2e (Payton and Weaver 2011).

The silvicultural prescriptions for native forests introduced in the Fiji Forest Harvesting Code of Practice (FFHCOP) (MoFF, 2010; MoFF, 2013) set an allowable cut diameter for various species via the Diameter Limit Table (DLT) so that only the biggest trees of target species are extracted while the smaller trees are retained to maintain the forest's natural composition and structure (Mussong, 1992). However, although the application of the Diameter Limit Table is specified in the FFHCOP, the logging industry has resisted its adoption and practice, citing insufficient profits (A. Tuisawau, personal communication, October 5, 2017).

In February of 2015, tropical cyclone Winston devastated the Lau Group, Vanua Levu, Lomaiviti and the upper northern part of Viti Levu. To ensure speedy recovery, rural communities received logging equipment as part of the relief supplies, including chainsaws and portable saws, which enabled some communities to extract more timber.

High local and international demand for timber and high pressure for local development may collectively further pressure the process behind the formal steps of granting licenses, EIAs, and strict observance of the FFHCOP in opening of new areas, which could potentially lead to increased deforestation and degradation.

b) Plantation Forests

By 1930, logging activities in native forest were prevalent, yet Fiji was importing large amounts of timber to meet local demand. The Fiji Forest Policy 1950 was based on a vision to make Fiji self-sufficient in timber products, thus trial plots for timber species were established in various locations around Fiji with native and exotic species of noted commercial value. These experimental trails only considered characteristics such as rate of growth, and native species were shown to be extremely slow growing in comparison to introduced species under plantation timber production. Potential environmental impacts – which are now known to be vitally important – were not critical criteria, if even considered.

The exotic species of *Swietenia macrophylla* (the Honduran or big-leaf mahogany) proved to be excellent in the wet regions of Fiji, while *Pinus caribaea* var. *hondurensis* (Caribbean pine) was identified to be best surviving species in the drier regions, and therefore, establishment of these two species commenced in earnest during the 1970s.

i) Mahogany

The Fiji Hardwood Corporation Ltd (FHCL) – predominantly owned by the government and customary landowners – manages roughly 60,000 ha of mahogany plantations that have been established in logged-over native forest areas on the main islands of Viti Levu and Vanua Levu (DoF, 2015).

The anticipated steady growth of the sector was disrupted in 2009-2010 after heavy regulations were put in place that created a market monopoly for Sustainable Mahogany Industry, who secured exclusive extraction license from the government for the most productive and dense mahogany stands (Class I & II) and shut out all operators in the market. License to the slightly less Class III was issued exclusively Pacific West Timber, a sister company of Sustainable Mahogany Industry.

No replanting has been recorded since mahogany harvests began, and both companies have recently closed operation while 13 licenses have been issued to local saw millers and resource owners (Boyle, 2017).

Various communities living near mahogany forests have reported the loss of biodiversity in their forests and its waterways (Sue, 2003). An EIA found increased siltation and turbidity from logging; stagnant water due to obstruction from fallen logs; build-up of debris from logging causing water discoloration and possible reduction in dissolved oxygen; and possible death of aquatic life with low level of dissolved oxygen (Thaman B. 2004).

ii) Pine

Fiji Pine Ltd – predominantly owned by the government and customary landowners – manages Fiji's 76,171 ha of pine (DoF, 2015), which are established on the drier sloping *talasiga* grasslands (historically too poor in nutrients to support much else) as well as where native forests were converted for pine plantation establishment. Pine production increased in 2013 as plantation stock in Vanua Levu commenced harvesting in that year.

Resin production presents a potential opportunity to afforest degraded *talasiga* grassland landscapes (provided the young trees survive the frequent fires that also tend to be a feature of the talasiga) with *Pinus caribaea* var. *hondurensis*, which is reported to have high resin content. Resin production is beneficial for carbon enhancement as resin tapping may begin at eight years and continue until 25 years, when the pine trees will be mature for sawn timber. Callison Pacific Pine Chemicals, a US-based company has been working in partnership with Fiji Pine Limited and Fiji Pine Trust since 2013 to extract pine resin, used as a base for making turpentines and rosin resins (Sovaraki, 2015). In 2013, the company employed over 600 people and exported over 800 metric tons of pine resin – worth FJ$500,000 (Moceiwai, 2014).

iii) Other Exotic Tree Plantations

Gliciridia (*Gliricidia sepium*) is a fast-growing, nitrogen-fixing tree, that is native to Central America but cultivated throughout the tropics for its many environmental services (e.g. shade for cacao and coffee) and products (e.g. green manure and fuelwood) (Elevitch and Francis, 2006). In Fiji, this species is used by the Nabou biomass power plant in Sigatoka as the main fuel source. The plant uses roughly 100,000 t/year, which is the equivalent of and generates 12MW of energy, and the biomass comes from plantations cultivated in degraded areas. The rotation cycle is about 15 years over a total area of 5,000 ha and will be sustainable long-term (Eltech Ltd, 2017). In terms of climate change mitigation, the plant is expected to have a positive impact, as it will eliminate 36,000 tCO_2 compared to diesel generation. The plant will also use African Tulip (more information below) and saw mill residues. *Acacia Mangium* and other fast growing *Acacia* spp. are under consideration for biomass plantations.

c) Mangroves

Mangroves are one of the vitally important coastal ecosystems of the region there are eight species in Fiji and one is a hybrid. Their complex root structures allow them to survive the roughest of weather and to protect coastal communities from coastal erosion. They also provide nursery and feeding grounds for fish and other marine animals that Pacific islanders rely on for food security and income. This indicator assesses key pressures and threats to mangrove ecosystems in Fiji. Of additional importance is the function of mangroves as a carbon sink. The more than 8,600 hectares of mangrove forest in the Rewa delta represent approximately 15 million tonnes of carbon dioxide equivalent, (tCO2e), and that clearance of only 500 hectares would be the equivalent of Fiji's entire annual carbon emissions from fossil fuels (Heider, 2013).

Fiji has the third largest mangrove area (380 square kilometres) in the Pacific Islands, after PNG[52] and Solomon Islands. The largest of these stands (covering over 90% of Fiji's mangrove area) are found along the south-east and north-west coasts of Viti Levu, with extensive cover around the deltas of the Ba, Rewa and Nadi rivers and on the northern shores and the Labasa river delta on Vanua Levu (Spalding et al. 2010b, Watling 2013).

Future effects of climate change on Pacific island mangroves could include mangrove mortality during unusually dry periods, and devastating impacts from the higher rates of sea level rise that are projected. There is agreement and consensus that potential impacts of projected sea level rise will be high on mangroves of the Pacific islands, and priority adaptation actions include promotion of mangrove substrate accretion and mangrove monitoring[53]. Mangroves in Fiji are under pressure from coastal development, clearance and reclamation for urbanisation, tourism and conversion to aquaculture and agriculture. There was a 4% reduction in mangrove cover in Fiji over the ten-year period 1991–2001, with some localities recording a loss of cover of 60–70% due to unmanaged conversion of mangroves. The eastern coast supports extensive mangrove forests, particularly the delta of the Rewa River, recognised as the most productive mangrove community in Fiji, on which many subsistence and small scale commercial fishers rely, and which has been strongly recommended for protection against felling, clearance and pollution (Watling, 1985).

Traditional exploitation of mangrove resources (timber extraction and overharvesting of fishes and invertebrates) and pollution also threaten mangrove ecosystems. These threats can cause a reduction of area available for mangroves, increased risk of coastal erosion, a decline in mangrove species and changes to fish and invertebrate spawning grounds. Non-human influences such as direct effects of climate change and sea level rise pose minimal threat.

Mangroves were heavily exploited as a major source of fuelwood in the past, though are now more threatened by urban development than by collection for firewood. During the period 2008-2012, a total of 16 licensees produced between 256-956 m^3/year (Watling, 2013), while in 2013 harvesting of mangroves for fuel accounted for only 39 m^3 (DoF, 2015). A few mangrove wood concessions are currently licensed, and all are in the southern division, though illegal harvesting has been estimated to be around 50% of recorded production (Watling, 2013).

Wood from mangrove is also used for cremation, as it takes longer to burn and provides a good source of heat due to its density. However, the impact in terms of CO_2 emissions is negligible compared with conventional logging. For example, during the consultation process, in an interview with local stakeholders it was observed that a cremation facility nearby Vatuwaqa cemetery uses 60 to 84 tons of firewood per year, representing less than 100 tCO_2/y.[54]

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[52] Vulnerability of Fiji's mangroves and associated coral reefs to climate change: A review; Lead Author Ellison J. 2010 WWF South Pacific Program.

[53] Impacts of Climate Change on Mangroves Relevant to the Pacific Islands. Ellison, J.C. (2018) Pacific Marine Climate Change Report Card: Science Review 2018, pp 99-111.

[54] Considering a wood density of 0.703 grams per cm^3 (Zanne, et al., 2009; Kauffman & Donato, 2012; Bosire, Bandeira, and Rafael, 2012), and a carbon fraction of biomass of 45%, that would represent 97 tCO_2/y.

Actors and Agents

- Logging companies, who are responsible for the active felling of trees. This includes Fiji Pine Ltd. & Fiji Pine Trust both of which are predominantly owned by the government and traditional landowners. Also includes the Mahogany Industry Council, FHCL, Fiji Mahogany Trust; landowners and loggers who are involved in mahogany logging, post-harvest, processing, branding and marketing.
- MoF, whose role is to regulate, develop, and enforce restrictions within the logging industry.
- The Department of Environment, is required to conduct an EIA for any commercial logging activity.
- 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 State Land as well as the establishment of Protected Area or Conservation Leases[55] on all types of land tenure on behalf of the MoF.
- Landowners, who either fell trees themselves or consent to activity on their property by commercial logging operations.
- Local population, whose growth requires building materials and cleared land for expansion.
- TLTB, whose consent is required for licenses to harvest timber on iTaukei land.
- Buyers of wood and timber, who place increased demand on timber production for international markets.
- Tourists, who have placed increased demand on the Fiji Sago Palm production for thatch shingles.

3.2.7 Traditional forest uses

Fiji recognizes customary land ownership as enshrined in the Constitution. The rights flowing from customary land ownership, including traditional forest use, are regulated in the legislation. Traditional forest use rights for subsistence and customary purposes include harvesting of wood for firewood and other traditional uses, the collection of forest produce for food and medicinal purpose.

Although the annual population growth in Fiji is low at 0.7% per year compared to the global average of 1.2% per year (World Bank, 2017). The urban-rural distribution is close to parity between the ages 45-49 while rural dwellers dominate the population aged 60 and over.

The protection of traditional forest use is strengthened by its exclusivity, given no person other than the traditional landowners may exercise these rights where the land is un-alienated. Men and women have equal access to non-timber resources as sources of income and or food security.

The community consultation conducted in Tomaniivi and Serua revealed that communities[56] still collect medicinal plants, wild crops, edible ferns, fruit, nuts, pandanus leaves (for weaving mats), sago palm leaves (for roof thatching), and wild pigs in the forest. Any non-timber forest products that are collected in excess are sold on the roadside or at local market. However, there is a lack of quantifiable information on the impact of such extraction to substantiate the impact of traditional practices.

Various species are selectively logged for traditional use, and thus their unsustainable harvesting changes the natural forest species composition. The traditional demand for selected species has been exacerbated with the increasing iTaukei population. Traditional use of forest trees such as Dakua makadre (*Agathis*

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[55]Conservation Lease Areas - These are a lease agreement made by the iTaukei Land Trust Board on behalf of landowners. Under the National Trust Act 1970, the National Trust can enter into binding conservation covenants with landowners and purchase land for conservation purposes. Conservation covenants are a flexible, though under-utilised, mechanism for long-term protection of natural and cultural sites (Clarke and Gillespie 2008).

[56] Situational Analysis Report Delivery 3, IAS, April 2017,

macrophylla, Pacific Kauri) include timber for the construction of village houses and community structures; tree trunks for canoes and gongs; dead branches for firewood; resins for glue and glazing pots; resin smoke as a dye for hair and tattoos; and – for several *mataqali*, villages and districts – also the totem tree.

Vesi (*Intsia bijuga*) is also highly valued for its durability, attractive dark red-brown colouring, and traditional use for central poles in chiefs' houses, gongs, and canoes. Its easy-to-work properties also make it suitable for woodcarving of valuable artefacts. The commercial production of kava bowls, weapons, and other artefacts to supply the growing tourist market has put additional pressure on the vesi population, particularly in the absence of replanting (Thaman, Thomson, DeMeo, Areki, & Elevitch, 2006).

i) Firewood

Firewood collected from the forest has been a free and readily available domestic energy source. Firewood collection is considered a driver for forest degradation.

However, according to the senior men's group consulted through this study in the Naboubuco District in Naitasiri (representing the villages of Rewasau, Naqelewai, Nasiriti, Nasoqo and Roma), the highly flammable species are scarce today due to frequent harvests, indicating a gradual depletion of such tree species (e.g. *yasiyasi, marasa, dawa, koka, vure, doi, davo*) (see Annexes). Currently, *molau, onolulu* and *gadoa* are the most commonly used firewood species, as they grow along the roadsides and in degraded areas. Mahogany debris after logging also makes excellent firewood.

During the consultation process, community members were asked to name 10 top firewood species, and rank flammability from one to ten with 10 being the most flammable. They were also asked to note the current level of use, the duration of firewood collection; the estimated distance walked and the frequency of harvest. The group were asked to consider what the future prospect for use are based on current level of access and identify those that have the highest, medium and lowest impact on forest degradation.

The group from Navai Village at the Tomaniivi workshop agreed to use the frequency of harvest as a critical indicator to forest degradation and to apply colour code where red is "danger"; amber – medium and green depicting low impact. Results from all community discussion is summarized in **Table 3.10**. The quantity of the firewood collected is a challenge to quantify as it ranges from what people are able to carry on their back to a hand-load or a few sticks carried over long distance.

A large portion of the most popular firewood in rural communities are native forest species. On average 21 kg of firewood is extracted every 13 days; equivalent to 590 kg per year. However, it was difficult to determine the area of forest impacted by firewood harvest hence carbon emission from firewood harvest is difficult to quantify without further studies. The species harvested range from mangrove, mahogany, drou, vaivai, sorua and others.

The communities are aware of the potential restriction to mangrove harvesting and perceive that future use may decline. On the other hand, they are aware that mahogany plantations are currently coming into maturity and scheduled for harvest. Some communities are currently sourcing firewood from mahogany plantations where the duration for harvesting generally takes a day to collect 30kg of wood for fires every 3 days. Given its easy availability as waste wood after logging operations, communities perceive future use to continue to increase. A summary of the more important firewood species is listed in **Table 3.10**.

Table 3.10 Trend and estimated quantity of firewood collection in Naitasiri and Serua

Species local name	Scientific Name	Level of Current Use	Duration of Harvest (Time spent in hours)		Frequency of Harvest (days)	Weight (kg) per harvest
			1990	2017		
Dogo	*Bruguiera gymnorrhiza*	High	1	4	10	20
Drou	*Trema cannabina*	High	4	4	60	60
Gadoa	*Macaranga spp.*	High	8	8	5	50

Mahogany	*Swietenia macrophylla*	High	8	8	3	30
Onolulu	*Piper aduncum*	High	8	8	2	15
Sorua	*Alstonia spp.*	High	4	4	60	50
Vaivai	*Samanea saman*	High	0.75	1	14	20
Vure	*Geiosis spp.*	High	8	4	3	40
Yaqoyaqona	*Piper spp.*	High	0.75	1	10	15
Davo	*Macaranga spp.*	Medium	4	4	1	15
Dawa	*Pometia pinnata*	Medium	4	4	3	8
Doi	*Alphitonia spp.*	Medium	4	4	10	15
Gunugunu	*Gymnostoma vitiense*	Medium	1	4	14	20
Ivi	*Inocarpus fagifer*	Medium	0.5	4	30	15

Table notes Modified from Analysis of Drivers of Deforestation and Forest Degradation and Identification of Response Strategies Conservation International 2018.

It may be noted that the recognition and exercise of traditional forest rights may have a positive influence on forest conservation and sustainable management provided it is exercised according to traditional natural resources management principles and practices. However, it may also constitute a risk to drive forest degradation when these privilege and rights are exercised unsustainably to meet the growing need for forest products associated with population growth, heavily reliance on natural resources for subsistence lifestyles and erosion of customary governance as well as the loss of traditional knowledge giving scope for the misuse of these rights

Actors and Agents

The primary activities are associated with Fiji's local communities who may use forest resources for traditional purposes. Key actors and agents are listed:

- iTaukei communities, who have inherent communal rights to use forest resources in traditional activities, such as the harvesting of firewood, collection of produce, and medicinal purposes;
- Lease holders who have rights to use forest resources in traditional activities, such as the harvesting of firewood, collection of produce, and medicinal purposes;
- TLTB, whose role is to manage and regulate the areas held under customary tenure arrangement in Fiji; and

Tourists, who have placed increased demand on the production of traditionally made kava related goods.

3.2.8 Impact of infrastructure development on forests

Several types of forest conversion to infrastructure were identified during the consultation process and literature review, which are grouped in this section. More specifically the infrastructure development includes: roads and transportation; hydro dams and electricity; urban development and resettlement; tourism development; and water systems.

In the context of this report, infrastructure expansion refers to basic support systems that are vital to a country's economic development and prosperity. Urban infrastructure includes the provision of clean water, sanitation and solid waste, electricity, road, education and health. Rural infrastructure comprises rural roads, rural housing, rural electrification, education and health. Rural road connectivity is an important aspect of rural development.

Funding for infrastructure development in Fiji has increased substantially in the last few years to meet the government's target on fast tracking infrastructure development for economic development and the improvement of quality of life (FRA, 2013). In 2013, capital expenditure in the budget increased 30 % from the previous year to reach FJD723 million (US$410 million) thus level of capital expenditure is now over 3 times what it was four years ago in 2009 (Department of Energy, 2014). The Ministry of Infrastructure & Transport is directly responsible for policy formulation, planning, design, regulatory, coordination and implementation of programs, projects and services relating to engineering works, meteorology, transportation and public utilities which are part of the government infrastructure sector in Fiji. The Department of Town and Country Planning control and regulate the appropriate use of land in Fiji through the Town Planning Act (Cap.139) and Subdivision of Land Act (Cap.140). 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 as it covers all land-based resources such as forest, agriculture, minerals, rivers and streams (GoF, 2015a).

a) Roads and transportation

The transport sector contributes around 9% of GDP (FBoS, 2016b). Engineering infrastructure for both land and maritime transportation is a core function under the Ministry of Infrastructure, which is also responsible for rural electrification and renewable energy sources. Fiji Roads Authority is responsible for planning, developing, and maintaining Fiji's FJ$11 billion road infrastructure, which consists of approximately 7,600km of road, 1200 bridges, 9000+ streetlights, and 47 jetties. Assuming 6m wide road network over area that were once covered with native forested; a rough estimate of the emission from Fiji's road may be estimates at 8,000 tCO2. Although the direct impact is negligible it facilitates the access and urbanization.

In its first year of operation in 2013, the Fiji Roads Authority received FJD422 million (US$236 million) in the budget (FJD395 million capital expenditure and FJD27 million operating expenditure) – a 75% increase on 2012 funding allocations to the roads sector (FRA, 2013). This included major projects which were externally funded such as the upgrading of the Buca Bay Road in Vanua Levu, the Sawani-Serea Road in Naitasiri, and the Sigatoka Valley Road in Viti Levu. The upgrading of these roads is expected to provide critical market links for farmers and buyers and substantially reduce their business costs (GoF, 2013b).

Access to markets and marketability of products increases with easy access to roads and other modes of transportation (GoF, 2013b). As such, the underlying catalyst for road construction is the need to meet the economic and social needs of rural populations to access markets, urban centres, health services, and education services.

In addition to the direct loss of habitat and ecosystems caused by the footprint of resource roads, another aspect is the subsequent impact whereby forests, land, and resources previously inaccessible become open for development and exploitation (J. Vakarewa, personal communication, September 3, 2017). For example, a recent study on the impact of roads on deforestation found that nearly 95% of all deforestation in the Amazon occurs within 5.5 km of roads or 1 km of rivers (Barber, Cochrane, Souza, & Laurance, 2014).

b) Hydro Power Projects and associated facilities

The government's goal of bringing electricity to rural communities as a means of addressing poverty has driven the country towards hydroelectric development. Around 67% 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 on the larger islands, especially micro-hydro schemes, is significant. In recent times, micro-hydro schemes has been developed in two of the priority catchments, Bukuya in Ba and Muana in Tunuloa (UNIDO, 2016; GoF, 2015b) (GoF, 2015). The construction of a dam on the Sovi River has also recently been proposed to address the Suva-Nausori corridor's needs for potable water; however, such a development would considerably lower the biodiversity conservation values of the Sovi Basin. A feasibility study to assess the impact of such infrastructure is under development by the Government of Fiji since 2013

At least nine small HPPs are planned on Viti Levu and most will be under construction during the life of the ER-P area, while the are all relatively small (less than 50MW) two cascades are planned and most of the developments are proposed in upland areas of natural forest. The cumulative impacts and forest conversion of the proposed cascades and individual schemes with the associated infrastructure are difficult to assess.

The Monasavu HEP was established in 1982, based on these studies which indicated that the environmental effects of the project were projected to be minimal and within the capacity of the Fijian authorities to cope with (World Bank, 1978).

c) Urban development and resettlement

At the national level, 50.8% of the population is in urban centres and 49.2% in rural areas as depicted in (FBoS, 2008). An increase in population and the continuous influx from rural to urban areas have resulted in significant urban development resulting in encroachment onto first-class arable land, and the construction of homes on top grade agriculture soils with movement of agriculture to the marginalized rolling (unsuitable) hills. Outdated and unclear institutional arrangements as well as the prevalence of legal frameworks at different tiers of government have resulted in weak alignment between actors with limited response from relevant authorities to alleviate pressures of urban development challenges (Phillips & Meg, 2016). For example, unmanaged land development follows the main transportation corridors, and an inadequate stock of housing and land has resulted in 78,000 people living in 128 squatter settlements across Fiji (ADB, 2013).

Economic policy has shifted from a strong emphasis on import substitution, food self-sufficiency, and economic diversification, with the state playing a dominant role, to a strategy of export-led growth (Reddy, Prasad, Sharma, Vosikata, & Duncan, 2004). As such, first-class land is now being used for private developments in real estate, garment industries, tourism, and others. For example, in the corridor between Nadi Town and Nadi Airport, about 500 ha of top-quality sugar cane land has been taken for non-agricultural purposes (UN Habitat, 2012). Increasing urbanization, particularly growth of industrialization and squatter settlements, has also resulted in greater utilization of mangroves. Mangroves around Suva are declining due to pressures from expanding land uses and from interior pressures due to increased resource use by locals, including the reclamation or destroying of mangroves for cultural use.

By 2028, approximately 13,141 leases issued since 1997 under the Agricultural Landlord and Tenant Act will expire, contributing to additional resettlement. Farmers displaced through expiring land leases also have to be relocated by the Ministry of Agriculture, Sugar and Land Resettlement's Land Development and Resettlement Unit to land where they can continue farming to gain their livelihoods (UNCCD National Focal Point, 2007).

d) Tourism Development

Within the last two decades Fiji's tourism industry has grown dramatically, in the process overtaking the traditional export sector of sugar as the main foreign exchange earner and employment creator. Over 650,000 tourists visit Fiji annually (ADB, 2014a). In 1970, tourism contributed 32% of GDP while in 2009, tourism had increased to contribute 69% of GDP (Department of Energy, 2014).

Despite the social and economic benefits of tourism in terms of employment creation, foreign exchange earnings and linkages with the other sectors in the economy, tourism expansion is also engendering several detrimental changes. The increasing influx of tourists coming into the country pose increasing pressure on and competition for natural resources between agriculture, industry, housing and tourism (Narayan, 2015).

Since the first establishment of Denarau, a small private resort island, in 1969, major development works were undertaken around the islands of a scale never seen before in Fiji. The continuation of large-scale tourism development and urban expansion changes a landscape relatively quickly over a short period, especially when mangroves are cleared for reclamation. Development of port facilities on delicate coastal ecosystems in Fiji is also increasing, with large areas of mangrove swamps being filled in for this purpose (UNCCD National Focal Point, 2007).

Actors and Agents

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, along with the Fiji Roads Authority and Water Authority of Fiji, who is responsible for policy formulation, planning, regulation, coordination, and implementation of services relating to transportation and public utilities.
- Local population, who requires infrastructure development to accommodate population growth.
- The Department of Town and Country Planning, whose role is to control and regulate the appropriate use of land in Fiji.
- Commercial agriculture producers, whose expansion necessitates improved infrastructure to deliver products to market and ports.
- The Ministry of Agriculture, Sugar, and Land Resettlement, who is responsible for relocating farmers when their leases expire.
- 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, and also to enforce environmental codes and standards.
- Tourists, who increase temporally Fiji's population and increase demand for infrastructure, products and services.

3.2.9 Mining and gravel extraction

Deforestation and forest degradation impacts overall are limited due to the small scale of such activities at present, however, they can be locally important particularly for local communities.

a) Minerals

Mining and exploration in Fiji has historically been dominated by gold production from the Vatukoula mine, although significant other sector revenues come from bauxite and industrial minerals such as coral sand, gravel, and quarried materials, limestone and silver. Along with the exploration license, a permit to remove merchantable timber is issued to the mining company to ensure maximum utilization of timber resources.

The bauxite mine on Vanua Levu has an exploration area of 30ha and the surface lease of 156ha (small by world standards but one of the largest in Oceania). The EIA and the Environment Management Plan (which includes the impact mitigation plan) for the bauxite project is not in the public domain, and the full impact, in addition to the immediate loss of forest and soil erosion are now experienced by the stakeholders.

Several prospects licenses were recently granted by the government to explore different types of minerals, the majority of mining activities were related to gold, bauxite and sand and gravel. Mining is considered an emerging economic sector with potential to become a key sector of growth and a main source of government revenue in the future (Chen, 2015).

b) Sand, gravel and limestone

The extraction of river sand and gravel deposits has increased significantly over the past two decades with the growing demand in the construction industry driven by domestic and commercial operators due to largely to its accessibility and easy extraction. Quarries for sand and gravel exist in the Nakavu deposit along the lower parts of the Navua river, the Naduri deposit to the west of the Sigatoka river mouth, the Semo Quarry located between Sigatoka and Nadi, and the Sigatoka Sand Dunes.

Another threat from mining activities related to freshwater vertebrates and invertebrates is habitat destruction brought about by excessive gravel extraction, which leads to species decline and in turn affects

food security for rural communities. Similarly, a constant supply of clean water has been an expectation of rural living and one of the important determinants in the location of villages. Rivers and streams have always provided drinking water but have also been important for washing and bathing, as well as for livestock needs.

Future government plans include several prospective mining licenses and special mining license for copper, silver, manganese, molybdenum, limestone/ marble, petroleum, gas and geothermal heat that have been granted to investors. Given the long gestation period from prospecting to mining, the government is looking at opportunities to support investors fast track the transition. Under the Environment Management Act (EMA), EIAs are an obligatory requirement to safeguard against potential activities that may have negative impacts.

Actors and Agents

Mining and other extractive activities have generally been driven by both domestic and international demand for minerals and construction materials.

- Buyers of extracted materials, who place demand on extractive activities for valuable minerals and other materials.
- Mining companies, who are responsible for prospecting works and activating mining and extraction of resources.
- The Department of Environment, who is required to initiate the EIA study as well as to inform stakeholders and assess the EIA in an open and transparent manner
- The Ministry of Lands and Mineral Resources, who is responsible for the administration, development and management all State Land initiatives including the facilitation of the country's mineral sector and ground water resources. The Ministry hosts two departments: The Department of Lands and the Mineral Resource Department (MRD).
    - Department of Lands, is responsible for negotiating surface access rights and benefit sharing on lands designated under the Land Bank.
    - The MRD who regulates the mineral sector which includes all minerals whether of high or low value.
- The Ministry of Forestry for issuing Forest Right License to extract logs that are cleared during prospecting and mining operation however this will only become effective if the mining company wishes go sell the logs felled. Often, the logs are left to rot and the Ministry of Forest is not involved.
- TLTB, whose consent is required for licenses to mine on iTaukei land.
- Landowners, who may mine themselves or consent to activity on their property by commercial mining operations.

3.2.10 Natural Disasters

a) Cyclones

Frequent tropical cyclones have hit Fiji almost on an annual basis as it is located in the tropical cyclone belt in the Pacific Region. Cyclones area characterized by damaging winds, torrential rain, storm surges which lead to flash floods and landslides.

Fiji geographical position makes it vulnerable to natural disasters and external shocks. Over the last decade, cyclones have hit Fiji almost on a yearly basis with marked cyclone season from November to April. In the past decade, frequent and stronger impact of natural disasters has increased awareness and readiness as the general population realized the reality of associated risks. Disaster events in Fiji are reported to have an

average annual economic damage estimated at FJ$35 million impacting some 40,000 people each year (Esler, 2016).

The most destructive cyclone – tropical cyclone Winston a category 5 cyclone – made a landfall in Fiji on 20 and 21st February 2016 affecting 62% of Fiji's population where entire communities were devastated, resulting in an estimated total damage and loss across all sectors at FJD2.85 billion (Esler, 2016). Forest, crops, and infrastructure, such as houses, hospitals, and schools were damaged, with forty-four fatalities recorded. Landslides are associated with torrential rainfall during cyclones, which are the major contribution of severe storm events and triggers numerous landslides on catchment slopes.

Excess debris in drains/waterways generate large-magnitude overbank floods (Terry, Lal, & Garimella, 2008). More than 40 floods are experienced in Fiji since 1975 (ADB, 2014b). These floods are mostly associated with prolonged heavy rainfall during the passage of a tropical cyclone, tropical depression, and/or enhanced, slow moving convergence zone. Removal of vegetation cover through logging, wide spread expansion of subsistence and commercial agriculture, exacerbate water filtration into the soil substrate causing landslides under torrential rains. Fiji doesn't have a model to predict landslide occurrence that feeds the hazard maps (Greenbaum, et al., 1995).

Fiji has thus developed its Disaster Management Mechanism such as the National Emergency Operating Center in Suva and Divisional Emergency Operating Center in Lautoka, Nadi and Labasa. Each town and government station are expected to set up similar Emergency Center to organize, direct and assist community members find the safest shelter. A Regional Specialized Meteorological Center coordinates special media releases and instructions to areas of highest risk.

b) Seismic events

Fiji is surrounded by the Pacific Ring of Fire which aligns to the boundaries of plate tectonic plates; associated with frequent deep seismic activities.

Reliable recording of seismic events in Fiji commenced in 1918 (Pacific Disaster Centre, 2005). Earthquakes occur in several zones, with some of the largest earthquakes in Fiji occurring in the north-eastern region of the country. This region is considered to be the Islands' most active earthquake zone (Vuetibau, 2004, D4a). The main islands of Fiji, Viti Levu and Vanua Levu, are within a seismically active area within the Fiji Platform (Rahiman, 2006). This, and the seismicity of the plate boundary zone between the Pacific and Australian Plates and the Pacific Ring of Fire mean Fiji is susceptible to tsunami generated by local, regional and distant (or ocean wide) events (from sources 100 km, 1000 km, >1000 km respectively). The impact of tsunami on Fiji is variable and dependent on the shape of the seafloor between the source and the affected area (Thomas, Burbidge and Cummings, 2007, D13). There have been several recorded incidences of tsunami events within Fiji. The Pacific Disaster Centre's (PDC) *Summary of Earthquakes and Tsunamis Affecting Fiji 1850 – 2004* states that "Fiji experienced 17 tsunami events between 1877 and 2004". Of these, four had recorded wave heights ranging between 0.5 and 5 metres above mean sea level. Fiji's Seismology Section of the MRD states that "eleven tsunamis have been recorded in Fiji, of which three were generated within Fiji waters" (Prasad, 1991)[57].

c) Natural hazard mapping and climate adaption

National Disaster Management Act (NDMA) of 1998

The NDMA establishes a National Disaster Management Council tasked to develop suitable strategies and policies for disaster mitigation and preparedness; training and capacity building for disaster response and management; recommend policies and strategies to the government as well as the ability to form sub-committees to execute specific tasks relevant for national disaster mitigation. The Act also provides penalty for obstruction or interference with the smooth delivery of the National Disaster Management Plan or Agency

[57] From SOPAC member Countries National Capacity Assessments: Tsunami Warning and Mitigation Systems Republic of the Fiji Islands; 2008.

Support Plans. The National Disaster Management Plan replaces the EMSEC Precautionary Manual for Emergencies and is the policy piece of the NDMA.

The National Adaption Plan[58]

The NAP recognises that the main climate hazards for Fiji are tropical cyclones, storm surges, droughts, and flooding events. Climate change poses significant problems for food and nutrition security in Fiji. Much of the prime land for agriculture is in coastal areas which are affected by sea level rise, tidal surges, and salinity intrusion[59]. Additionally, soil erosion from extreme precipitation events (including river bank erosion) results in topsoil being lost which has significant implications for long-term food and nutrition security. An in-depth understanding of climate change implications for human settlements in Fiji is lacking. This is a great concern as approximately 90% of people live on the coast, mostly along the Suva-Lami-Nasinu-Nausori, Nadi-Lautoka-Ba, and Weilevu-Labasa-Nasea urban corridors. However, it is generally know that urban centres are at risk from seaborne and riverine natural hazards, cyclones, storm surges, coastal and riverine erosion, landslides, floods and already occurring sea level rise due to climate change.

Actors and Agents

Very few agents, if any, can be listed responsible for deforestation or forest degradation, however the following agents are associated with disaster risk management and could potentially decrease the impact of natural disasters.

- Ministry of Rural & Maritime Development and National Disaster.
- National Emergency Operating Center in Suva & Divisional Emergency Operating Center.

3.3 Overview of the socio-economic conditions in the ER-P area

The 11 ER-P provinces present a varied set of socio-economic conditions that are influenced by their location (coastal, inland or upland), natural resources (coastal mangroves, grasslands once were largely forested and forests and numerous water bodies including lakes, streams and rivers), economic activities (ranging from upland natural forest based activities to tree plantations for milling, to grasslands used for livestock grazing, agricultural cropping land especially the cultivation of sugarcane and to a lesser extent other crops, and tourism), and most importantly the people themselves (most the ER-P provinces are people in rural areas are iTauekei to a greater extent than other non-iTaukei). The most populous of the ER-P provinces are Ba, Naitarisi and Rewa are in Viti Levu where Fiji's largest urban populations (Nadi, Lautoka, Nasouri and Suva – also where the largest informal settlements constituting 15% of Fiji's population - are located in addition to Labasa in Macuata Province in the Northern Region of Vanua Levi. Male children outnumber female children by a ratio of 100 female children to 107 (right on the world average) but the highest ratio in the ER-P provinces is in Macuata where the population ratio is 112 to 100.

The average household size for iTaukei households is 6.2, but this varies with whether or not the household is poor or not. Poorer households surveyed for the SESA sometimes had household members in excess of 10 (the highest number was 16) while non-poor households had average household sizes of just under 6 persons (were some smaller households of 2 to 3 members). By way of contrast the average size of poorer non-iTaukei households was 5.5 persons (the largest number was only 8) whereas for non-poor iTaukei households the average size of households was 5.2 persons (smaller households were similar in size to iTaukei households). Of course, when reference is made to iTaukei households it has to be remembered here the reference is to the *Tokatoka*, which is the individual family unit and for most iTaukei they are members of a *Mataqali* clan with its attendant social and communal obligations that are not typically characteristic of non-iTaukei households

[58] The National Adaption Plan: A pathway towards climate resilience, Ministry of Economy 2018

[59] Climate Vulnerability Assessment: Making Fiji Climate Resilient (2017) Prepared by the World Bank for the Government of Fiji.

at least in the ER-P Accounting Area. This does not mean that in non-iTaukei communities there are no social and communal obligations, but they are embedded to a much greater extent in cultural characteristics of non-iTaukei culture than in iTaukei culture. iTaukei cultural obligations are more deeply embedded in customary land ownership, which of course non-iTaukei households do not have access to except *via* leasing arrangements.

Education and literacy data for the ER-P provinces after 2007 has not differentiated among and between different groups based on ethnicity, but data for 2007 reveals that less than 0.0% of iTaukei people had no formal schooling compared to 3.5% of non-iTaukei people (4% of people nationally have not attended school). 85% of iTaukei households had household members who attended secondary school compared to 70% of non-iTaukei households (74% of people nationally have attended secondary school), but 23% of the latter have participated in post-secondary education programs compared to only 13% of non-iTaukei households (15% of people in Fiji under the age of 45 have participated in post-secondary education). In relation to gender differentiated participation these is little differentiation although iTaueki women are more likely to participate at all levels than non-iTaukei women, but it is difficult to attribute this to "culture" or other reasons such as "poverty" because, especially in the context of poverty issues there is not a great deal of difference between the poor and non-poor in the rural areas. Older iTaukei women and men are more likely to be able to converse in both the Fijian and English language than older non-iTaukei women and to a lesser extent men. Non-iTaukei women and men speak Fiji Hindi or what is sometimes referred to as *Fijian Baat* or *Fijian Hindustani* and many of these younger women and men also speak Fijian (some iTaukei also speak Fiji Hindi although to a lesser extent than the non-iTaukei persons of Indian ethnic background and this is partly explained by the latter's dominance in the business and retail sector).

Also, most young Fijians, even in rural areas and irrespective of gender and ethnicity also speak English that is also one of the three official languages of Fiji. This incidentally has some implications for the ER-P. Where non-iTaukei communities are to be targeted the language of dissemination should be Fiji Hindi not Fijian or English unless preferred by all participants, which was not found by the SESA Team during consultations with these communities in Ba Province. To date information pertaining to REDD+ in Fiji has not been systemically disseminated in non-iTaukei communities, but it is argued in this SESA and the Consultation and Participation Plan, that will be included in the ESMF and Process Framework, that further dissemination should be supported.

In the context of health indicators, Infant Mortality Rates (IMR) which is a good indicator for assessing health outcomes is 15/1,000 in Fiji. In the Central Region the IMR is 11/1,000, Western 16/1,000 and Northern 24/1,000. This compares with 6/1,000 in the Cook Islands which has the lowest IMR among South Pacific Island States and is relatively low by comparison with some middle-income countries and has declined from 25/1,000 in 1965. The Under 5 Mortality Rate for Fiji is 22/1,000 compared to 10/1,000 in the Cook Islands but the Mortality Rate is 35/1,000 in the Northern Region, 21/1,000 in the Western Region and 20/1,000 in the Central Region. Common aliments that impact upon mortality rates in the ER-P provinces include birth asphyxia, congenital malformations, sepsis, underweight and congenital syphilis. While over 98% of young people are immunized for BCG/ Tuberculosis and in every ER-P village the percentage of young children immunized for other childhood illnesses (e.g., OPV1, 2 and 3 and Pentavalent) is below the effective rate of 90%. According, to 2018 WHO data male life expectancy is 69.9 years (Male: 67.1 and Female 73.1). There is no data on a provincial basis, but it can be assumed that that life expectancy is lower among poorer households than non-poorer households. Similarly, there is no data disaggregated by ethnicity.

The leading non-communicable diseases in Fiji are hypertension, diabetes and illnesses associated with obesity (even some cancers are on the increase). In recent times dengue fever has dramatically increased in Fiji. In 2012 there were only 708 positive cases but by 2018 there were over 45,000 positive cases and a number of deaths (data not available). Whether this can be attributed to climate change in the South Pacific is problematic but from Mainland SE Asia there is anecdotal evidence that perhaps it is. However, it also needs to be noted that dengue in Fiji is not simply occurring in urban and peri-urban areas or in coastal settlements but also in upland forested areas where people are living. The incidence of HIV/AIDS in Fiji is quite low, but once more anecdotal evidence suggests that with the rise of "commercial sex" work in Fiji this may change. No sociological studies have been undertaken of commercial sex workers – female or male – but once more

anecdotal evidence suggests that both iTaukei and non-iTaukei workers, including some who have migrated from rural areas are involved in such activity. This phenomenon is indicative or rural-urban drift in Fiji, which can also be argued does not bode well for younger and better educated village women and men residing in the village and contributing to the ER-P.

People living with some form of disability do have to be considered as vulnerable. In the ER-P provinces the greatest form of disability is associated with forms of physical impairment accounting for over 60% of all people disabled. Of disabled persons males constitute 54% and females 46%. The highest incidence of disability is 2.5% in the Northern Division of Macuata and the lowest of 0.2% in the Central Division of Namosi. There is no data disaggregated by either gender or poverty although intuitively and based on the SESA observations poorer people who are physically impaired and living in more remote villages are more likely to be disadvantaged than people from non-poor households living in less remote villages. It can be stressed here that some of the ER-P interventions, especially those associated with afforestation and reforestation or other forest protection activities are generally beyond the physical capacity of these physically impaired persons, but they should also benefit from both carbon and non-carbon benefits. Interestingly, both iTaukei and non-iTaukei informants agreed that any program should also ensure the participation of these physically impaired households as equal beneficiaries in the ER-P.

Access to a metered water supply in the ER-P provinces ranges from a high of 70% in Rewa to a low of 20% in Ra. However, villages in Ra in the Western Division have access to better natural water resources than in villages of Rewa so this does not mean metered water supply is a guarantee of a reliable supply of potable drinking water but clearly in the watersheds of the ER-P provinces it is necessary to protect watersheds. But metered water supplied from engineered water supply systems is supposed to be safer than from other sources even if it is not considered as having the same good taste as water from other sources. 70% of households in the ER-P have access to flush toilets ranging from a high of 80% in Rewa to 50% in Ra.

While no-one in Fiji experiences serious forms of food insecurity in the context of nutrition relating to stunting that 8.5% of non-iTaukei persons are stunted and 7.2% of iTaukei persons. Stunting for females at 9.5% is significantly higher than 5% for males and 7% of infants up to 2 years and 8% for young children 2 to 5 years. Whether this means that households are more likely to ensure that males and better nourished than females are problematic. During cultural and religious festivals older males are served first, but on a day-to-day basis males and females irrespective of gender typically eat at the same time in the same venue. Anaemia rates at 40% are higher for males than females at 35% and 88% for infants under 2 years, 22% for young children from 2 to 5 years, and 25% in urban areas and 70% in rural areas. Only 1% of iTaukei experience wasting compared to 8% of non-iTaukei, 4% of males and 3% of females, 4.5% for infants under 2 years and 3% for young children from 2 to 5 years. Vitamin A deficiency occurs in 42% of males, 40% of females, 91% of infants under 2 years and 25% for young children from 2 to 5 years. Interesting Vitamin A deficiency is highest in Ba at 75% and lowest in the Northern Division, which is also the poorest division at 15%. This SESA cannot offer plausible explanations as to why this should be so but it does demonstrate that poverty per se does not always explain nutritional issues.

In relation to livelihoods there are significant differences in the pattern of rural household employment by ethnicity based on Household Income and Expenditure Survey of 2008-9. Non-iTaukei households are twice at as likely at 46% to have a household head source of income in wages and 50% of such households who are self-employed than iTaukei households where 24% of these households have at least one member working for wages but only 20% who are self-employed. 18% of iTaukei rural households had household heads who are not working compared to 31% of no-iTaukei household heads. This suggests significantly higher levels of income vulnerability among non-iTaukei than for iTaukei because of variations in income received from self-employment and also because there are 58% of non-iTaukei household heads that state they are not working. However, there is a gender bias built into the HIES in Fiji that should also be noted. That is, they are usually referenced to the household head – and unless this head is female (some 12.5% of households in the ER-P area) – it does not take adequate account of the multiple sources of income in low income households, especially the multiple sources of income of women in such households. There is also the issue that the head of household is not always clear and it maybe in some households as the SESA Team found that the titular head might be a retired father of adult children while the functional head (one who earns income and manages

finances) may, in some instances not simply be a man, but also it might be a woman. This is also why the ER-P has to consider both generational and gender issues when attempting to mobilize villagers.

Nearly 50% of non-iTaukei households rely on casual wage labour as the main source of their income compared to only 15% of iTaukei households and 18% of non-iTaukei households rely on waged and salaried incomes compared to 12% of iTaukei households. Nevertheless, this reliance on casual wage labour varies from province. In provinces where sugar is harvested a significant number of iTaukei household members, both make and female, rely on casual wage labour during the six months that sugar is harvested. Such households do not simply live in villages contiguous with the land that non-iTaukei lease for the cultivation of sugar but travel from a variety of villages elsewhere in Fiji including upland villages where households are more forest-dependent than iTaukei villages located at lower elevations. However, more than 60% of iTaukei households rely on primary production (primarily taro, cassava, kava and livestock) as their main source of income compared to only 12% of non-iTaukei households. Income from businesses are infinitesimal for rural iTaukei households compared to 5% for non-iTaukei households although the same caveat as expressed above vis-à-vis the multiple sources of iTaukei women should not be ignored. Surprisingly 10% of non-iTaukei households have as their main source of income pensions, social transfers and remittances compared to 8% of iTauekei households. But the higher percentage is likely to be due to remittances that non-iTaukei receive from household members or relatives living abroad especially after the political turmoil of the 1980s and 1990s when many agricultural leases were not renewed and where a significant number of non-iTaukei persons migrated to New Zealand, Australia, Canada and Britain. Some 2% of iTaukei households list other sources of income compared to 8% of non-iTaukei households.

This can be taken one step further when the focus shifts to sources of income. Some 30% of iTaukei households receive regular wages and salaries compared to 58% of non-iTaukei households where as 33% of iTaukei households receive casual wages compared to just over 30% of non-iTaukei households. But 60% of iTaukei households receive money from friends and family compared to just under 40% of non-iTaukei households. Where iTaukei households outstrip non-iTaukei households is in income derived from forestry, agriculture, horticulture and mangrove products: over 85% of rural iTaukei households compared to 27% of non-iTaukei households. Similarly, and not surprising over 40% of rural iTaukei households receive income from land they lease either through the TLTB or in some instances the Land Bank whereas only 2% of non-iTaukei households receive income from such sources. However, it was learned during the SESA that some iTaukei households receive informal payments for leasing land, especially in coastal areas to both other iTaukei households who have their own land as members of their Mataqali but want to use more productive land and even some non-iTaukei households sub-lease land on an informal basis to other non-iTaukei households. Some 18% of iTaukei households receive income from both formal and informal businesses compared to 10% of non-iTaukei households but once more the same caveats expressed above apply. In relation to government assistance 12% of both iTaukei and non-iTaukei households receive some form of government assistance (social protection allowances, poverty benefits scheme, social pension scheme, food vouchers for rural mothers, and bus fare assistance are all examples of this).

Ownership of residential housing is high at 94% for iTaukei households and 82% for non-iTaukei households and the level of renting is very low although many non-iTaukei renters told the SESA that their rentals were not always very secure whether renting from iTaukei landowners or other non-iTaukei landowners. As a generalization those households that rent are generally among the poorest of households in the ER-P Provinces unless they own houses elsewhere (more likely to be non-iTaukei than iTaukei). But most of these rentals are in lowland coastal areas close to main transport routes and the extant point is that all iTaukei renters are members of mataqali that own land in the ER-P Accounting Area and could benefit from the ER-P. The physical structures of the outer walls of these houses reflect the ability of the iTaukei to use wood 35% compared to the 20% of houses occupied by non-iTaukei occupants. But more significant and suggestive of a high level of self-building is that over 65% of non-iTaukei houses have outer walls made of tin or corrugated iron compared to 40% of iTaukei houses. Concrete, brick or cement is used for 15% of iTaukei houses and 12% of non-iTaukei houses and traditional *bure* materials for 8% of iTaukei houses and less than 1% of non-iTaueki houses. In upland areas where there is ready access to forests nearly all iTaukei houses are constructed out of wood, but in areas that Cyclone Winston devastated in 2016 such as the mid-Western Division on Viti Levu houses that are being rebuilt are generally "cyclone-proofed" and are using a variety of

construction materials. The houses of iTaukei owners are typically smaller with an average size of 2.28 rooms compared to 3.49 rooms of non-iTaukei owners. The size of house, rather than construction materials except in urban areas, is likely to be an indicator as to whether the occupants of these houses are poor or non-poor.

Where there is a significant difference between iTaukei and non-iTaukei households is in relation to electricity. Over 80% of non-iTaueki households have access to electricity compared to only 57% of iTaukei households, but probably the reason for this is that iTaukei households are more likely to be living in remote areas than the non-iTaukei households. In the more remote areas kerosene is used for lighting although in recent times there has been an increase in the use of rooftop solar units but these are only effective during daylight hours when there is sunshine and the irradiation factor is much lower in upland areas and in some lowland areas then where for instance, the Western Division around Nadi and Lautoka and the Northern Division around Labasa have higher irradiation levels because of lower rainfall and lower rainfall. A major issue for this ER-P is that for cooking 90% of iTaukei households use wood for cooking and heating and 80% of non-iTaukei households. Specifically, the SESA found that over the past few months Fiji Pine Limited has attempted to restrict access to its pine plantations so households irrespective of their ethnicity cannot access the plantations to collect firewood (and other NTFPs) and this has created a market for firewood collected from forests: not yet a driver of "deforestation" but raises questions about the "short-sighted" nature of this ban.

In terms of durables non-iTaukei households are more likely to own a motor vehicle at 15% than iTaukei at 3% but in 2013 the latter were recorded at owning no motor vehicles. Refrigerators are owned by 65% of non-iTaukei households compared to 20% of iTaukei households; desktop or laptop computers by 5% of iTaukei households compared to 12% of non-iTaukei households although with a reduction in the price and use of smart phones that can be used to access internet the ownership of mobile phones among iTaukei households has increased from 21% in 2013 to over 60% in 2018 and non-iTaukei households from 23% to over 70% during the same period. Television ownership rates among the iTaueki are approximately 50% (but people without a television set often visit other households that own television sets to watch TV) and 80% for non-iTaukei households. Radio ownership is high at 80% for iTaukei households and 100% for non-iTaukei households (there are as many Fijian-Hindi FM radio stations as there are Fijian language FM radio stations). Washing machines are owned by 25% of iTaukei households and 45% of non-iTaukei households. These relatively high percentage ownership of durables is partly related to the fact that in the past five years consumer durables have decreased in price by 35-60%. Ownership of these durables or lack thereof to a large extent differentiate the poor from the non-poor households although not wholly because in villages where there is problematic access to any form of electricity households are not gong to acquire durables that rely on electricity.

To put socio-economic issues in their sociological context the issues are not simply related to the indices identified above and it is necessary to also focus on communal obligations at the village level and also church obligations because they have an important bearing on social relations from the *Tokatoka* though to the *Mataqali* and *Yavusa* and ultimately the *Vanua* level for the iTaukei. The same structures do not impact upon the non-iTaukei, but it is important to compare and contrast the indigenous and non-indigenous social groups within the ER-P Accounting Area.

The iTaukei are culturally obligated to make significant contributions to their home villages, even when they have moved away although this does not always apply to women who have moved to another village as result of marriage. These contributions are made for funerals, weddings and other community events such as when the local rugby or netball team excels in sporting fixtures at the district, provincial or even divisional level or even if and when a young village male or female graduates from university. Amounts that are to be paid can range from a low of FJD150 to a high of more than FJD2,500 and in one study it was reported that the median contributions over the past 12 months amounted to FJD480, which is still very significant (more than 30 days of waged labour for most villagers). Where clans refuse to contribute, which is most unlikely or are unable to meet communal expectations a feeling of shame and guilt known as *madua* is likely to occur and it is a very important cultural value that all iTaukei try to avoid because demonstrating an unwillingness to fulfil traditional societal obligations can result in ostracization and a sense of non-belonging to one's clan. *Madua* is related to the *kerekere* system of "borrowing" from one's kindred without any obligation to repay and when

a “favour” is asked to cannot be refused. There is another system known as the *dinau* system that is a form of time-based payment but how widely it is practised remains unknown. SESA investigations found that most iTaukei informants prefer the *madua* over the *kerekere* system of assistance.

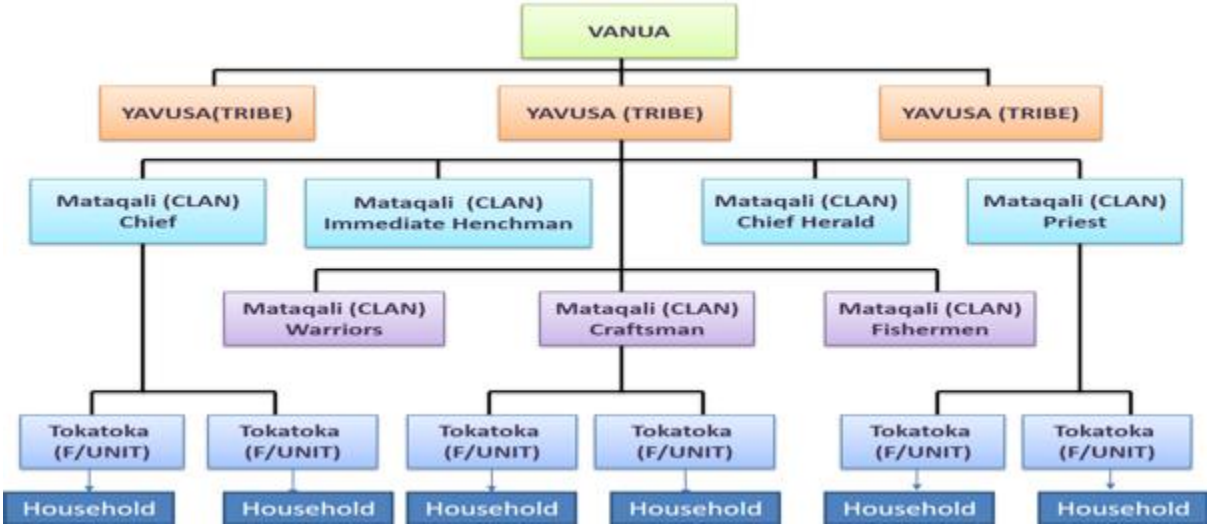
However, the *kerekere* system does have its advantages such as during times of crisis sharing with other households means that everyone can access food and whatever life necessities are available. It is simply inconceivable that any household in a crisis whether on an individual household basis or on a village-wide basis would be neglected. Non-iTaueki households do not have quite the same communal obligations, but rather extended household dynamics are more important. These dynamics include reducing expenses in shared households to avoid extra living costs, such as rent or a less stressful work environment by seeking work closer to home or feelings of non-belonging when far from home. Such dynamics may appear to be less pervasive than in iTaukei culture, but they should not be discounted and are important in non-iTaukei Fijian-Indian culture in Fiji. Where non-iTaukei own land (less than 8% of all land in Fiji is freehold) land is inherited by the oldest son and while this son can support younger members of the household should he choose to do so it is not unknown that the oldest son might simply refuse to do so. Sisters generally marry and move to live with their spousal partner and are therefore do not enter the equation. In deciding whether the iTaukei or non-iTaukei benefit more from the communal obligations embedded in iTaukei culture or the household dynamics embedded in non-iTaukei households it is likely that poorer and more vulnerable iTaukei households are more likely to benefit socially and economically than non-iTaukei households, but the latter are more likely to be able to accumulate wealth and avoid distributing to poorer and more vulnerable households.

For the iTaukei households it also needs to be remembered that they have church obligations and given the centrality of the church irrespective of which religious denomination a household belongs to they are often expect to tithe at least 10% of their income to the church and often more for special fundraising drives for renovations and other expenses. This imposes considerable burdens on cash-poor households where annual church tithes range from FJD250 to FJD700 with a reported median of FJD400. Now households can try and avoid paying such tithes, but the spiritual consequences are very severe with messages of “fire-and-brimstone” replete in the narratives of the church clergy and laity with close connections to the church. But that to one side most iTaukei interviewed for the SESA stated they get a “sense-of-meaning” out of their interaction with the church and cannot conceive of a world where the church does not play an important role. For non-iTaukei households the Hindu Temple or the Muslim Mosque (and to a lesser extent the Christian Church because some Fijian-Indians are Christians) are also very important but there are no formal tithes and households contribute what they can. Of course the non-iTaukei the SESA talked to said they would prefer to make greater rather than lesser contributions because they too derive a sense-of-meaning from supporting the temple or the mosque.

3.4 Overview of the socio-economic conditions livelihoods, food security forest use and dependency and agriculture in the ER-P area

The 11 ER-P provinces present a varied set of socio-economic conditions.

Figure 3.3 Traditional governance structure in Fiji



3.4.1 Livelihoods

Agriculture is the single largest sector in the economy, contributing some 43% of Fiji's foreign exchange earnings, employing half the population and accounting for nearly 20% of GDP. Sugar cane is the most important crop, and two industries, sugar and tourism, largely underpin the economy, which can result resulting in an erratic weather, crop yield related GDP. The profitability of Fiji's sugar industry has depended on preferential trade agreements, such as the Lomé Convention Sugar Protocol. The ending of preferential tariffs has been a significant factor in the decline of the sugar industry, however, sugarcane industry still remains important to the Fijian economy, although reports vary on its actual contribution to GDP with estimates at about 1.7% of GDP.[60]

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. As a rough "rule-of-thumb" based on a quantitative assessment of forest-dependency on 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: admittedly a very small number of villages) whereas for non-iTaukei household dependency is generally between 20% and 35%. On Vanua Levu dependency among iTaukei households is 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 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 catch fish and other aquatic products in the streams passing through customary land this is more difficult. In recent times this is because iTaukei women in the villages are selling their fish to trading intermediaries and passing traffic, which is something they did not do in the past. Most of the NTFPs collected are for self-consumption but some NTFPs such as 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

[60] Fiji Sugar Corporation Annual Report 2018 reported that the total sugar farming area has been reduced from 73,000 ha in 1996 to 55,000 in 2006 and 38,040 in 2018, although the FSC Annual report does show an increase in area from 36,795 ha in 2016 and cane produces similarly rose from 1.39 m t to 1.63 m t of cane.

rural households living in close proximity to 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). Although for coastal communities relying on mangroves for their livelihoods this is more of an issue.

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: leasing forest land is quite different to owning forest land.

Ethnicity of a particular household does not wholly explain poverty in the ER-P accounting area although as explained above iTaukei are more likely to be living in poverty than either the non iTaukei Fijian group or other smaller ethnic minority 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. Where non-iTaukei have more income-generation opportunities than the iTaukei is 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, livestock, logging (each Mataqali is allowed to log up to 100 hectares at a time under the existing quota system and the proceeds are partially shared with all members: see Section 15 of the ER-PD). Tourism income is important in Fiji, but few of the households in the ER-P accounting area irrespective of their ethnicity benefit directly from this sector unless they are either directly or indirectly active in this sector. Rural non-iTaukei derive 50% of their income from sugarcane production, 35% from other crops, and 15% from livestock. Tourism income is important in Fiji, but few of the households in the ER-P accounting area irrespective of their ethnicity were benefiting directly from this sector unless they were either directly or indirectly active in this sector the situation is now changing. By 2018 the average adult income from tourism for rural households involved was FJD4,232 compared to all forms of agriculture and forestry of FJD3,125 but this is based primarily on what iTaukei who have leased their land to resort operators are earning from annual leases and more recently also a percentage of the annual audited net turnover from the resort's operation. Some of these landowners are earning double, triple and quadruple the average annual adult income and some of these landowners interviewed for the SESA while they belonged to mataqali that also owned forest land stated they were not remotely interested in the ER-P because they could see absolutely no benefits in the ER-P for themselves.

a) Poverty

Fiji is vulnerable to disasters triggered by natural hazards, which can undermine sustained economic growth and poverty reduction. According to the United Nations Economic and Social Commission for Asia and the Pacific's ranking of countries most exposed to natural hazard- induced disasters, Fiji is 14th, with 27.7% exposure.[61] In February 2016, tropical cyclone Winston caused damage and losses equivalent to 29.2% of GDP, which slowed growth to only 0.7% that year. Damage and losses were largely in rural areas and would have been higher had the cyclone.

Almost 26,000 Fijians are pushed into poverty every year due to cyclones and floods, and that number is expected to rise to over 32,000 by 2050 (WB Figures, from Making Fiji Climate Resilient[62]). It is clear that

[61] UNESCAP. 2015. *Overview of Natural Disasters and their Impacts in Asia and the Pacific 1970–2014*. Bangkok: United Nations.

[62] Climate Vulnerability Assessment: Making Fiji Climate Resilient (2017) Prepared by the World Bank for the Government of Fiji.

poverty does exist in Fiji and no matter what poverty instrument that is used whether it be the basic needs poverty line or the food poverty line or the income poverty line poverty exists in Fiji. There are methodological problems with the poverty lines including what constitutes the Per Adult Equivalent Basis, static nature of HIES surveys, whether there is commonality among all communities or within specific households, inherent gender bias, and limited household record keeping. A recalculation of the poverty criteria used has identified six characteristics of low-income households as below that make sense in the context of the SESA and they include household composition, household head unemployment, education, housing and access to electricity.

The generalizations are as follows:

- Many rural iTaueki households are resource rich but cash poor and find it difficult to meet communal and religious obligations and purchase goods and services for the household that require the use of cash;
- Larger households tend to be poorer and household size decreases as households move out of poverty or were never in poverty in the first instance;
- There is significant unemployment in poorer households but unemployment is greater in non-iTaukei households then iTaukei households;
- The likelihood that the household head earns more income from wages or salary increases as s/he is not considered to be from a poor household or in danger of moving into poverty;
- Poverty rates among iTaukei are lower than they are for non-iTaukei in rural areas of the ER-P because the former have access to customary land that cannot be alienated unlike the land leased by non-iTaukei that might not be renewed;
- While the participation of the rural population in education at all levels is quite impressive by comparison with some other middle-income countries non-iTaukei are somewhat less educated than the iTaukei;
- Home ownership is high among both the iTaukei and non-iTaukei and those that are forced to rent are generally considered to be poor as are those who use substandard building materials to construct houses; and
- iTaukei in remote rural areas are less likely to have access to electricity than non-iTaukei living in less remote rural areas but this as an indicator of poverty is not wholly accurate.

The larger impact on poor people means that natural hazards can cause significant increases in poverty. Modelling the impacts of natural disasters on the losses of individuals can be used to clarify the impact of disasters on income distribution and poverty in Fiji. However, overall the government estimates that the incidence of poverty declined from 31.0% in 2008–2009 to 28.1% in 2013–2014.[63] (See Table 3.11 below)

Poverty remains a significant concern in Fiji, despite the overall level of development and the moderately high average incomes. Poverty trends indicate that the national incidence of poverty declined from 35% in 2002–2003 to 31% in 2008–2009. This reduction in poverty was uneven—urban areas saw a reduction in poverty from 28% to 19%, while poverty in rural areas increased from 40% in 2002–2003 to 43% in 2008-2009, possibly as a result of the decline in the sugar industry, expiring land leases for agriculture. All urban divisions saw some reduction of poverty but most rural divisions, except the rural northern division, saw increases in the incidence of poverty. The Northern Division remains the poorest of all the divisions, with some 45% of the occupants below the basic needs poverty line. Northern rural areas had the highest rate of rural poverty (51%, despite a decline from 57%), while Northern urban areas had the highest rate of urban poverty (38%).

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[63] Fiji Bureau of Statistics. 2015. *2013–2014 Household Income and Expenditure Survey: Preliminary Findings Release 1.* Suva.

Overall though, the highest concentration of poor people is in urban and peri-urban areas. (ADB CPD 2014-18)

Average household incomes increased from FJD12,753 in 2002–2003 to FJD17,394 in 2008– 2009, with larger increases for urban households (FJD23,036 in 2008–2009, or 51% higher) than rural households (FJD11,608 in 2008–2009, or 10% higher). These trends reflect a range of factors, including (i) the increasing displacement of sugarcane farmers as a result of expiring land leases, and declining incomes resulting from the gradual reduction in sugar prices; (ii) the loss of employment in the garment industry caused by the closing of preferential access to the main export markets; (iii) rising consumer prices; and (iv) low real growth in wages. These factors have eroded the standard of living for the poorest members of the community. Regional disparities have resulted in significant urban migration; and while poverty rates are higher in rural areas, most poor people are concentrated in urban and peri-urban areas around the main centres of Suva and Nadi.

Ethnic dimensions of poverty indicate that the two major ethnic groups had almost the same incidence of poverty in 2002–2003 (around 35%) and the same reductions in poverty to around 31% in 2008–2009. Other ethnic groups saw a slight increase in poverty. Indigenous Fijians (iTaukei) increased their share of the poor from 55% to 60% while Fijians of Indian decent (non iTaukei) reduced theirs from 42% to 35%, although this reflects a similar change in broader population demographics.

Table 3.11 Poverty Incidence Rates by Division and Household Characteristics, 2008-2009 and 2013-2014 (%)

	2008-2009			2013 to 2014		
	Total	**Urban**	**Rural**	**Total**	**Urban**	**Rural**
Total	31.0	18.6	43.3	28.1	19.8	36.7
By Division						
Central	21.5	15.7	35.9	22.4	16.9	36.9
Eastern	38.0	30.2	40.1	41.0	29.4	42.1
Northern	47.7	37.6	51.4	47.9	33.8	52.6
Western	32.5	17.3	43.0	24.5	21.6	26.6
By sex of household head						
Male headed	31.4	18.6	43.3			
Female headed	28.7	18.6	42.6			

Table notes: Modified after ADB 2015, Fiji Building Institutions for Sustained Growth, Manila; Fiji Bureau of Statistics, 2015, 2013-2014 Household expenditure Survey: Preliminary Findings – Release 1 FBoS Release No.98, 2015

Poverty at 35.9% in the Central Division of Viti Levu where the ER-P Accounting Area is considerably smaller than either the Eastern Division of Viti Levu and Northern Division of Vanua Levu, but it increased by a very small percentage in rural areas (the focus is on rural areas not urban areas) of 1.0% and similar quite small increases occurred in the other two divisions. Whether it can be argued that rural households living in these three divisions are poorer because of their greater reliance on the forests is difficult to quantify because robust empirical evidence is lacking although intuitively it is likely that rural households with a greater dependency on the forests than other rural households who rely on diversified sources of land-based income generation activities and waged-based incomes are less likely to be poor than the former.

Linking the above assertions to the gender of household heads it can be found that of poorer households (if defined by the income poverty line of FJD3.10 per capita/per day) there are slightly more male-headed households living in poverty than female-headed households. This has some ramifications for the SESA Gender Analysis and the subsequent GAP and these are that while there are poor female-headed households there are also poor male-headed households and the issue then becomes one more of or at least partly of poverty rather than just gender. Unfortunately, there is no robust data on household dependency ratio s for Fiji as there are for poverty analyses in some other countries that also factor in gender issues. However, the larger the number of children the poorer the household is likely to be. In all three divisions the percentage of

poor households with three or more children in 2008-2009 was 52.6% for rural areas compared to 27.4% for urban areas. Link this to the incidence of poverty and rural areas had a 36.7% poverty rate in 2013-2014 compared to a 19.8% poverty rate in urban areas and this is largely reflected in all three Divisions in the ER-P Accounting Area.

b) Food Security

Food security is an issue in some parts of the ER-P and there is constant threat of cyclones every year.The Roadmap for Democracy and Sustainable Socio-economic Development 2010-2014 (RDSSED) emphasizes two strategic objectives related to the promotion of agriculture and rural development: 1) improve the availability of and access to nutritious locally produced foods for poor and vulnerable rural households; and 2) increase rural incomes from both farm and non-farm income- generating and employment opportunities.

Subsistence farming and sugarcane production have shrunk in the structure of the economy, while the shares of other crops (traditional food crops, tropical fruits, vegetables, spices, cocoa and coconut products) and livestock (beef, dairy, pork, poultry, goat and bee stocks) have increased to contribute an average of 6.8% of GDP over the past decade, indicating a gradual transformation from semi-subsistence to semi-commercial farming. These commodities make up 5% of exports by value, but still account for 19.6% of total food imports.

Figure 3.4 Local NTFPs and extracting timber for household use

Near Nayavutoka village Viti Levu	Timber being extracted from the forest near Cogea village Vanu Levu

The increased demand for cash crops mainly kava has seen an increase in the need to purchase food and foodstuffs and necessarily contributes to people's livelihood choices and contributes to relatively rapid changes in land use. The popularity of growing cash crops like kava has increased even in the remoter, highland areas of places on Vanua Levu and on Taveuni. The widespread expansion of kava and combination of kava and taro (for cash) has seen quite dramatic loss of upland forest in a very short period of time and includes encroachment into Forest Reserves and the Protected Area on Taveuni. There are a number of livelihood factors behind these decisions; including risk aversion due to the expectations of cyclones "money now", and the use of contract farming.

Figure 3.5 Forest degradation related to kava and taro crop production

Farmers have switched from subsistence crops to more extensive areas of kava planting Taveuni	Ring barking of natural forest is a common practice. In the early years the trees provides cover for the young kava crop. The forest cover is then gradually removed. Taveuni.

c) Agroforestry and agricultural crops

The agriculture of Fiji is quite diverse and is highly dependent on location local climate and soil types. The alluvial sandy loams and sandy soils of the alluvial flats and colluvial areas have relatively high fertility when drained. The humic latosols that predominate in the upland areas are characterized by stony clay, stony sandy clay, and stony silt to 60 cm in depth. Although prone to erosion, these soils have relatively high fertility and are particularly suited for short-term root cropping, yaqona (kava) production, or long-term tree cropping. (Groom and Associates 1981)

i) Agroforestry

Opportunities for agroforestry arise from: a large number of useful tree species (including high-quality timber species) and food crop species. Agroforestry is particularly significant and there are relatively dense groves of mature trees found around the boundaries of villages and include a wide range of cultivated trees and easy accessibility. Important species are mangoes, sweet oranges, mandarin oranges, rough lemon, breadfruit, jackfruit, coconut, bananas and plantains, Tahitian chestnut (*Inocarpus fagifer*), oceanic lychee (*Pometia* pinnate), coral tree (*Erythrina* variegate), and *Cordyline terminalis*, along with other trees of medicinal or spiritual importance, such as those used in ceremonial garlands or for scenting coconut oil.

Various agroforestry benefits are recognised—notable examples include increased national self-sufficiency in timber and fuelwood, higher nutritional status of the population, watershed protection, improved utilisation of degraded and marginalised cropping land, strengthening of agricultural infrastructure, genetic conservation, carbon capture, and improved wildlife habitat and landscape amenity.[64]

[64] Promoting sustainable agriculture and agroforestry to replace unproductive land use in Fiji and Vanuatu ACIAR Monograph MN191; Editors Harrision S & Md Saiful Karim (2016) Australian Centre for International Agricultural Research (ACIAR)

ii) Important crops

Basic food crop include mixtures of taro and yams. Important agroforestry crops include bananas and plantains (*Musa cultivars*), kava, (*Piper methysticum*), hibiscus (*Hibiscus manihot*), *Citrus* species, breadfruit (*Artocarpus altilis*), duruka (*Saccharum edule*), sugarcane, papaya, coconut, Malay or mountain apple (*Syzygium malaccense*), Polynesian viapple (*Spondias dulcis*), soursop (*Annona muricata*), vutu kana (*Barringtoniaedulis*), guava (*Psidium gunjava*), cocoa (Theabroma *cacao*), jackfruit (*Artocarpus heterophyllus*), two palms (*Veitchia joannis* and *Pritchardia pacifica*), now found more often growing wild, and waciwaci (*Sterculia vitiensis*).

Box 3.1 Sugarcane in Fiji

In active garden areas, these species are generally found interspersed with the dominant staple food crops in both upland and alluvial lowland and river terrace gardens, as well as remaining there throughout fallow periods, which traditionally ranged from 5 to 15 years, with cropping periods of 2-7 years. Correspondingly longer cropping periods and shorter fallow periods are characteristic on the richer alluvial and colluvial soils nearer the villages. Although burning of debris cleared from new garden patches is practiced widely in Fiji, including Namosi, the practice has been traditionally discouraged at Matainasau because it was believed to have deleterious effects on soil and arboreal regeneration.

Sugarcane in Fiji

Western Viti Levu has a history as an important sugarcane-growing area the extended dry period limits the range of trees species and crops which can be grown relative to the wetter eastern side of Viti Levu, the land in the north near Ra being an intermediate zone climatically. Much of the area in western Viti Levu is deforested and low-quality grassland is found on the more sloping areas. Sugarcane fields are sometimes burnt before harvest, and fire is used for various other purposes. The spread of fire is aggravated by the presence of large areas of low-productivity grasses. Regular burning causes loss of organic matter, soil erosion, and deterioration in soil.

The sugarcane yield in Fiji has been declining for some time due to a range of factors including the uncertainty over the renewal of sugarcane leases and declining land quality. A major cause of the decline in land quality is land degradation, in particular, soil erosion. Attempts have been made to quantify the economic cost of soil degradation to cane farmers and the sugar industry. The cost of soil erosion to farmers was estimated at US$8 million per annum, while the industry loses US$12 million in sugar sales per annum. Land degradation could be minimised by discouraging the current practice of burning of cane. Although this practice has some advantages such as facilitating the removal of weeds and destruction of pests, it also contributes to CO_2 emissions and causes rapid loss of soil nutrients, soil erosion, and a deterioration of soil quality. Action to reduce soil erosion will yield significant economic benefits to the country. 3 mills Lautoka, Ba and Labasa contributes 1.7%of the GDP and 9.5% of the exports in 2017

In the upland garden areas, taro and *cassava* are the dominant ground crops. Taro is generally planted after clearing and is intercropped with kava as a co-dominant crop. Cassava is planted next, sometimes up to three or more times in succession. Less common crops or intercrops in these gardens include yams (*Dioscorea alata*), wild yams (D. *nummularia*) (which are both cultivated and grow wild in fallow and secondary forest areas), tannia (*Xanthosoma sagittifolium*), giant taro (*Alocasia macrorrhiza*), and giant swamp taro (*Cyrtosperma chamissonis*), which is occasionally found growing wild, although probably originally planted, along small streams and poorlydrained areas bordering the garden areas. One factor responsible for decreasing fallow periods and increasing cropping periods and associated agrodeforestation has been the propensity of Fijians to abandon more labour intensive traditional crops, such as yams and taro, in favour of cassava, which is less often intercropped and which requires little or no fallow between successive plantings (Thaman and Thomas 1982, 1985).

Rural Fijians tend to have several sources of livelihood; most households have a wage earner, but also grow both food and cash crops, and many earn some income from fishing. In the wet areas, the main food and cash crops are coconuts, ginger, cassava, taro, kava, bananas and breadfruit. The most common livestock are poultry, pigs and cattle, including some dairy cattle. In the areas with intermediate rainfall, vegetables, cocoa, passion-fruit and maize predominate, and there are also other crops including sorghum, tobacco, sweet and

Irish potatoes and turmeric. Farmers living in the dry areas plant rice, both upland and irrigated, and pulses like mung bean and pigeon pea, as well as yams, citrus fruit, pineapples and mangoes.

Fiji's other major cash crop is coconuts, which are grown on estates, as well as by smallholders. Over 40,000 households rely principally on coconut as a source of cash income, this mostly comes from the sale of copra, the dried coconut 'meat', from which edible oil is extracted.

Traditional knowledge is a key asset. Communities have extensive local knowledge on how to utilise the landscape, which forms a valuable asset for responding to climate change in Fiji (Janif et al. 2016; McMillen et al., 2014). Traditional knowledge enhances a community's adaptive capacity. However, community capacity is often constrained by a lack of physical capital to monitor landscape resources (e.g. boats/fishing grounds), disagreements between community members and leaders regarding landscape utilisation, limited influence over far-reaching landscape activities, and short-term livelihood needs leading to unsustainable exploitation of landscape resources.

iii) Minor crops

Other minor, but locally important crops that are also of considerable economic and subsistence importance is a range of other traditional and more recently introduced fruit-trees, found planted or protected. Traditional - possibly aboriginally introduced- trees that provide seasonal flushes of fruit for consumption and sale include the wi, Polynesian vi-apple or hog plum (*Spondias dulcis*), and the vutu kana (*Barringtonia edulis*). Of the recent introductions, *papaya* (*Carica papaya*) is particularly common and an excellent non-seasonal vitamin- and mineral-rich fruit; seremaia, or sour sop (*Annona muricata*), is common in gardens and around villages; and the uto ni Idia, or jakfruit (*Artocarpus heterophyllus*), is increasingly common. Guava is an important seasonal fruit, it is generally found growing wild, especially where livestock have been grazed, but is occasionally planted or protected in gardens or village areas. The mango, which are a post-European introduction to Fiji are important tree crops in the western division.

Box 3.2 The importance of kava

Kava (*Piper methysticum)*

Kava is consumed throughout the Pacific Ocean cultures of the people including people from Fiji, Vanuatu, Melanesia and Micronesia. For Fijians it is central to the culture and is referred to as 'wai ni vanua' (drink for the people). The price of kava has significantly increased from 2016 due in part to cyclone Winston and also because of the high demand in both the domestic and export markets (Naleba, 2017). There are 13 different recognized varieties of kava. The kava industry is a major contributor to Fiji's national economy with domestic production (92% by volume) valued at around FJD66 million per year benefiting over 21,000 kava farms (the crop has a very a good gross margin, the current market price depending on quality is FJD120 - FJD200 per kg) in 2015. Between 2010 and 2013 kava production grew by over 30% which doubled the earnings from FJD3.8 million to FJD7 million and exports nearly doubled again from FJD8.8million in 2015 to FJD15.7million in 2017. The stated government target is to reach the 1980's level of earnings of over FJD35 million per year. The crop has an increasing export market in USA, UK, Australia, NZ and most of Europe.

Kava in normally planted on slopes for better drainage and kept separately to taro which is also grown as a cash and food crop is planted in wetter areas. Young kava as planted as small cutting under the forest for shade and many of the surrounding shade trees are ring barked and left to die slowly. As the kava grows farmers remove the forest cover to reduce the shade until it is about a 8-12 months old when the remaining forest cover is mostly removed to let the kava have more sun. It is difficult to identify the kava crops under degraded forest in first year but as shade is removed the area becomes deforested. The kava roots are harvested anytime between 3-5 years and can weigh up to several kilos. At least 13 cultivars are recognized, although there is much inter-species diversity

After taro and kava the soils are normally exhausted and farmers plant cassava and move up the hill to new ground for the kava. In Taveuni the kava farms are accessible but it is also reported to be intensively grown on Vanua Levu, however, this is more difficult to assess as access to the kava fields is more difficult.

Kava provides higher returns to the grower, per unit of land, labour, and capital investment, than most alternative cash crops; it requires few outside inputs; its planting material is readily available and consists of parts of the plant not normally sold; it can be harvested or processed at any time; it is non-perishable and can be easily stored; and it is well-adapted to the environmental conditions and to the semi subsistence poly cultural shifting agroforestry system in Fiji.

iv) Land degradation

Evidence suggests that the problem of land degradation is worsening. Soil loss measurements by the Fiji Ministry of Agriculture, Sugar, and Land Resettlement indicate that the agricultural productive base in many sugarcane areas is declining at a rate well above what would be regarded as economically acceptable (Leslie and Ratukalou, 2002). The main form of land degradation is soil degradation, which occurs from widespread and indiscriminate burning - particularly, but not exclusively, in the sugarcane growing areas.

Other causes of soil degradation include deforestation, overgrazing, and expansion of sugarcane and other crops (e.g. dalo and yagona) on to marginal land (e.g. steep slopes). In a review of a variety of catchments in both the western (dry) and eastern (wet) side of Viti Levu, the IUCN estimated soil loss to be between 24 and 79 tons per hectare per annum, which is equivalent to a topsoil loss of 1.6-5.3mm per annum (IUCN, 1992).

A serious consequence of land degradation is that the impacts from natural disasters are becoming increasingly more acute, in particular, vulnerability to droughts and flooding. The cost of these natural disasters is conservatively estimated at an average of FJD20 million per annum (Swami, 2004).

Although this practice has some advantages such as facilitating the removal of weeds and destruction of pests, it also contributes to CO2 emissions and causes rapid loss of soil nutrients, soil erosion, and a deterioration of soil quality.

Re-growth on hillside that has not been subject any wildfires for 30 years	Opposite side of the valley where hills have been subject to frequent fires

Figure 3.6 Hillsides subjected to fire compared to hillsides not subject to fire for about 30yrs

v) Fire

As can be seen in **Figure 3.6** the hillside that has be left undisturbed as a good re-growth of various trees including some African Tulip trees which have worked as pioneer tree species in some of the valley. By contrast the hills across the valley that have been subject to regular wildfire burns remain in much the same condition of have little forest cover or regrowth. The pictures show the importance of trying to control the wild fires and also show the benefits of regrowth, in reducing the soil erosion and land degradation. In addition they also show that the African Tulip tree although an invasive species does provide some positive benefits in some circumstances due to its rapid growth it has acted as a pioneer species in the generation of forest cover on degraded grassland.

d) Non-timber forest products

Fiji has a wealth of fruit and nut trees that have potential for development for local and export markets, yet very little scientific work has been done on these important local species. There is considerable interest in Fiji in replanting these native species for both food security and livelihood benefits across the islands. These traditional species are well adapted and have multiple traditional uses. However, planting material is not generally available for planting on a semi-commercial scale and seedlings do not always grow true to type in cultivation.

Most notable among the wild foodstuffs are the wide diversity of wild yams, the most important species being *Dioscorea nummularia*, D. *pentaphylla*, and D. *bulbifera*, and ferns, mostly referred to as wata or ota, the most commonly consumed species being *Athyrium* spp., *Diplazium* spp., *Tectaria latifolia*, *Stenochlaena palustris*, and *Marattia smithii*.

"wild food products, number over 60 in the Namosi area alone. When the wide range of edible birds, frogs, snakes, grubs, insects, fishes, eels, freshwater prawns, and other foods that are found within agroforestry zones is included, the significance of wild food resources to mountain villages becomes obvious. Moreover, apart from being nutritionally important - particularly in the cases of some seasonally abundant fruits, nuts, wild yams, and wild greens - these wild products also constitute important low-capital in put, low-risk cash "crops" for seasonal sale at the Suva Municipal Market (Thaman 1976/77)."

NTFPs are a supplementary source of income for many families in the ER-P area[65], the presence of a particular NTFP does not necessarily mean that it has any commercial value. However, they are an important source of livelihood support even without sales since they have so many domestic purposes, from housing materials (roofing for example), to fencing, food and herbal medicines, and animal food. See Table 3.12 below.

Table 3.12 Some NTFPs collected and harvesting in the ER-P area

Product and unit	Common Name	Plant part used
Bambusa vulgaris	Bamboo	Drinking straws, baskets, mugs, used for local construction projects etc.
Agathis vitiensis	Fiji kauri	Resin—Glaze for pottery and may be lit as torch
Calophyllurn inophyllurn	Portia tree	Leaves and fruits—Medicine
Cocos nucifera	Coconut	Shells—Kava bowls, handicrafts, ornaments Husks—Sinnet
Cordia subcordata	Beach cordia	Stem—Wood carvings Branches—Wood carvings
Dicranopteris linearis		Resin—Used to start fires
Freycinetia arborea		Bark and leaves—Medicine
Garcinia pseudoguttifera		Fruit—Edible Leaves—Medicine Oil—Aromatic oil
Intsia bijuga	Borneo teak	Stem—Clubs, spatulas, kava bowls
Palaquium vitilevuense		Sap (latex)—Chewing gum
Pandanus thurstonii	Screw pine	Leaves—Mats and woven handicrafts, oil, lei, food, traditional medicine
Turrillia vitiensis		Stem, branches—Food bowls

Table note: This only an indicative list of the large number of NTFPs that are used in Fiji.

3.4.2 Summary of potential livelihood issues

The Fijian term for land, vanua, "has physical, social and cultural dimensions which are interrelated" (Ravuvu 1983, 70). These include the vegetation and animal life as well as the social and cultural system. It follows that all trees on a community's land are seen to be integral to the whole agricultural system and to human welfare.

[65] Problems and Prospects for Sustainable Forest Management in the Tropics: A Case Study of the villages of Navai Nasoqo of the Vanua Nasoqo, Nabobuco North Central Viti Levu; Semi Tikivili Duaibe 2017 University of the South Pacific; Non-timber Forest Products for Pacific Islands An Introductory Guide for Producers, K. M. Wilkinson and C. R. Elevitch, Agroforestry Guides for Pacific Islands no.3 (2000); Traditional Environmental Knowledge and Community- based Biodiversity Conservation in Fiji: Current Status and Priorities for its Protection and Utilisation, R. R. Thaman, Working paper no. 7 Geography Department USP, Suva, Fiji 2000.

Over 100 trees or tree-like species are found in the agroforestry systems of villages in Viti Levu; collectively they represent a resource of enormous economic, cultural, and ecological importance. These trees, along with the many other species found in surrounding forest stands, have been preserved as part of an integral agroforestry system for generations but are almost totally neglected by most present-day agricultural developers and researchers. Consequently, although the agroforestry systems of both villages remain relatively intact, recent pressures to encourage cash cropping of bananas, cocoa, kava, and root crops, and to develop commercial livestock grazing, have led to deforestation and agro-deforestation. The new generation of farmers, which has not been educated to see the long-term utility of integrated agroforestry, neglects the trees.

Based on the in depth qualitative consultations (section 2.1.3), with different communities, the topics related to REDD+ were discussed and the communities raised many issues related to livelihoods, these are summarised below in Table 3.13

Table 3.13 Summary of livelihoods issues and forest dependency

Major topic	What is at issue?	Relevance to REDD+	Applicable World Bank Safeguards
LIVELIHOODS			
Insecure livelihoods	Many areas are prone to natural disaster from cyclone, heavy rain flooding etc. and can impact on crop production. Land use planning should to be conducted for the local context and in a participatory way. Some of the ER-PD activities may not be appropriate i.e. substitution of kava crop for vanilla in some areas	Implications for local people's active involvement in REDD+ may be limited due to impacts from disasters and reduce both their chances to benefit i.e. a community's priority are likely to change after a local natural disaster and may diverge from REDD+	
Promoted agricultural intensification of some crops and system e.g. kava by the MOA	Emphasis on export cash crops such as kava and taro; agroforestry systems neglected and complicated	Possible negative implications for increasing forest cover.	OP4.04; OP4.09; OP4.36
Income from forestry is long term and may be limited	Remoter upland areas have some potential to earn more income from forestry, but this can be limited. Often the rotation period for logging is too short and or the logging plan is not based on a sustainable basis Little extension advice is available on SFM.	Choice of reduced impact logging followed by plantation and long rotations, access to forest areas or plantations potentially could be restricted	OP 4.12
Reliance on firewood	Most rural people (but also including at least some part of the populations of small rural towns) rely on firewood for heating/cooking. For the poor hhs, firewood can also be a source of cash income.	Excessive firewood collection from live trees may reduce regrowth of timber trees, thus reducing rate of natural regeneration. Implications for increasing forest cover. Access to forest areas or plantations could potentially be restricted	OP 4.12
NTFPs, importance of for supplementary income and/or subsistence.	Use of NTFP has importance for food security and cultural issues; not so important for cash income	Uncertain how the REDD+ program will support NTFPs	OP 4.12 OP 4.10
Insecure income from annual cash cropping	Many areas are prone to natural disaster; communities often cash	Possible negative implications for increasing forest cover, i.e. difficult to invest in long term	OP 4.12

Major topic	What is at issue?	Relevance to REDD+	Applicable World Bank Safeguards
	poor. Income earned from cutting sugarcane	forest slow growing spp. unless planning for next generation. Access to forests and plantations could be restricted	
Increase in annual cash crop incomes through intensification (some areas already have high levels of production such Sigatoka river valley and some farming in Nausori highland)	Few locations in ER-P upland areas where market integration exists at high enough level to promote intensification so that local communities would be convinced to use less land for agricultural production.	Considering poor market integration, limited extension services likelihood that this will not occur during the program implementation period	
REDD+ investment and performance-based payment system.	Unclear benefit system	Poor HHs unlikely to want to participate in schemes whereby their labour is not rewarded fairly quickly. Their need for cash to maintain livelihoods is too great. Risk that they will not be able to participate at all in REDD+ unless ODA provides activity-based payments and Program provides extension advice	OP 4.10
	REDD+ investment requirements are unclear – *ex post facto* subsidies.	If it is required that HHs have to make their own major investments in, for example, enrichment planting it will most likely exclude all cash poor families.	OP 4.10
General impact of market forces	With insecure livelihoods and limited alternatives people have little choice but to follow the agricultural product markets, especially when promoted by local buyers and authorities. There are opportunities for tree crops such as breadfruit and mangoes but value chains not understood	Some of the crops responding to market forces have negative impacts for forest cover, and biodiversity e.g. kava and taro.	OP 4.10 OP 4.36
Fires	Wildfire appear to be a major disincentive to establishing forestry and agroforestry, young plantations and seedlings can easily be lost to fires wiping out investments by a community	Integrated approach to forest seedling planting and fire management is required	
Degraded land	Rehabilitation of the extensive areas of degraded lands – these are mainly areas of grasslands and areas where sugarcane crops are poorly managed or where the land is marginal (mainly due to physical attributes such as steep slope lack of top soil or poor fertility)	Degraded land may have potential for use for biomass plantations	OP4.36
Land use planning	Unsustainable land-use planning and practices – use of steep slopes etc.	Enforcement/ regulations on land use – will regulations be followed (or enforced). Possible changes to agriculture and	OP 4.12

Major topic	What is at issue?	Relevance to REDD+	Applicable World Bank Safeguards
	Whether the GOF can establish a mechanism of enforcement to regulate unsustainable land-use planning and practices	potential to restrict access to some forests or plantations. Development of a communication strategy on legislation that addresses unsustainable land-use practices Potential FGRM and SG issue	

3.5 Land tenure

Land in Fiji is administered through three main types of land tenure see the following Table 3.14:

- iTaukei, or native land held under custom and iTaukei reserve land:
- Crown land (or state land); and
- Freehold land.

Table 3.14 Land by different tenure NLTB statistics 2019

Province	Freehold Land (ha)	State Land (ha)	Native Land (ha)	Native Land Leased (ha)	% of Native Land Leased	TOTAL (land by tenure ha)
Ba	10,323	34,525	203,505	77,706	38%	248,354
Bua	17,725	286	117,086	33,144	28%	135,097
Cakaudrove	50,512	4,483	216,454	22,711	10%	271,449
Kadavu	1,717	51.05	45,328	2,188	5%	47,096
Lau	4,490	315.65	44,933	1,133	3%	49,738
Lomaiviti	5,583	678	29,903	2,551	9%	36,164
Macuata	12,595	4,054	178,230	67,475	38%	194,880
Nadroga/Navosa	6,205	3,752	206,578	45,236	22%	216,536
Naitisiri	7,343	4,290	144,414	21,000	15%	156,047
Namosi	386	11,241	52,894	3,945	7%	64,521
Ra	5,815	2,145	98,682	29,289	30%	106,642
Rewa	2,661	344	21,380	1,483	7%	24,385
Serua	12,297	98.62	45,303	28,553	63%	57,699
Tailevu	4,437	1,364	86,434	23,059	27%	92,234
TOTAL	142,089	67,628	1,491,125	359,473		1,770,842

Table note: Native Land leased does not include Timber Concession's which makes up an approximate area of 270,759 hectares.

The key difference between iTaukei land and other land types is its inalienability. iTaukei land cannot be sold, transferred, mortgaged or otherwise encumbered. Land under this category can be leased long term for a maximum of 99 years for commercial purposes. From the NLTB there are 31,8820 leases on record for all of Fiji[66]. However, not all landowning units have lands that are currently leased. Remote islands and interior parts of the main islands are notable exceptions. Similarly, agriculture leases have maximum tenure of 50

[66] NLTB Statistics 2019; Situational Analysis Report Delivery 3 April (2017) (from the Land Tenure Report) USP.

years. Crown land also cannot be bought or sold. An important issue for iTaukei land, a portion of each area is set aside for a village site where the community builds its houses. The remainder is reserve land that can be developed by the community or can be made available to others through leasing arrangements. Part of land available to villages may not usable and in some villages the best land may have been leased to a range of ventures from resorts to large commercial farms as well as non-iTaukei smallholders.

Customary rights

Customary rights are legal land rights and are inconsistently treated under current leasing arrangements. Evidence suggests that legal land rights borne out of the customary property register are treated with different value considerations within the legal framework of the leasing regime in Fiji. Currently, customary landowning units' revenue is capped by legislative sanction to avail land resources at no more than 6% of the unimproved capital value in all agricultural leases. This valuation methodology not only undermines the operation of market forces in a situation of willing seller-willing buyer consensus, but is fundamentally flawed. Further, its operationalisation, by implication, perpetuates inequality as other land typologies are priced comparatively higher. iTaukei land ownership is very strongly held and both enshrined in law and custom. Possibility that rationale and reasonable land use policies, plans and restrictions of Government will be ignored by land owners.

Rights to Forest

Reservation of ownership to standing forest and products is implicit in all TLTB leases. Herein, forest base carbon credits as a product, are clarified by association to standing trees.

Crown Land

The ER-PD suggests that activities are not proposed to take place on Crown Land

About 88% of land in Fiji is owned by iTaukei through their mataqali (clan) and is termed native or iTaukei land, iTaukei have a right to share in the lands belonging to their family or mataqali even when they have moved away from the village.

Of the remainder, about 8.06% is freehold and 8.12% is government owned. Native land is communally owned and cannot be bought or sold except to the state for public purpose. The iTaukei Land Trust Board (TLTB) is a statutory body with responsibility to administer, develop and manage this land on behalf of its owners, and for their benefit, according to the Native Land Trust Board Act. The TLTB identifies the land required for use by iTaukei communities and makes the remainder available for leasing. The TLTB, not the actual owners, issues legally binding leases or land use agreements, as to whether the land can be used for agricultural, commercial, industrial or other purposes.

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.

Non- iTaukei farmers have traditionally leased land for sugarcane production, but as the sugarcane industry has slowed, and leases have come up for renewal, many of these households have lost access to this land.

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, 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. Reserve land is not leased but reserved by *Mataqali* or government for future use.

a) Constitutional provisions of Fiji

The Constitution includes specific provisions recognising the indigenous people and their ownership of customary land and relating to protection of the environment. Specifically, the preamble states that:

"We, the people of Fiji, recognising the indigenous people or the iTaukei, their ownership of iTaukei lands, their unique culture, customs, traditions and language; recognising the indigenous people or the Rotuman from the island of Rotuma, their ownership of Rotuman lands, their unique culture, customs, traditions and language..."

The Constitution includes a bill of rights, which includes rights of ownership and protection of iTaukei, Rotuman and Banaban lands (Article 28), a right to the protection of ownership and interests in land (Article 29) and environmental rights (Article 40). Article 40(1) provides that "[e]very person has the right to a clean and healthy environment, which includes the right to have the natural world protected for the benefit of present and future generations through legislative and other measures".

b) 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 in a position to allocate forestry land. Forestry land belongs to the Mataqali and only the Mataqali can allocate forest land to non-Mataqali members. To date there are few instances of these communities allocating forest land to other users although at present there are a number of proposals to allocate forest land in the form of concessions to concessionaires who agree to sustainably log forests in accordance with Fiji's 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. 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.

Timber extraction aka logging for commercial purposes 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 and 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) by Fletcher Timber and logging of indigenous species ended in in 1998 when the Amur Dayal Logging Company ceased operation. These companies logged 24/7 during the dry season and constructed roads to upland villages where in the past they did not exist (one of the putative advantages 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 (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). 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, However, logging on non-indigenous species began in 1983 with the commencement of logging operations by Fiji Pine Limited, but of course by this time the archetypal village ceased to largely exist as a traditional social unit even if physically there appeared to be few differences: the immediate landscapes of villages remained the same but sociologically they were in transition even if not depicted as such in stereotyped images of Fijian rural villages..

Subsistence logging by way of contrast 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.

Based on village-level consultations undertaken in July and August 2018 it appears that the social costs of logging on the cohesiveness of local communities has 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.

c) Customary forest rights

Land and resources are owned by the entire community. They can be used by all community members who are treated equally in terms of the use of the community land. No person may sell or transfer forest land to outsiders. The supreme owners of the land and resources are invisible supernatural beings. All land users must respect these beings who govern the land and all it contains. Those who pollute the land by breaking customary rules are penalized and are required to apologize to those beings to avoid collective punishment of the entire community.

d) Public sector resources to promote land security

Cadastral surveys cover most of the commercialized urban and peri-urban areas. Historically surveys have are not been vigorously pursued in most other regions rural areas. The verification of boundaries and the resultant improvement in ownership security is thus totally dependent on public sector land surveying, which is a function of public budgets. All customary land in the ER accounting area has been recorded 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 cadastral surveys to facilitate the issue of land lease titles. Although the land in rural areas may not have a cadastral survey, the boundary is normally registered under the RTL followoing field marks (cairns) and landmarks such as rivers, ridges etc.. In the context of the ER-P, it is anticipated that 100% of the land in the ER accounting area will registered either under iTaukei register, Crown Land or Freehold. All land in Fiji are registered, there are no unregistered land.

To consider the role of property rights in general and land rights in particular, it is important to place these rights in the context of the overall institutional structure of the society and economy. There is the potential for a lack of congruence within state institutions although the formal legal system may provide for alien-ability, the transfer of land to persons including from transfer from one community to another this may represent a deviation from some cultural norms. Similarly, although the constitution makes provisions for private property rights and the formal laws establishing such rights, the corresponding registration and enforcement mechanisms may be weak or even largely absent away from the urban areas.

3.5.2 Land tenure security

a) Customary land

Once an iTaukei lease is registered with the Registrar of Titles, the land status changes from an initial instrument of title to a registered lease status. At registration, the subject land is offered all the protection of a common law lease, ensuring long-term certainty that is requisite in any commercial undertaking. It is therefore a suitable legal vehicle to all intents and purpose. Operationally, all protection offered by common lease is attainable on an iTaukei land lease once it is registered. REDD+ activities on iTaukei land will require formalisation of title through registered leases in order to gain security and long-term viability of the project. The valuation formula used is often based on a simple unimproved capital value, rental basis that may neither adequately reflects the loss of access to the land for the rental period nor the ownership of improvements at lease expiration. This situation can lead to contest hearings at the expiry of the lease with the land reverting to landowners, but with no clarity as to who owns the buildings and other remaining improvements on it.

The administration and control of iTaukei land is also subject to other Laws that may act in the national interest. Most notable is mining activities, such as prospecting licences issued under the Mining Act, Chap 146 s.3 this provides for an over- riding national interest to allow prospecting for minerals

Insecurity of land tenure can act as a disincentive to farmers to make a shift towards more sustainable agricultural practices, as these may require a long-term investment, such as the maximum 30 year lease period of ALTA.

One of the more important relevant issues for REDD+ and the safeguards is land tenure security. Formal tenure in Fiji is legally very secure when completed and the title is registered, complications arise (with the land and garden land) when cadastral surveys are completed at different time in some areas, or not at all in others. Similarly modern cadastral survey accuracy is much improved over early chain and compass survey work which may be the basis of some of older cadastral records, and some were not even surveyed but were based on the agreement of the sighting of a some cairns. There is, however, no accurate estimate for the level of disputes in the 11 ER-P provinces, but anecdotal evidence gleaned during the SESA suggest there are significantly more land disputes than has been stated at the national level. However, it is stated by local informants that when Tokatoka, Mataqali, Yavusa and Vanua there are vigorous attempts to resolve these conflicts and Fiji unlike other Melanesian societies such as Papua New Guinea and Solomon Islands does not have a record of violence for the most part in resolving these conflicts.

b) Crown land

Crown land is administered under the Ministry of Lands. Leasing of crown land is facilitated by way of application to the Director of Lands. Consideration of application and processing time is comparatively shorter than for iTaukei lands. A distinct advantage of opting for a crown lease is the streamlined process of its facilitation. This is, however, secondary, contingent to land availability. It is noteworthy that the interplay of market considerations may feature strongly. Short supply means increased competition from other end users, thus causing prices to rise.

c) Freehold land

Freehold land is the most complete interest that can be held and is understandably sought after, given its embedded security. In practice it means the outright ownership of land or property for an unlimited period. A person who owns the freehold interest in a property may grant a lease on it to another person. This creates

a relationship of landlord and tenant (or lessor and lessee). The lease can be a specific and lengthy, written, legal document based on property and contractual law, which sets out the rights and obligations of both the landlord (lessor) and tenant (lessee).

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3.5.3 The Land Bank

The Land Bank exists under Land Use Decree, which came into effect in July 2010. Its primary purpose is making more land available on long tenure to provide livelihoods for all parties concerned. The decree establishes the Land Use Unit (LUU) within the Ministry of Lands, as a new regime for leasing iTaukei land. By existence, the Land Bank offers competition to the TLTB.

3.5.4 Land Use Planning

There is a strong possibility that rationale and reasonable land use policies, plans and restrictions of Government will be ignored by land owners. There is limited experience in Government with the types of integrated planning expected for REDD+ combined with assessment of natural resources.

3.5.5 Unused land

Fieldwork in western Viti Levu, Fiji reveals that substantial area of land is underutilised, including in the sugarcane belt. Concern sometimes expressed that iTaukei land can be leased for development if not being 'used', and/or this can be overridden for mining developments.

3.5.6 Summary of land issues, including forest land allocation

In Table 3.15 below some of the major issues related to land are summarized and presented along with their REDD+ relevance, and some potential solutions and a brief statement of which World Bank safeguards are applicable in each case.

Table 3.15 Summary of land issues

Major topic	What is at issue?	Relevance to REDD+	Applicable World Bank Safeguards
LAND, Agricultural and Forestry in the Uplands, including Tenure Security and Conflicts			
Insecurity of land tenure (may affect lease holders and informal land users)	The relative short term nature of some leases based on customary land; alternative is to invest on freehold land or state land but this area is limited Fiji has a comprehensive legal and regulatory framework for land management and indigenous land rights, but suitability and long-term legal security of REDD+ activities require further analysis. Some leases on state land take considerable time to be renewed – leading to insecurity. The Agricultural Land and Tenant Act (ALTA), 1976 (Cap. 270) – short term leases	Has potential to hinder long term investment in agricultural, agro-forestry and forestry activities	
Lack of national land-use policy or a national land-use plan	GOF sees that lack of national land use plan as a constraint on development process	Need for a coordinated approach to land-use planning.	

Major topic	What is at issue?	Relevance to REDD+	Applicable World Bank Safeguards
Enforcement of regulations that combat unsustainable land-use practices	Unsustainable land-use planning and practices – use of steep slopes etc. Whether the GOF can establish a mechanism of enforcement to regulate unsustainable land-use planning and practices	Enforcement/ regulations on land use – will regulations be followed (or enforced). Possible changes to agriculture and potential to restrict access to some forests or plantations. Development of a communication strategy on legislation that addresses unsustainable land-use practices Potential FGRM and SG issue	OP4.12; OP4.10
Land (use) conflicts a)	Large areas of forest are owned through customary ownership. More recently some areas have been allocated as PAs however, tenure is of these tracts of forest land is still under traditional forest owners/users and/or their customary usages and management practices are often viewed flexibly Unsettled conflicts may cause difficulties in three ways: 1) May lead local communities to encroach on forestland they still consider theirs; 2) May thwart BSMs as there is little trust between forest owners; 3) government may act to large forest owners to restrict or control local people's access to forest resources. The current TLTB consultation process does not fully meet international free prior and informed consent (FPIC) standards, such as full participation from all rights holders, including women 60% of the Matagali are required for a decision	Possible restricted access; Promote collaborative management approaches and use of BSMs.	OP4.10; OP4.12
b)	The demarcation of forest owners' lands may not have been correctly done, not involving local communities, and not shown correctly with boundary markers or may be of low accuracy. Also people may reliably know the boundaries.	Possible restricted access; promote collaborative management approaches and use of BSM	OP4.10 OP4.12
c)	Mangroves are outside the purview of the customary land tenure system but are important for users' livelihoods but as with forest land there are some issues with conflicting claims to use of the mangroves that need to be resolved.	Possible restricted assess; promote collaborative management approaches and use of BSM. Mangroves are a priority climate adaptation action issue and the ER-P should promote the protection, management, expansion and monitoring of mangroves	OP4.10; OP4.12

Major topic	What is at issue?	Relevance to REDD+	Applicable World Bank Safeguards
Losses of land, agricultural and forest, especially from infrastructure projects.	Infrastructure projects continue to cause small local problems and may be locally important particularly for rural forest dependent people living in proximity to HPPs (in upland areas). Increases risk of forest degradation and deforestation as use other areas for aeroculture Dissatisfaction may continue for many years after initial displacement particularly if a cascade is planned and little or land and no cumulative impacts studies have been undertaken. Following TLTB 60% of the Matagali are required for a decision on land use this leaves potential dissatisfaction[67].	Not a REDD+ caused displacement of people, but in limited areas will have potential for knock-on effects of deforestation and degradation drivers.	OP 4.12
Administrative burden	A disadvantage lies in the processing time and negotiation of a lease, given the imprecise definition surrounding the successful translation of what REDD+ carbon credits entail as property, their precise legal characterisation and their fundamental economics in terms of revenue.	Time taken and availability of land REDD+ activities on iTaukei land will require formalisation of title through registered leases in order to gain security and long-term viability of the project.	
Protected areas	Fiji does not have stand-alone legislation covering protected areas.	A number of options are available but clear legislation would help	
Access and collection of NTFPs	The current Forest Decree protection measures prohibit collection of NTFPs customary hunting and fishing rights - A licence is required to undertake these activities	The practicalities are somewhat different	
Carbon rights	Fiji's current legal framework does not define carbon rights		

a) Potential to benefit from forest land allocation as a subset of land issues

The following Table 3.16 summarises issues raised and discussed during field trips to the ER-P region's three main islands (Viti Levu, Vanua Levu and Taveuni).

Table 3.16 Summary of local communities' potential to benefit from forest land

Major topic	What is at issue?	Relevance to REDD+	Safeguards as applicable
POTENTIAL TO BENEFIT from areas of forest land, or areas that potentially in the future will zoned as forestry or watershed protection or similar			

[67] Recent Changes in the Upland Watershed Forest of Monasavu, A Cloud Forest Site along the PABITRA Gateway Transect on Viti Levu, Fiji. Pacific Science (2005), vol. 59, no. 2:159–163; Fiji Electricity Authority 2017 Annual Report; Word Small Hydropower Development Report 2016 UNDIO; Fiji's Hydro Potential Report Volume 1 2009 Fiji Department of Energy; Namosi Villagers Against Hydro Dam Project Fiji Sun March 2919; Namosi Hydro talks: Land portions will be permanently inundated EIS Fiji Times March 2019; See also Sections 3.2.4 and 4.7

Major topic	What is at issue?	Relevance to REDD+	Safeguards as applicable
Forest type and agricultural land use planning in the uplands.	Potential change of land use planning and forest types reduce use of steep slopes – but may be difficult in some areas i.e. communities may not be able to keep to the zones on the land use plan and maintain secure livelihoods – i.e. there are many instances where very steep land is used for agricultural purposes often greater than 25^0 to 30^0	Expansion of forest types has the potential to impact on REDD+ and communities an RPF may need to be prepared to safeguard people	OP 4.12 Involuntary Resettlement – reduced access to land currently used by the households; OP 4.36 Forest - activities affecting management, protection, or utilization of natural forests or plantations
Statutory issues related to timber harvest	Logging should be in compliance with the FFHCOP	People may perceive more benefit from cutting trees and to use the land after logging or agricultural purposes.	OP 4.36 Forest - activities affecting management, protection, or utilization of natural forests or plantations OP 4.12
Access to forest land and NTFPs Forestry Decree 1992	Owners may not be able to legally access forest land for NTFPs that they have previously owned if this becomes a Forest Reserve or a protected Area under the Forestry Decree 1992 However, the Decree does allow for a Licence and it is envisaged that there should be voluntary agreement with a Matagali to a agree the reserve or PA and the assumption is that this would include adequate "benefit-sharing" between local communities who may still depend on the forest for various forest products, whether timber or NTFPs. Forest Decree due to be replaced by the Forestry Bill 2016	Inappropriate forest protection and lack of monitoring may result in poor forest protection or encroachment. People use the forest irrespective of the legality or a requirement for a Licence	OP 4.36 as above; OP 4.12
Fiji Pine Ltd. Pine Plantations on Viti Levu	Access to leased pine plantations has changed following the Draft Planted Forestry Policy Statement Fiji 2015 the guiding principles 4.3.2 states that "no natural forest or minor forest produce will be harvested, removed or damaged in the development of new plantations with Fiji Pine Limited lease areas. Pubic advised that under no circumstance shall there be any logging removal or exploitation of minor forest products within the Fiji Pine lease area	Legal status of the notices and exclusion is unclear as the notices refer only to a Draft Policy Statement	Possible OP 4.12 Involuntary Resettlement – reduced access to land currently used by the households

Major topic	What is at issue?	Relevance to REDD+	Safeguards as applicable
TLTB	Land Development Vetting Committee (LDVC) iTaukei Land Trust Act (1940) Regulations under this Act include the following: Native Land (Forest) Regulations	Statutory body that administers native-owned resources and negotiates with land owners, this can include access to and use of forest and TLTB can agree compensation issues for loss of access or use etc.	
Land and Water Resources Management Bill 2016	Access to watershed or catchments to cut trees or use the land can be restricted	Protection of watershed and catchments	

3.6 Relevant gender issues in the Emission Reduction Program area

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 and the 2015 National Gender Action Plan. International conventions on Gender that the GoF has signed up to are identified in the following **Table 3.17**.

There are continuing concerns that the majority of Fijian women are uninformed of their legal rights and so effectively barred from claiming, exercising and protecting those rights. The exclusion of Fijian women from decision-making mechanisms and processes at all levels has been a continuing concern for women's groups.

Table 3.17 International conventions and national policy with gender dimension

Commitment	Date	Gender Related Guidance on Convention or National policy
Convention to Eliminate Discrimination against Women (CEDAW 1979, UN)	1995	Articles address gender equity and non-discrimination in areas such as education employment marriage health finances and decision making CEDAW establishes international endorsed norms and standards for women's human right
Convention the rights of the Child	1993	Addresses gender equality directly by recognizing that girls are often discriminated against more than boys. Stes standards against harmful practices such as denial of girls rights to education early marriage and female genital mutilation
Convention on the rights of persons with disabilities	Signed 2010	The convention recognizes that women and girls are subject to multiple discriminations including in health education access to services and mobility,
ILO Equal Remuneration Convention (No. 100)	2002	Convention is to ensure equal remuneration for male and female workers for work of equal value. Provides definitions and explanations on what constitutes equal work and gender discrimination
ILO Discrimination in Employment and Occupation Conventions (No.111)	2002	Convention prohibits discrimination o the grounds of sex including discrimination based on maternity and family responsibility. Convention also extend to prohibition of sexual harassment in the workplace
Millennium Development Goal (MDG) to Promote gender equality and empower women.	2000	To eliminate gender disparity in primary and secondary education by 2005, and in all levels of education by 2015.
National Gender Policy[68]	March 2014	The overall goal of this policy is to promote gender equity, equality, social justice and sustainable development in the Republic of Fiji:

[68] Fiji National Gender Policy, Ministry of Social Welfare Women and Poverty Alleviation (2014).

Commitment	Date	Gender Related Guidance on Convention or National policy
		-Improve the quality of life of men, women, boys and girls, at all levels of society through the promotion of gender equity and equality. -Reinforce the inextricable links between gender equality and sustainable development goals in national development. -Promote active and visible gender mainstreaming in all sectors and within civil society to ensure agency for gender equity and equality in all spheres of national life. -Remove all forms of gender inequality and gender discrimination in Fiji.

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 have been moves 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 Ministry of Forestry and other ministries).

But in spite of this 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 labour force compared to 82% of men. Yet here it is also important to understand the informal sector and during SESA consultations it has been found women are actively engaged in the informal sector, especially in rural areas. What is seen in larger cities such as Nadi, Suva, Lautoka and Lambasa is not necessarily a reflection of the economic reality for all women and their families. However, for women participating in the labour 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 also to receive leasehold and logging royalties alongside men. Although as the Section on Land Tenure in this SESA Section 3.5 indicates women often have little or no control over such customary land and for Indo-Fijian women whose household is using leased land from the iTaukei it is their husband, father, uncle or older brother who controls the lease: such leases are not a joint lease-holding between marital spouses.

In most of the iTaukei communities, women are involved in collecting NTFPs (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 "expatriates") appear to be more innovative than older women who have resided for longer periods in the village. It is these "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.

A further issue that will need to be resolved is that women from other Mataqali land-owning groups have rights to rental payments for leasing land and royalty payments from their 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. As the Section on Land Tenure in the SESA Section 3.5 further demonstrates the linkage between ownership, access and control of land and possible benefit sharing arrangements appears to put many women at a distinct disadvantage vis-à-vis men and the ER-P will need to address this structural issue.

However, in reality the gender division of labour is not really pronounced except in the areas of hunting in the forests and logging. Men claim they undertake the physically more 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 fishing – with the exception of fishing in coastal mangrove communities – women are more likely to spend time fishing than men. It could be argued that in many respects most of the gender-productive roles outside of the domestic sphere are quite complementary.

Women are largely rendered 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). There are of course exceptions to the rule as there are local Village Women's Associations in many villages that do focus on women's reproductive health, schooling for their children and economic empowerment. However, in general women in the ER-P villages are at a disadvantage on both structural and cultural grounds.

During the SESA facilitators had to work very hard to ensure 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 Ministry of Forestry 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.

Under the National Gender Policy (Ministry of Women, 2014), GoF has committed itself to strengthen the position of women in agriculture, rural development and the environment. Inter alia this involves commitments to ensure the increased participation of women at all levels of decision making, to train men and women to understand the need for an equitable gender division of labour, to support the economic empowerment of women in the agriculture sector and to support women's access to factors of agricultural production including access to land and financial services.

The Constitution

Overall, the quantitative survey data indicate that the poor and women are structurally disadvantaged in the ER-P area in that they have less access to land and information, and most probably formal credit.

a) Women and land rights and forest use

This has especially serious implications for female-headed households which are generally (and were identified to the SESA team) among the poorest in the villages visited. Theoretically iTaueki women via their

maternal Tokatoka are customary landowners and are entitled to the same benefits (such as access to lease payments) as male members of their Tokatoka but because of the patrilineal nature of the iTaueki kinship system on leaving the village they defacto relinquish their rights to benefit from the customary land. They are expected to benefit because any children they bear in the post-marital Tokatoka are entitled to become members of the land-owning mataqali. This sounds fine in principle but women do not ipso facto have the control over how this customary land is utilized or even whether or not they can access this land. Of course, in practice more iTaukei women can access and use some of the land but for the ER-P as will be reflected in the GAP this does not mean the mataqali has to accord them equal status alongside male members of the mataqali.

b) Limited Access to Information

Women irrespective of their ethnicity unless they are close to the Turaga ni koro or Turaga iTaukei or are very well educated and very active either in local church groups or the Tokatoka Women's Group have very limited access to information. For the most part what information they have access to especially information relevant to the ER-P or similar is mediated by males at the village or mataqali level. Perhaps the most inhibiting reason is that formal information dissemination sessions and discussions during village and mataqali meetings exclude women. It is not simply a "male conspiracy" to exclude women but most local male leaders do not consider it important that women be directly exposed to information from external sources and cite tradition to argue women know their "place" in society. However, it is not the ER-P per se that is the extant issue but rather even though women have a good knowledge of the forests and mangroves they do not necessarily have a good understanding of how to grow horticultural crops, raise livestock and increase quality, yields and revenues. There are few outreach services targeted at women and this also applies to forestry-based livelihood activities. The SESA found that women – and this includes non-iTaukei women – are not exposed to trading intermediaries to the extent possible that understand markets better than themselves except where they are quite active themselves.

c) Access to Finance

Non-iTaueki women have major problems accessing finance because leases are mostly in the name of men collateral-based access to finance relies on men to make such an application. Where both women and men have discussed the need for finance this is not a problem but legally a male leaseholder can apply for finance and does not need to demonstrate to the financial services provider that he has secured the agreement of his wife. iTaukei women or men cannot use communal land as collateral to secure finance and this even applies to land allocated to the Tokatoka by the mataqali because it is an informal agreement and not supported by documentary evidence. This follows the maxim that customary land cannot legally be alienated by individuals. Would the ER-P be able to assist either iTaukei or non-iTaueki women the answer is probably no.

3.7 Overview of policy legal and administrative frameworks

3.7.1 Customary iTaukei Law

Fiji continues to operate under a traditional iTaukei system of law and governance in addition to the western elements of law. The cession of Fiji to Britain in 1874 resulted in the Crown taking ownership over some natural resources, which included marine resources due to the common law doctrine of public trust.

Customary owners retained customary ownership over land, but over marine resources, they have only restricted customary rights. The Constitution recognizes customary ownership over iTaukei, Banaban and Rotuma land (Articles 28-29). A number of statutes have been passed to support the iTaukei system of law, including the following:

iTaukei Affairs Act (otherwise known as the Fijian Affairs Act (Chapter 120))

- Sections 3-9 Establishes a Great Council of Chiefs, a Fijian Affairs Board and a system of Provincial.
- Section 7 Provincial Councils have the power to make "by-laws for the health, welfare and good government of ... Fijians residing in or being members of the community of the province".

- Sections 16, Establishes Tikina courts and provincial courts.

iTaukei Lands Act (otherwise known as the Native Lands Act 1905 (Chapter 133))

The iTaukei Lands Act supports the Constitutional recognition of the customary ownership of land. Section 3 provides that "native lands shall be held by native Fijians according to native custom as evidenced by usage and tradition". In addition, section 4 establishes a Native Lands Commission to resolve disputes about land ownership. Various by-laws have been made under this Act.

iTaukei Lands Trust Act (otherwise known as the Native Land Trust Act 1940 (Chapter 134))

Section 4 of this Act establishes a Native Land Trust Board and vests it with the control of customary land "for the benefit of the Fijian owners". Section 7 stipulates that native land may only be alienated in accordance with the Act and subject to the provisions of the Crown Acquisition of Lands Act, the Forest Act, the Petroleum (Exploration and Exploitation) Act and the Mining Act. Regulations under this Act include the following:

- Native Land (Forest) Regulations; and
- Native Land Trust (Leases and Licences) Regulations.

iTaukei Trust Fund Act 2004 (otherwise known as the Fijians Trust Fund Act)

This Act establishes a trust fund for the benefit of Fijians and Rotumans in section 3, and a trust fund Board under section 7. This was amended in 2009 and 2012.

3.7.2 Policies and legislation

In this chapter overviews are provided of the institutional and policies laws and regulations (PLRs) frameworks governing the forest sector. This also includes a brief discussion of the FGRM. Some capacity and PLR gaps are highlighted. Some of the issues related to consultation processes for REDD+ are also highlighted in this chapter as they are highly affected by institutional and PLR frameworks a summary of issues includes:

- Land use planning is often non existent or a top down process and non participatory, integration between the sectors and prioritization remains challenging);
- The community forest aspect of the forest Decree/law is currently unclear, planning across sectors is challenging; and
- Environmental impacts assessment decisions at the national level give little provincial say, and similarly to land use planning, integration between the sectors and prioritization remains challenging.

3.7.3 Institutional framework governing the forestry sector in the ER-P area

Fiji's institutional framework governing the forestry sector is well established and with a presence from national to local levels. As in many countries it is obvious from the different factors and conditions that many of the drivers of deforestation and forest degradation arise from outside of the control or immediate management responsibility of the Ministry for Forestry. Lack of collaboration between and amongst GoF ministries, departments and NGOs remains an issue and at times, for example, where the conversion of forestry land to agricultural land occurs, the effective response should be cross sector, inter-departmental and coordinated. One that involves non-forestry related departments such as Ministry of Agriculture. A summary of institutional issues is shown in the following Table 3.18.

Table 3.18 Summary of institutional issues for REDD+

Major topic	What is at issue?	Relevance to REDD+	Safeguards as applicable
INSTITUTIONS			
Knowledge of REDD+	Unfamiliarity with all implications of REDD+ and the investments required Raise the level of public awareness of REDD+ themes and issues	Capacity expected to continue to be an issue, but need to continue awareness raising as little know about REDD+ in rural areas	
Lund Use Planning	A general lack of awareness concerning the provisions and regulations relating to land, land-use practices	Expectation of impact of land use planning is high but reality is that LUP are likely to take time and be difficult to implement particularly given the independence of Matagali	
Management of mangroves	Revitalise the management of mangroves which is a cross sector issue Include mangroves in the ER-PD	Important carbon sequestration and climate change issue	
Climate smart crops	The promotion of climate smart agriculture practices; Capacity building in climate resilient agricultural practices for rural communities	Differences between MOA idea of climate smart agriculture and what is proposed in the ER-PD which is orientated to crop substitution	
Divisional Forest Departments	The Forest Division is the only forest-related department with such broad outreach but it is often understaffed to undertake the tasks assigned. The Forest Division has a mandate for forest extension but it depends on the capacity of the forest rangers and workload. The required forest extension assistance to villagers is seldom forthcoming; with too few staff, participatory approaches by Forest Division with villagers are largely undoable.	This represents a considerable capacity gap, that may be challenge for REDD+ to address as performance based approach	OP 4.36
Compliance with the FFHCOP	Compliance mechanisms for forest logging It serves as a basis for environmentally sound, economically viable and safe operations	Better and safer logging and contributes to SFM and meeting CoC and FSC expectations	
Fiji FSC standard	Continue work on a national standard	FSC and chain of custody would help add value to wood products	
Monitoring and evaluation of forest resources	Support effective capacity in MOF for M&E and support independent monitoring and evaluation of sustainable forest management activities	Improved information state of forests and ecosystem	
Independent monitoring of protected areas and IBAs etc	NGOs and CSO already provide some independent monitoring of some PA, IBAs etc.	Information is generally already available from the NGOs	
Environment Management Act (2005)	Capacity to monitor and regulate implementation of EIAs and develop and	Mandatory environment impact assessments	

Major topic	What is at issue?	Relevance to REDD+	Safeguards as applicable
	manage cross sector linkages and deal with the management issues		
	EIA assessments for national projects, MOF not always involved in EIA studies, national interests overtake forestry issues	Loss of forest due to infrastructure	OP 4.36
Agriculture a)	Similar lack of capacity on forest and land use issues and cross sector links. Ability to provide agricultural/ forestry extension is limited, especially in remoter areas that require the most. Most extension is left to market forces.	As above capacity gap.	As above
b)	Extension for agriculture - fewer models to improve farming, with main emphasis on cash cropping for kava and taro export	Similar to above lack of extension represents a capacity gap and risk	
Fiji Pine and Fiji Hardwood	Forest companies managing mainly production forest. Relatively speaking, better staffed to protect the areas they manage, but generally face challenges monoculture of pine and mahogany often planted in natural forest Funding and market for hardwood can be very variable. PAs subject to disputes and boundary encroachment to varying degrees. Some difficulties in striking a good balance between control and co-management with core zone dwellers.	Companies expected to be important players on the REDD+ landscape, to avoid further degradation	OP4.01 OP 4.12 and OP 4.36
Valuation of ecosystem services	Develop guidelines for economic valuation of ecosystem services biodiversity – international approaches available	Provide an economic value and cost to biodiversity and ecosystem benefit	

3.7.4 Framework conditions for consultations

As part of the institutional, administrative and PLR framework in a country, it is also necessary to have a closer look at the potential to fulfil Carbon Fund requirements on consultations, especially consultations with local communities. An adequate level of consultations is an essential requirement to fulfil the World Bank's OP 4.10 on Indigenous People with Free, Prior, Informed Consultations (FPIC) and is there an enabling environment, and available resources, for FPIC to take place in the REDD+ country. See Table 3.19 below. More specifically the following principles should be followed when conducting consultations:

- A transparent and logical process in selecting stakeholders;
- Prior and informed notice about the meetings to the identified stakeholders;
- Respect of and adherence to formal traditions at the community and village level
- A participatory approach;
- Women and vulnerable populations given the opportunity to share their thoughts;

- Recorded as appropriate, and the report shared with the stakeholders for verification; and
- Culturally sensitive and language appropriate engagement

A particular issue for consultation and decision-making is that the TLTB recognizes (TLTB has control over the administration of native land by law), that for agreement only 60% of a Matagali need to agree[69] decisions on land and benefit sharing issues. All living members of the landowning unit are equally considered in the distribution of funds by direct deduction from TLTB into personal bank accounts. For those under 18 years old dividends are kept by TLTB until they reach 21 years of age.

Non-iTaukei communities, have yet to be fully engaged in "land conservation" work (reducing areas of degraded land), including REDD+ awareness raising. Nor have these communities been considered in most of the land-based or marine conservation work.

Table 3.19 Summary of consultation issues

Major topic	What is at issue?	Relevance to REDD+	Applicable WB Safeguards
CONSULTATIONS, potential to do FPIC, CSO involvement.			
Civil Society Organisations	CSOs are independently acting bodies in Fiji. They are often under-resourced in terms of staffing and budgets.	Independent CSOs capable of carrying out consultations/ FPIC with local communities remain few.	OP4.01, OP4.04 OP4.36
Awareness of REDD+	Raise the level of public awareness of REDD+ themes and issues	Many people in rural areas unaware of REDD+	
Consultations	FPIC and/or other consultations with local communities was limited and may raise false expectations. The practicalities of carrying out effective FPIC are a challenge without ODA support over such a large region with many remote communities. FPIC is a requirement under REDD+ and must be reported on, but experience shows that FPIC meetings may be too short and with too little relevant information for people to make considered decisions. FPIC must be inclusive of landowners and non-land	Ensure that there are strategies within the Forestry Policy that are aligned with the Fiji REDD+ policy on the equal recognition and participation of men and women in REDD+ initiatives If FPIC gets carried out too far in advance of what is known about REDD+ benefits in a locality it is not possible to discuss opportunity-costs with villagers so that they have enough inputs for own decision-making. Misunderstandings may lead to their reluctant participation. Adequacy of consultations This is a major risk for project outcomes in terms of benefits. The poor (essentially those more dependent on forest resources than others) and	OP4.10, OP4.12, OP4.01, OP4.36, OP4.04

[69] Land Use Regulations, r5, Land-owning 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 Land Use Regulations, r2: Qualifying Member means a member of an LOU as verified by the Native Land and Fisheries Commission, who is a permanent resident of Fiji over the age of 18 years.

Major topic	What is at issue?	Relevance to REDD+	Applicable WB Safeguards
	owners (lease holders, informal tenants).	vulnerable (particularly in remote areas) may be left out of planning processes. Their interests may be disproportionately harmed compared to the better off in the villages. Leaseholders and informal tenants must be included in consultations	
Gender	Women in general, poorer women in particular, are often difficult to hear at mixed group consultations and in traditional decision making discussions. Gender issues may then be inadequately addressed.	Women are important users of the forest and have equitable land ownership. Women in leasehold households must also be included. REDD+ policy related to gender and the impact of REDD+ on livelihood to be communicated effectively through all the main vernacular languages in Fiji – iTaukei, Hindi, Rotuman and Chinese– and disseminated to targeted communities. A REDD+ Program without consideration of gender may result in women's livelihoods harmed rather than improved if they have not been adequately consulted.	OP4.10 OP4.12
Consultations with lease holders and non-land owners	Challenging to engage with lease holders and non land owners particularly from non-iTaukei groups	REDD+ policy related to gender and the impact of REDD+ on livelihood to be communicated effectively Recommendations to continue awareness raising with non-iTaukei groups	
Consultations on SFM, Timber Licences and Protected Areas	Communities would like to have more information on sustainable approaches to forest management, better supervision of Timber Licences and more discussion on protected areas and continued access to forests and benefits	Continue with awareness raising and iTaukei and non-iTaukei communities follow to sustainable land-use practices and REDD+ objectives of SFM and support for protected areas	OP4.01, OP4.04, OP4.36, OP4.12

3.7.5 Policy legal and regulatory framework

National Legal and Regulatory Framework

The key policy framework for REDD-Plus implementation in Fiji is the Fiji REDD-Plus Policy that was endorsed by Cabinet in 2011. The policy has been aligned with the objectives of the Fiji Sustainable Economic and Empowerment Development Strategy (SEEDS) and the Fiji National Strategic Development Plan 2007–2010 goals for sustainable forest management, and is implemented within the framework of the National Forest Policy Statement of 2007.

5-Year and 20-Year National Development Plan

Fiji has both a 20-Year Development Plan (2017-2036) and a comprehensive 5-Year Development Plan (2017-2021). These plans work together, as the 5-Year Development Plan provides a detailed action agenda with specific targets and policies that are aligned to the long-term transformational 20-Year Development Plan. Fiji's first ever long term development strategy aimed to help achieve the Sustainable Development Goals and meet commitments under the Paris Agreement. There are individual sector development plans to be implemented over the next 5 years.

The Government has been the key player in forest-plantation management, with the private sector involved in harvesting and timber processing. Moving forward, private sector involvement in forest-plantation development and management will be increased through long-term leasing arrangements and appropriate technical support. A National Plantation Policy will be introduced to provide guidelines for setting up private sector plantations and their operations as well as a Fire Management Strategic Plan to address the threat of forest fires to standing stock.[70]

- Strengthen sustainable forest management
    - Strengthen efforts on forest conservation, sustainable forest harvesting practices and climate change mitigation and adaptation.
    - Long-term leasing mechanism(s) to support forest conservation, forest concessions and plantation leases.
- Encourage private sector participation in plantation development.
    - Develop a Plantation Policy that will ensure better management, development and production from plantations.
    - Formulation of a National Land Use Plan.
    - Provide the enabling environment for private sector investment in plantation development.
    - Continue Fiji Hardwood Corporation Limited's (FHCL) re-planting programme.
- Encourage the growth of timber product development
    - Strengthen wood product research and promotion through the provision of appropriate infrastructure (e.g. facilities, machines, equipment).
    - Support Micro, Small and Medium Enterprises (MSME) in their development of niche products through appropriate MSME schemes.
    - Upgrade plant and machinery used by Fiji Pine Group of Companies.

The Green Growth Framework for Fiji 2014

In August 2014, Fiji developed and launched the Green Growth Framework for Fiji, which is currently the government blueprint for sustainable development in Fiji. The Green Growth Framework supports and complements SEEDS, the *People's Charter for Change, Peace and Progress* and the *2010–2014 Roadmap for*

[70] 5-Year and 20-Year National Development Plan – Transforming Fiji, Ministry of Economy, November 2017

Democracy and Sustainable Socio-economic Development, all of which share a common vision: A Better Fiji for All. The underlying argument was that a prudent, efficient and sustainable relationship with nature should be adopted as an important principle in the revised *Constitution of Fiji 2013* and the Green Growth Framework is intrinsic to fulfilling the constitutional right to a clean and healthy environment and inclusive sustainable development.

Thematic Area 3 of the Green Growth Framework, Sustainable Islands and Oceans, recognises the renewed efforts of the forestry sector to encourage afforestation, reforestation and conservation of natural forests. In particular, the framework recognises that the efforts of REDD-Plus and protected areas management contribute to sustaining forest resources, and states that there is an urgent need to look at innovative benefit-sharing arrangements as an option for formal leasing to encourage reforestation and planting and encourage ownership and partnership with communities. Some of the key strategies relevant to REDD+ activities include the goal to develop a land-use plan for Fiji to coordinate and manage competing demands for land, and the development of a natural resource management system that is inclusive and integrated.

National Climate Change Policy 2012

The *National Climate Change Policy* is based on the Climate Change Policy Framework endorsed by Cabinet in December 2007. The policy has eight broad objectives and promotes the integration of climate change issues in all national and sector policy and planning processes. The policy identifies objectives and strategies to aid the mainstreaming of climate change issues into relevant sectors and to support the provision of necessary technical and financial resources to this end.

Objective 6 of the policy identifies strategies to reduce Fiji's greenhouse gas emissions and implement initiatives to increase the sequestration and storage of greenhouse gases. Strategies outlined under this objective include supporting the implementation of the Fiji REDD+ Policy, the Fiji National Biodiversity Strategies and Action Plan (NBSAP), the Clean Development Mechanism Policy Guideline and other national policies and strategies on the reduction of Greenhouse gases (GHG) emissions, deforestation, forest degradation and the enhancement of forest carbon stocks. The policy emphasizes that mitigation measures focused on maintaining forest carbon stocks and increasing sequestration of carbon through forest conservation, reforestation, afforestation and enrichment planting will also contribute to biodiversity conservation, improved watershed management, improved food security and improved waterway conditions.

a) National Biodiversity Strategy and Action Plan

The Fiji National Biodiversity Strategy and Action Plan 2017– 2024 (NBSAP) is a national policy document recognised under the Environment Act 2005. The NBSAP is also a requirement for all parties to the Convention on Biological Diversity and its 2020 Aichi Targets. The NBSAP 2017-2024 was developed by the Department of the Environment, which is focal point for the Convention of Biological Diversity (CBD) Fiji's NBSAP addresses the goals of the CBD Strategic Plan 2001–2010 and was adopted by government in 2003. It addresses most of the Thematic Areas and some of the Cross-cutting Issues but has not been updated since its initial production and does not clearly address the Aichi Biodiversity Targets of the CBD Strategic Plan 2011–2020.

Considerable progress has been made toward meeting Goal 3 (Promote the conservation of genetic diversity) of the CBD Strategic Plan 2001–2010. Good progress has been made in many other areas, but Goal 2 (Promote the conservation of species diversity) may need more attention. Under-reporting of activities of the many effective NGOs in Fiji may be misrepresenting the level of achievement, and an improved monitoring and evaluation protocol with priorities, appropriate targets, indicators and timescales will help identify and report on progress. The goal of the NBSAP is:

"To conserve and sustainably use Fiji's terrestrial, freshwater and marine biodiversity, and to maintain the ecological processes and systems which are the foundation of national and local development."

This is supported by the following eight principles:

Principle 1: Community participation and ownership
Principle 2: Biodiversity is foundation for all development and inter-generational equity
Principle 3: Biodiversity Mainstreaming and Ownership
Principle 4: Gender mainstreaming and equality
Principle 5: Adopting an ecosystem-based management approach
Principle 6: Managed and Protected Areas (for species protection, forest, watersheds and marine) should be comprehensive and representative
Principle 7: Improving knowledge, capacity and intellectual property
Principle 8: Financial Sustainability and accountability

In 2014 Fiji reviewed the focus areas of the 2007 NBSAP and agreed to six priority focus areas to be addressed under the 2017–2024 NBSAP:

Focus 1: Improving our knowledge
Focus 2: Developing Protected Areas
Focus 3: Species Management
Focus 4: Management of Invasive Species
Focus 5: Enabling Environment and Mainstreaming
Focus 6: Sustainable Use and Development

b) NBSAP Implementation

Fiji's NBSAP is implemented through the NBSAP Implementation Framework. The administration of biodiversity conservation is conducted by the Ministry of Environment through the National Environment Council. The Ministry of Environment has established the NBSAP Steering Committee which consists of chairs of the thematic areas working groups and guides, monitors and provides updates and reports on implementation and progress.

The 2007 NBSAP implementation is currently implemented through the Implementation Framework 2010–2014, which was developed in 2009. As part of this review process, stakeholders have identified seven thematic areas to guide the implementation of Fiji's NBSAP and these are:

- Forest Conversion Management
- Invasive Alien Species
- Inshore Fisheries
- Protected Areas
- Coastal Development
- Species Conservation: Threatened and endangered species (trade and domestic consumption)
- Inland Waters

The Implementation Framework is currently under revision in parallel to the updating of the NBSAP. The Implementation Framework will be revised every 5 years to guide implementation with the leadership of the Ministry of Environment. The key elements of this implementation framework are to ensure that:

- Thematic area working groups are established with representatives from implementing government and non-government organisations.

- A chair is appointed to ensure the thematic areas meet once every quarter to report on progress; identify new activities; and produce and submit timely reports to the Department of Environment.

- There is bi-annual reporting to the Department of Environment from each thematic area with updates and progress against indicators.

The NBSAP provides a detailed list and suggested framework for implementation and indicators to reflect specific thematic areas and actions in the revised Implementation Framework to ensure successful implementation of the NBSAP focal areas. The suggested indicators would be further developed in the Implementation Framework to help track progress.

Fiji is also developing a draft National Climate Change Adaptation Strategy (NCCAS), which will support the implementation of the National Climate Change Policy. The NCCAS draft contains sector-specific strategies and actions to address climate change impacts, especially for land-based resource sectors in Fiji, including forestry.

c) The National Adaption Plan (NAP)

The NAP [71]contains 160 adaptation measures to be prioritised over the five-year period of the NAP. They do not represent the only actions that will be undertaken, simply the actions identified as the most urgent according to stakeholders. They have been selected on the basis of stakeholder consensus.

The NAP is expected to substantially support efforts to achieve Goal 15 which is to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification (the agriculture component is especially relevant for fulfilling Fiji's commitments under the United Nations Convention to Combat Desertification and the new Strategic Framework (2018-2030)), and halt and reverse land degradation and halt biodiversity loss.

d) Fiji Forest Policy

The objective of the Fiji Forest Policy framework is to involve all stakeholders of the forestry sector, to:

- Create a unified vision of the role of the forest sector in Fiji.
- Lead strategic planning for the Board and Department of Forestry.
- Provide analysis, policy and planning expertise, information about forests and forestry, and forward-looking ideas for decision- and policy-makers.
- Promote policies that encourage sustainable forest management and support Government's strategic planning for the sustainable development of Fiji.
- The Fiji Forest Certification Standard is included in the Fiji Forest Policy Statement specifically in Policy Field 2.5 whereby the Standard provides criteria and indicators for sustainable forest management.

The Fiji Forest Policy Statement of 2007 (Forest Policy) establishes its national goal for the forest sector as the "sustainable management of Fiji's forests to maintain their natural potential and to achieve greater social, economic and environmental benefit for current and future generations". The Forest Policy highlights the role the forest sector has to play in meeting Fiji's obligations under the UNFCCC, the Convention on Biological Diversity (CBD), and the United Nations Convention for Combating Desertification (UNCCD), as well as other multilateral and regional environmental treaties that require the conservation of biodiversity and effective management of forest and forest activity, including the Forestry Department's role as the leading agency in forest-related matters as identified in the Rural Land Use Policy. The policy highlights a number of issues for sustainable forest resources management, which include:

- Absence of a comprehensive national and regional land-use plan as a major constraint in establishing a clear process for identifying and securing forest areas for different uses, which can be addressed through the recommendations set out in the Rural Land Use Policy;

[71] The National Adaptation Plan A pathway towards climate resilience, Ministry of Economy 2018

- Pressure towards deforestation to accommodate for population growth, demand for new settlement areas and greater agricultural production for food security;
- Inadequate knowledge of Fiji's forest resources and the need to re-assess the status of Fiji's forests to acquire reliable information that will allow better decisions to be made on effective management of the resource, which should have been addressed by the National Forest Inventory and include the designation of protected areas;
- Lack of monitoring of the Fiji Forest Harvesting Code of Practice; and
- Expansion of plantations into natural forest threatening biodiversity value, which can be addressed through land-use planning needed to identify suitable plantation areas while conserving the environment.

The Forest Policy establishes a new framework aimed at improving the conservation and sustainable management of Fiji's forests, and envisions a permanent forest cover, including a protected forest area network that provides the full range of ecological, economic and social functions at the local and national global level. Some of the key focus areas are the establishment of permanent forest estates based on forest functions derived from the National Forest Inventory in line with the national Rural Land Use Policy and stakeholder interest. The recommendations of the Forest Policy 2007 are yet to be incorporated in law. However, if the Forest Bill of 2016 is passed in its current form, clause 12 of the Bill places emphasis on the administration of the forest sector in accordance with the National Forest Policy, including a review every five years.

e) Forest Certification in Fiji and the Forest Harvesting Code of Practice

The Fiji Forest Certification Standard has been under development and currently follows the guidelines of the Forest Stewardship Council. A multi-interest stakeholder Fiji Forest Certification Steering Committee (later to become the Fiji Forest Certification Working Group Committee) was set up but has not made much progress since 2012. The basis for the selection is that the FSC forest certification scheme and label is the most demanded at international wood markets and it is also the most fair and robust.

The Fiji Forest Harvesting Code of Practice is designed to address environmentally acceptable harvesting practices to minimize the degradation of forest soil and water while maintaining biodiversity. Compliance to the Fiji Forest Harvesting Code of Practice is included in the Fiji Forest Certification Standard, particularly under Criterion 6.5.

f) 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, such as climate change and globalization. To date, Forest Bill 13 of 2016 was tabled in parliament in February 2017. The bill has been 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 TLTB in all dealings with iTaukei land. The Forest Decree provides for two 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 licence issued by the

Department of Forests[72]. There are no provisions in the Forest Decree that provide for the extraction of forest resources in a nature reserve, with or without a licence. Resources owners are also prohibited from exercising their customary rights in a forest and nature reserve.

Some of the weaknesses of the Forest Decree 1992 that may affect REDD+ activities in Fiji include: (i) the inconsistency of the decree with the Fiji Forest Policy Statement of 2007 and administration of the forest sector; (ii) limitations in enforcing the provisions of the Fiji Code of Logging Practice; and (iii) the prohibition of customary rights to hunt and gather in forest or nature reserves[73] allow livestock, which may affect landowners' willingness to protect native-owned land under the provisions of the decree.

g) Agriculture related Laws and Regulations

Fiji's legal framework for agriculture-related activities consist of more than 30 items of legislation, as well as national policies, strategies and plans. The items of legislation of primary relevance to agriculture and rural land-use sectors are:

- Rural Land Use Policy 2006;
- 2020 Agriculture Sector Policy Agenda "Modernizing Agriculture" 2014;
- Land Conservation and Improvement Act (Cap.141);
- Sugar Industry Act;
- Rivers and Streams Act;
- Drainage Act;
- Irrigation Act;
- Subdivision of Lands – Residential and Industrial Act;
- Agricultural Landlord and Tenant Act (ALTA); and
- Forest Decree.

The four most significant of these are summarized below.

i) Rural Land Use Policy 2006

The Rural Land Use Policy, which aims to guide management of resources with respect to agricultural practices, has an overarching goal to establish legislative frameworks that promote the sustainable use of land. The policy reflects the commitment to find sustainable mechanisms of development that will create the necessary preconditions to achieve environmentally sound, socially desirable and economically appropriate forms of land use. This commitment is accompanied by awareness that this is especially urgent due to the scarcity of land resources and the fragility of the environment (Leslie and Ratukalou 2002a). It aims to manage

[72] The Forest Department issues two types of licences to fell trees, namely (i) a forest concession licence which as a life period from 10 to 30 years and an annual logging licence. Most logging activities are through annual logging licences. It has been suggested that it forest concessions may be a suitable mechanism to facilitate community based sustainable forest management for REDD+ activities. SPC/GIZ Regional REDD+ Report 2013

[73] The Forest Decree (1992) Section 6 allows for the declaration of a forest reserve or nature reserve, Section 7 allows for the management of the forest reserve or nature reserve and Part IV Utilisation of Forest Resources Section 8 prohibits in a Forest Reserve or Nature Reserve the felling and extraction of timber or taking of forest "produce" it also prohibits livestock/ domestic animals to entre, planting of crops hunting fishing etc. unless a Licence is issued under Section 9 to allow the activities, and the Licence can only be issued with the consent of the Native Land Trust Board NLTB (now the TLTB) or Director of Lands in the case of Crown land.

land for sustainable uses, balance production with protection, create diversity and leave an enhanced heritage for future generations.

The policy's vision calls for Fiji's obligation to address the following broad strategies: a) protecting the integrity of ecological systems and biodiversity; b) reducing the rates and areas of land degradation; c) protecting natural resources; d) reducing damage to fragile ecosystems; e) maintaining and extending indigenous forest and plantation forest coverage; f) promoting sustainable farming systems; g) improving rural environmental conditions; h) encouraging the formation of land husbandry groups; i) preventing and controlling pollution; and j) implementing international environmental accords to which Fiji is a signatory.

One of the specific considered desirable elements in the vision is the development of a national land-use plan and its implementation through a national and regional institutional structure, with the process initiated and overseen by an independent national land use council (Leslie and Ratukalou 2002a).

ii) 2020 Agriculture Sector Policy Agenda "Modernizing Agriculture" 2014

The Fiji 2020 Agriculture Sector Policy Agenda was developed to meet the need for an inclusive development framework for its agriculture economy to move forward by addressing new domestic and global challenges in line with food and nutrition security and climate change.

The policy complements the National Green Growth Framework and provides new dimensions by opening up to global innovations for 'climate-smart agriculture' that generate both adaptation and mitigation benefits. The policy also addresses the 'sustainable intensification' that will increase production. The holistic and focused vision envisaged in this policy pursues sustainable development with an inclusive approach that will modernize Fiji's agriculture sector by 2020. Its national goal is to build sustainable communities, with the overall purpose to establish a diversified and economically and environmentally sustainable agriculture economy in Fiji.

The core objectives of the policy include: a) to build modern agriculture in Fiji as an organized system of producing, processing, and marketing crops, livestock, and aquaculture products; b) to develop an integrated production, processing, energy, and transport infrastructure support system for agriculture; c) to improve delivery of agriculture support services; d) to enhance capabilities to generate funds and secure investment through foreign investment, public private partnership, and other innovative business arrangements; and e) to improve project implementation and policy formulation capability within the MOA and its partner institutions. In other words, the policy is designed to facilitate the modernization of agriculture in Fiji and enable Fiji to move further up the international value change for agricultural commodities that it has some comparative advantages for an island state that can no longer take advantage of programs such as the EU's Everything but Arms (EBA) unlike less economically developed countries in the world.

iii) Land Conservation and Improvement Act, 1953 (Cap.141)

This Act was introduced in 1953 and has had five amendments since then. As the name suggests, it was intended "to make provisions for the conservation and improvement of land and water resources". The Act had good intentions but lacked the necessary personnel and financial resources to be effectively enforced (MOA 2006). At the time the Colonial Government was not serious about allocating the necessary resources to conserve and improve land and water resources in Fiji. Presently, the Land Use Section of the Ministry of Agriculture is providing the secretariat functions from its own resources.

The Act established the Land Conservation Board (LCB). The Board has powers to exercise general supervision over land and water resources, stimulate public interest in the conservation and improvement of land and water resources, issue conservation orders controlling or regulating or prohibiting the use of land and activities on land, and recommend legislation. The LCB provides for interventions over the way in which land is being used, such as requiring particular land practices to cease and directing remedial work to be undertaken. While lease conditions and planning controls tend to be preventive, they can also be both preventive and remedial.

The regulatory conservation orders under the act include: bush clearance, cultivation of crops and methods of cultivation, grazing and watering livestock, lighting of fires and burning of vegetation (including harvested cane plant material not used in the actual milling of sugar), and the requirement for any landowner or tenant to carry out any necessary soil conservation measures on their land. The Ministry may appoint conservation officers to assist LCB in supervising land and water resources. Conservation officers have significant powers under the act to enter land at any time.

Amendments to the act include:

- Land Conservation and Improvement (LCI) Act Order 21 (1959), which instructs all sugar cane to be grown along the contour;
- 1970 amendments, which focus on drainage;
- 1990s amendments, which focus on land degradation (soil erosion, decrease in productivity, unsustainable land-use practices);
- 2002 amendments, which focus on the formulation and implementation of the National Land Use Plan as one of its core functions; and
- 2007 focus on the management, conservation and improvement of land and water resources in Fiji.

A 2016 Land and Water Resources Management Bill will replace the LCI Act once endorsed by the Fiji Government.

iv) The 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.

All native land and crown leases are subject to the land conservation provisions of ALTA. In case of conflict, the provisions of ALTA prevail. ALTA was introduced to rationalize the leasing of all crown, native and freehold land for agricultural purposes. Under ALTA, the primary role of the NLTB as the trustee of Fijian land was recognized. But it was also designed to protect both the interests of landowners and tenants. ALTA covers all agricultural land in Fiji, except where the land-holding 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 iTaukei), 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.

h) Summary of PLR issues

Whenever assessing the policy, legal and regulatory frameworks, it is necessary to consider some important background legal and administrative information that has important implications for REDD+, its implementation and the local communities' potential to benefit from it:

- While villages will sometimes have a Forest Warden they do not have their own forest regulations with administrative punishments such as fines they rely on the MOF;
- Community are interested to support sustainable forest management approaches and will general support REDD+ policies but often lack information or an understanding of policies or regulations including the use and importance of the FFHCOP;

- Regulations governing forest management, including timber harvesting, transport and sales, are complex with high cost implications that local communities try to avoid, unless part of an ODA project (for example, a community forest management project would require a series of 5-year forest management plans and timber can only be legally harvested for commercial purposes following the detailed plan and currently there are strict limits on timber harvesting for legal sale;
- Land use planning and forest planning:
    - Participatory land use planning (PLUP) difficult to implement potentially quite a top down process for the wider community;
    - Clear difficulties in the availability of resources for implementation of the participatory planning except, more or less, where ODA projects are implemented.

A summary of the PLR issues follows below in Table 3.20.

Table 3.20 Summary of policy law and regulation (PLR) Issues

Major topic	What is at issue?	Relevance to REDD+
POLICY and LEGAL FRAMEWORKS, especially local communities		
Natural resource management	Fiji's natural resource management legislation is highly sectoralised	To break down sector barriers and ensure that there are strategies within the Forestry Policy that are aligned with the Fiji REDD+ policy on the equal recognition and participation of men and women in REDD+ initiatives
Agricultural policies	The agricultural policies, sometimes conflict with forest and land use policies and have led to increased deforestation and land degradation. Focus on certain commercial crops e.g., kava and taro, subsidies for sugar production, reduced incentives for farmers to improve or change land use, inconsistent support on rehabilitation of degraded land and sustainable land use management, and difficulty of introducing control of fires A mechanism of enforcement established to regulate unsustainable land use planning and practices	Increased national dialogue on sustainable land-use practices Clearly defined roles of key partners in enforcing the legislations on unsustainable land management, namely; MOA, Ministry of Fisheries and Forests (MOFF), Ministry of Land (MOL), and *i*Taukei Land Trust Board Support effective village, district provincial and divisional participation in REDD+ dialogue to improve sustainable land-use practices
Climate smart crop production	More support for climate smart agriculture Diversify agriculture to include more support for agroforestry	Clearly defined roles of key partners in enforcing the legislations on unsustainable land management, namely; MOA, Ministry of Forestry Ministry of Land (MOL), and *i*Taukei Land Trust Board
Fire management	Develop a rural fire policy and legislation, and increase capacity of rural forest-based communities to fight wild fires. Capacity and support to develop community fire watch, community fire fighters and a litigation process for offenders Assess opportunities to integrate regulations on fire and sustainable resource use to the Village by-law advocated by the Ministry of iTaukei Affairs.	Overall there is sufficient governance mechanism in place to manage fire or uncontrolled burning. The main weakness identified is the lack of enforcement of the various legislation or the lack effective management to implement strategy to management uncontrolled fire. There is also a lack of coordinated approach across various organizations. Reduction forest loss, reduction degraded land, increase in re-growth on degraded areas

Major topic	What is at issue?	Relevance to REDD+
		Empower communities to manage resources in a holistic manner from traditional, social and environmental issues Fire regulation is integrated into village by-laws
Gender related issues	REDD+ policy related to gender and the impact of REDD+ on livelihood to be communicated effectively	Increase awareness of REDD+ at all ethnic and religious formal communal gatherings; ensure that gender equal participation is clearly reflected in forestry policy
Forestry Decree 1992	The Forest Decree distinguishes between natural and planted production forest and affects households' ability to benefit from the two types. Households' main chance to benefit from production forest is when they have planted their own seedlings and then harvest without interventions or subsidies from the State. Many gaps in the current Forestry Decree e.g. use of EIA for logging is missing. The Decree is due to be replaced the Forestry Bill 2016	This will limit householders chances to benefit from REDD+, as they will continue to try to get benefit from harvesting their own plantations as they see fit (often more short term rotations).
Draft Forestry Bill 2016	Review and implement proposed legislation, probably should be updated to take account of climate change and carbon accounting issues	Introduces protection of ecosystem services, ecotourism and biodiversity access to forest lands etc. Establishment of a network of protected area systems and permanent forest estates
Protected Areas	Develop policy and legislation for Protection Areas mainly a Dept. of Environment issue but would be supported by the Forest Bill. Policy and legislation in place for PA system in Fiji that allows a seamless connection between REDD+ and protection of biodiversity and ecosystem services.	Expansion and support for PAs seen as a major objective in REDD+ in Fiji
Endangered and Protected Species Act (2002)	Should be reviewed and possibly updated to take account of Forestry Bill, support for PAs etc.	Review and update where necessary
Land Use planning	Gap in Rural Land Use Policy 2006 Develop forest and land-use management plans at district level to feed into Provincial/National Plans – regulation and enforcement issues iTaukei and non-iTaukei communities adhere to sustainable land-use practices and REDD+ objectives.	Develop a national land use plan to guide and coordinate land utilisation with respect to agriculture, forestry, and biodiversity conservation. This plan should build upon the vision outlined in the Rural Land Use Policy to maintain and extend forest cover and protect it from uncontrolled conversion Support effective village, district and provincial participation in REDD+ dialogue Continued commitment from Ministry of iTaukei Affairs and iTaukei Land Trust Board on REDD+ issues

Major topic	What is at issue?	Relevance to REDD+
		Protection of ecosystem services including PAs, protection and use of degraded lands, protection of watersheds
Land and Water Resources Management Bill 2016	The Land and Water Resources Management Bill 2016 includes management, conservation and improvement of land and water resources. It will replace the Land Conservation and Improvement Act	Will help to improve the management, conservation and improvement of land and water resources
iTaukei Land (Forest) Regulations [Cap 134],	iTaukei Land trust Board acts on behalf and consent of land owning units for any planned mining or logging developments on such lands. Issuance of a Timber license is subject to the approval by the licensing officer of a logging plan prepared by the applicant.	Fiji's REDD+ Policy stands alongside its UNFCCC obligations and the forefront of Fiji's aims to reduce such emissions that affect climate change. Issuance of a Timber license are subject to the approval by the licensing officer of a logging plan prepared by the applicant, The Fiji Code of Harvesting Practice remains the guiding principle of all forest-harvesting operations prescribing practices aimed at protecting the forest environment, its assets and its users within economically viable operations and environmentally friendly standards.
Land Law a)	Short-term leasing arrangements are not aligned with sustainable land use management	Review leases and leasing arrangements to encourage longer term investments that are more sustainable and reduce degradation of land
b)	TLTB lease conditions are not always properly enforced	Encourage consistency and aim to reduce land degradation
Environment Management Act (2005)	Capacity to monitor and regulate implementation of EIAs and develop and manage cross sector linkages and deal with the management issues	Continue support for mandatory environment impact assessments
	Legislation specific to Environment Impact Assessment is the Environment Management Act, and the EM (EIA Process) Regulations Dept. of Environment is responsible for regulating the Environment Management Act including the overseeing of the EIA process for any development proposals.	EIA guideline was formalised and published by the Department of Environment in 2008 primarily for approving authorities and the environment management units, with the aim of helping planning staff involved in the processing of development proposals and projects. It also allows public participation and a means to voice concerns and shape mitigating factors towards proposed or likely environmental consequences.
FGRM process	To have a clear policy in addressing the process of dealing with social and cultural related conflicts related to REDD+	Procedures of effectively addressing social and cultural is clearly embedded within the government legal framework in place to support REDD+
Carbon Rights	Determine the way forward for carbon rights to proceed with the REDD+ Policy. Review relevant legislation to include reference to carbon as a commodity/resource	Legal framework in place to support carbon title, trade and benefit sharing

4 Summary of the Emission Reduction Program

4.1.1 Overall design of the ER Program

The overall approach and design of the program to address the drivers and underlying causes of forest loss and barriers to SFM, forest conservation and enhancement to build on and support implementation of the current ambitious national and sub national programs.

Component 1: Strengthening Enabling Conditions for Emission Reductions (~USD 1.65 million) - focusing on the development of integrated land use plans and three divisional landscape governances for improved regulatory framework supporting REDD+, and strengthened 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 36.68 million) - the core component of the ER-P and will focuses on the following:

- Sustainable natural forest management contributing to reduction of forest degradation;
- Afforestation and reforestation in plantation forest contributing to the enhancement of forest carbon stocks;
- Afforestation and reforestation to restore ecosystem services;
- Promotion of climate-smart agriculture and enhanced livelihoods contributing to the reduction of deforestation pressure and
- Promotion of forest protection, to conserve existing natural forest carbon stocks.

Component 3: Program Management and Emissions Monitoring (USD 1.72 million) - this component includes the program and financial management of the ER-P. It also includes the monitoring and evaluation safeguard monitoring, Monitoring Verification and Reporting MRV system and will finance the communication and awareness raising of the ER-P and REDD+.

The following Table 4.1 shows the proposed priority districts and summary activities in those proposed districts and Figure 4.1 shows the location of the district.

Table 4.1 Proposed priority areas of intervention and districts

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

Figure 4.1 Map showing the location of the ER-P priority district

Table 4.2 Main ER-Program interventions potential socio-economic impacts and mitigations

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 cross cut 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 with 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	- This depends if the forest and related laws are more strictly enforced and the status of the forest changes i.e. a reserve or a protected area is set up and access to forest changes In most cases the FGRM would normally be used to resolve issues in some circumstance the final option would be to follow OP 4.12
1.2.2 Capacity building on forest laws, enforcement and	-Awareness raising at District level three trainings per year on carbon enhancement,	- Women may be excluded - Exclusion of poor, and vulnerable hhs	- Use FPIC and need to ensure community consultations with iTaukei and non iTaukei - Matagali and TLTB need to continue to ensure transparency

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
governance at community level	application of the FFHCOP and land leasing processes - Improved social awareness of the importance of forests	- Possible elite capture - Possible particular problems in coastal economic zone where high value land leases are to be found	- FGRM would be introduced and used to help resolve any disputes as above final option would be use of OP4.12
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
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	- Some possible impacts on livelihoods, i.e. improved conservation of natural forest may	-Matagali self-select to be part of a public private partnership for Forest Management Licenses. Their involvement is voluntary.

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
	- 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	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)	-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 the proposed FGRM process does not satisfactorily resolve access issues such when as access to forest changes when protected area boundaries are set, are not resolved by the Forest Division and YMST, then OP 4.12 will apply to ensure that involuntary resettlement impacts, will be mitigated. - If any non-Matagali households (leaseholders, tenants, squatters) are affected by being forced to desist from using land for other purposes 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
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 Activity Missing			
2.1.3 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 remoter 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. (currently not an activity in 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

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 2.2 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 - Possible health and safety issues related to plantation harvesting	- 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 legalisable 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[74] - Training on and applying the FFHCOP including the health and safety training following the guidelines on timber harvesting (this training should be community wide)
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 areas[75])	- Where a problem occurs first recourse would be through the FGRM - If FGRM process fails, OP4.12 will be triggered - Training on and applying the FFHCOP including the health and safety training following the guidelines on timber harvesting (this training should be community wide)
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. including how to handle, use and store the chemicals and or similar hazardous materials - Training to include the wider community to help minimise any risks of misuse or accidents

[74] Health and Safety at work Act (1996)

[75] 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**
			- Training on and applying the FFHCOP including the health and safety training following the guidelines on timber harvesting (this training should be community wide)
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) -Establishment of 200ha pine woodlot per year		- Where a problem occurs first recourse would be through the FGRM - If FGRM process fails, OP4.12 will be triggered
2.3.2 Activity missing			
2.3.3. Community based restoration for 4 million Trees	- Matagali will self select for activities, encourage community decisions and decision making 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). - Possible increased risk of exposure to harmful herbicides and pesticides	- 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 still under discussion, Matagali would be expected to benefit in one form or another - Selection of the livelihood support should be targeted to contribute to reduce forest dependency; Similar to above discussions through the YMST to design best approach that

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
			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 (including sustainable soil management) 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 - Training on the safe use of herbicides etc. including how to handle, use and store the chemicals and or similar hazardous materials - Training to include the wider community to help minimise any risks of misuse or accidents
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 not 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	- "Climate smart crops" could add to the burden of the community and	- This type of activity is unlikely to have any negative impact if a consensus can be achieved at the local level and the

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	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	especially women farmers if proposed crops (such as vanilla) require extra time and resources or technical training - Possible increased risk of exposure to harmful herbicides and pesticides	program is able to assist impacted or targeted households seek financial assistance. - Land will not be acquired for this activity as it will be land already being used by forest-dependent households - Careful selection of "climate smart crops" this includes improved crop production techniques and sustainable soil management approaches is required to avoid negative impacts and ensure uptake. Particular attention needs to be taken of impact on women. - Training on the safe use of herbicides etc. including how to handle, use and store the chemicals and or similar hazardous materials - Training to include the wider community to help minimise any risks of misuse or accidents
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 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 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 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 can not 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	-Improvements to policy at least 2 Discussion Papers drafted and submitted to Forestry Board per year	- As above. This activity may result in some risks associated access	- If any households are affected by being forced to desist from using this land for other purposes (e.g. traditional swidden agricultural cropping or livestock grazing) they will

ER-P intervention to address drivers and enhance carbon stocks	Socio-economic impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
instruments such as the TLTB Act	-Endorse and enforce PA status at least one site per year -Secure at least 1 REDD+ Conservation Lease per year	restrictions and changes in levels of income	be compensated for loss of production and OP4.12 will be used to mitigate possible negative impacts
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 can not be resolved
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		
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. - No negative impacts expected	

Table 4.3 Main ER-Program interventions potential environmental impacts and mitigations

ER-P intervention to address drivers and enhance carbon stocks (ha)		Environmental 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 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 cross cut 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) -Possible unsustainable increases productivity of soil i.e. changes to soil, loss of organic matter soil structure and hence declining yields and soils being more susceptible to erosion etc.	- 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 and sustainable management and use of soil - 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 - Land use planning, training and awareness raising to include identification of import areas of forest (i.e. hotspots of biodiversity or similar), keeps forest disturbance to a minimum - Exclusion of the hotspots from activities and protection of areas of forest identified as critical habitats including cloud forest, riparian, mangroves, from development (and similarly wetland areas and areas included in the NBSAP) - Where appropriate (depending on the type of habitat and area – a qualitative assessment of the biodiversity may be needed for example) a specific management plan for the area may need to be considered to ensure that the biodiversity is protected.
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

ER-P intervention to address drivers and enhance carbon stocks (ha)		Environmental impacts and mitigation	
	Activities and potential positive impact	Potential negative impact	Mitigation
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 cross cut 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 including the health and safety training following the guidelines on timber harvesting (this training should be community wide)
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 district 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
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

ER-P intervention to address drivers and enhance carbon stocks (ha)		Environmental impacts and mitigation	
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
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 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	- May impact on high conservation value forest i.e. untouched or high conservation value forest may be brought under a sustainable/ reduced impact logging approach to SFM	- Biodiversity values should be assessed (following OP4.04 guidelines and definitions) prior to Forest Management Licences being issues - 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 - Training on and applying the FFHCOP including the health and safety training following the guidelines on timber harvesting (this training should be community wide)

ER-P intervention to address drivers and enhance carbon stocks (ha)		Environmental impacts and mitigation	
	Activities and potential positive impact	Potential negative impact	Mitigation
	Collaborators: Ministry of iTaukei Affairs iTaukei Lands Trust Board Saw-millers Association NGO, CSOs		- 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 - Exclusion of the hotspots from activities and as above protection of areas of forest identified as critical habitats - including cloud forest, riparian, mangroves, from development (and similarly wetland areas and areas included in the NBSAP such as IBA, KBAs, AZEs or areas where rare, vulnerable, endangered, or similarly threatened, as indicated in the IUCN Red List of Threatened Animals, BirdLife World List of Threatened Birds, IUCN Red List of Threatened Plants may be found) - Where appropriate (depending on the type of habitat and areas for example) a specific management plan for the area may need to be considered to ensure that the biodiversity is protected.
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 (following OP4.04 guidelines and definitions) prior any logging if that is included in the SFM plan - Training on and applying the FFHCOP including the health and safety training following the guidelines on timber harvesting (this training should be community wide)

ER-P intervention to address drivers and enhance carbon stocks (ha)		Environmental impacts and mitigation	
	Activities and potential positive impact	Potential negative impact	Mitigation
			- Exclusion of the hotspots from activities and as above protection of areas of forest identified as critical habitats - including cloud forest, riparian, mangroves, from development (and similarly wetland areas and areas included in the NBSAP such as IBA, KBAs, AZEs or areas where rare, vulnerable, endangered, or similarly threatened, as indicated in the IUCN Red List of Threatened Animals, BirdLife World List of Threatened Birds, IUCN Red List of Threatened Plants may be found) - Where appropriate (depending on the type of habitat and areas for example) a specific management plan for the area may need to be considered to ensure that the biodiversity is protected.
2.1.2 Activity Missing			
2.1.3 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 (following OP4.04 guidelines and definitions) prior any logging if that is included in the SFM plan - Where appropriate (depending on the type of habitat and areas for example) a specific management plan for the area may need to be considered to ensure that the biodiversity is protected.
Subcomponent 2.2. Afforestation and reforestation - timber and biomass plantation	-Generally positive, longer-term benefits to habitat improvements if native species are used for afforestation leading to improved biodiversity - Possibility of increasing land under forest cover	- Potential for reduction or impact on biodiversity if exotic mono-culture fast growing plantation trees i.e. if *Acacia* or *Acacia* hybrid spp. are used for the biomass plantations	- Follow plantation management recommendations conforming to OP 4.36 - Biodiversity surveys (following OP4.04 guidelines and definitions) could assist with identifying values prior to replanting

ER-P intervention to address drivers and enhance carbon stocks (ha)		Environmental impacts and mitigation	
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
	- 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	- 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.	- Exclusion of the hotspots from activities and as above protection of areas of forest identified as critical habitats - including cloud forest, riparian, mangroves, from development (and similarly wetland areas and areas included in the NBSAP such as IBA, KBAs, AZEs or areas where rare, vulnerable, endangered, or similarly threatened, as indicated in the IUCN Red List of Threatened Animals, BirdLife World List of Threatened Birds, IUCN Red List of Threatened Plants may be found) - Where appropriate (depending on the type of habitat and areas for example) a specific management plan for the area may need to be considered to ensure that the biodiversity is protected. - 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. including how to handle, use and store the chemicals and or similar hazardous materials - Training to include the wider community to help minimise any risks of misuse or accidents
2.2.1 Investments in reforestation, short and long rotation plantation - pine plantation	- Restocking of pine plantation with 2500ha/yr. - Monitoring report by the Ministry of Forestry once a year	- Short rotation plantains 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

ER-P intervention to address drivers and enhance carbon stocks (ha)	Environmental impacts and mitigation		
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
			- Training on and applying the FFHCOP including the health and safety training following the guidelines on timber harvesting (this training should be community wide)
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 Ministry of Forestry 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. - Potential health and safety measures if herbicides are used to protect young seedlings	- 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. including how to handle, use and store the chemicals and or similar hazardous materials - Training to include the wider community to help minimise any risks of misuse or accidents - Training on and applying the FFHCOP including the health and safety training following the guidelines on timber harvesting (this training should be community wide) - 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. - 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 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 - Training on safe use of herbicides etc. including how to handle, use and store the chemicals and or similar hazardous materials

ER-P intervention to address drivers and enhance carbon stocks (ha)		Environmental impacts and mitigation	
	Activities and potential positive impact	**Potential negative impact**	**Mitigation**
	- Possible of regeneration of heavily degraded land/ stabilisation of eroded areas/ reduce soil erosion/ leguminous spp. may be used		- Training to include the wider community to help minimise any risks of misuse or accidents - Careful design of planting to avoid any loss of native spp. - Depending on the proposed location the activity may require biodiversity assessments (following OP4.04 guidelines and definitions) as part of process to ensure that there are no impacts on critical natural habitats - Exclusion of the hotspots from activities and as above protection of areas of forest identified as critical habitats - including cloud forest, riparian, mangroves, from development (and similarly wetland areas and areas included in the NBSAP such as IBA, KBAs, AZEs or areas where rare, vulnerable, endangered, or similarly threatened, as indicated in the IUCN Red List of Threatened Animals, BirdLife World List of Threatened Birds, IUCN Red List of Threatened Plants may be found) - Where appropriate (depending on the type of habitat and areas for example) a specific management plan for the area may need to be considered to ensure that the biodiversity is protected.
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 Activity missing			

ER-P intervention to address drivers and enhance carbon stocks (ha)		Environmental impacts and mitigation	
	Activities and potential positive impact	Potential negative impact	Mitigation
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	- As above	- As above
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 PAs. Example of livelihood activities will be developed and provided in the PIM (including sustainable soil management) - 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 including how to handle, use and store the chemicals and or similar hazardous materials - Training to include the wider community to help minimise any risks of misuse or accidents
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 - Exclusion of the hotspots from activities and as above protection of areas of forest identified as critical habitats - including cloud forest, riparian, mangroves, from development (and similarly wetland areas and areas included in the NBSAP such as IBA, KBAs, AZEs or areas where rare, vulnerable, endangered, or similarly threatened, as indicated in the IUCN Red List of Threatened Animals, BirdLife World List of Threatened Birds,

ER-P intervention to address drivers and enhance carbon stocks (ha)		Environmental impacts and mitigation	
	Activities and potential positive impact	Potential negative impact	Mitigation
			IUCN Red List of Threatened Plants may be found) - Where appropriate (depending on the type of habitat and areas for example) a specific management plan for the area may need to be considered to ensure that the biodiversity is protected.
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 - 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	- Unintended introduction of invasive species in disturbed areas - 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 -Possible unsustainable increases productivity of soil i.e. changes to soil, loss of organic matter soil structure and hence declining yields and soils being more susceptible to erosion etc.	- Careful selection of location specific "climate smart crops" this includes improved crop production techniques and sustainable soil management approaches suggests that the program will 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. including how to handle, use and store the chemicals and or similar hazardous materials - Training to include the wider community to help minimise any risks of misuse or accidents
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 (following OP4.04 guidelines and definitions) - Exclusion of the hotspots from activities and as above protection of areas of forest identified as

ER-P intervention to address drivers and enhance carbon stocks (ha)		Environmental impacts and mitigation	
	Activities and potential positive impact	Potential negative impact	Mitigation
			critical habitats - including cloud forest, riparian, mangroves, from development (and similarly wetland areas and areas included in the NBSAP such as IBA, KBAs, AZEs or areas where rare, vulnerable, endangered, or similarly threatened, as indicated in the IUCN Red List of Threatened Animals, BirdLife World List of Threatened Birds, IUCN Red List of Threatened Plants may be found) - Where appropriate (depending on the type of habitat and areas for example) a specific management plan for the area may need to be considered to ensure that the biodiversity is protected. - Careful planning and consideration of resources required for communities - The METT evaluation of PA management process could be used to help in the design of the management but the usefulness of the METT is questionable unless there is a properly set up and funded 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

ER-P intervention to address drivers and enhance carbon stocks (ha)		Environmental impacts and mitigation	
	Activities and potential positive impact	Potential negative impact	Mitigation
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
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	
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	

ER-P intervention to address drivers and enhance carbon stocks (ha)		Environmental impacts and mitigation	
	Activities and potential positive impact	Potential negative impact	Mitigation
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	

4.2 Feedback grievance redress mechanism

a) The existing FGRM in Fiji

The FGRM has been designed to ensure that anticipated feedback and possible grievances are addressed and redressed transparently and equitably so that the ER-P provides both carbon and non-carbon benefits to all ER-P stakeholders. Consultations undertaken to prepare this FGRM have found that disputes associated with boundary demarcation disputes, access to forest resources and illegal logging can generally be resolved via the customary system to resolve disputes among the iTaukei. However, for disputes between the TLTB and iTaukei involving leasing conditions (e, g, former wanting to issue 99-year leases and the latter only 30 years) it has been found that third party mediation is necessary because TLTB lacks the independence to effectively redress such a grievance. Importantly, it has also been concluded that reliance on traditional dispute resolution systems cannot resolve disputes that are complex and may involve multi-parties and multi-issues.

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 GoF of forest 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.

A summary of the FGRM is found in Section 4.2.2 and in Section 14 of the ER-PD. 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. A particular issue for FGRM, consultation and decision-making is that the TLTB recognizes that for agreement only 60% of a Matagali need to agree[76] decisions on land and benefit sharing issues.

- **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.

[76] Land Use Regulations, r5, Land-owning 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 Land Use Regulations, r2: Qualifying Member means a member of an LOU as verified by the Native Land and Fisheries Commission, who is a permanent resident of Fiji over the age of 18 years.

- **Sustainability and Ownership –** division of responsibility between individuals, LoUs, other forest-users, and the government over maintenance of ER-P sites and its effective regulation and implementation.
- **REDD+/Conservation Lease Terms and Enforcement** – Length, authority, and requirements for "specialized" lease terms (e.g., are they properly and appropriately conducted for customary consideration for the purposes of FPIC).
- **Coordination –** Lack of meaningful consultation with women and vulnerable groups and non-iTaukei 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 HEP, rural-urban water supply projects, and upgraded roads linking forest communities with lowland areas.

The geographic scope for the FGRM will be not just be related to MOF but other Sectors including Ministry of Agriculture, Ministry of Lands and the private sector because of the interconnectivity of different REDD+ landscapes e.g. mangrove. 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, REDD+ 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 R+LO 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 so as 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 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 a 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 five relatively simple steps as summarized in Table 4.4 below.

Table 4.4 Summary of FGRM Processes

FGRM step	Process
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 grievances is comparable to other traditional GRMs in Fiji, which are initially embedded in village governance processes, so as 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.
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

FGRM step	Process
	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?
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 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.
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.
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.

The FGRM needs to be readily accessible to all stakeholders including women and vulnerable people who are not competent in reading or writing, 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 Community REDD+ Agreement (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 the SESA consultation 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.

4.2.2 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.

While the ER-P has been designed to ensure that any possible negative impacts are mitigated the WB's Safeguard OPs require it to adopt a precautionary approach. Since resuming its presence in Fiji the WB has not financed any projects that require the use of safeguards to mitigate negative impacts the ADB via its Urban Water Supply and Wastewater Management Investment Program has prepared a timeline for the resolution of grievances that have been accepted by the GoF. The procedures for grievance redress and timeline are included in the Table 4.5 below.

Table 4.5 Example of procedures for grievance redress and timeline from the ADB Urban and Wastewater Management Investment Program

Stage	Processes	Time
1	Affected Person takes grievance to the REDD+ Unit focal point responsible for addressing grievances.	Any Time
2	Focal point reviews and find solutions to problem in consultation with relevant agencies	15 days
3	Focal point reports decision taken to the AP seeking grievance redress	07 days
If unresolved or dissatisfied with the outcome of the complaint there is the option of seeking a review and a decision as to whether the dispute can be resolved.		
4	AP seeking grievance redress who is dissatisfied with the outcome request a review and decision as to whether the grievance can be resolved	15 days from the day a review is sought
5	Focal point with the REDD+ Unit reviews the decision to assess the merits or otherwise of the AP	30 days
6	Focal point reports back the decision to the AP	07 days
If the grievance is unresolved the AP (including at any stage) can take the matter to an appropriate court in Fiji (the court is obliged to receive this complaint and the Project/Program is legally obliged to pay all court-related costs)		

It can be seen from the above timeline that it would take up to 2.5 months for such grievances to be resolved. But how long such grievances would take to be resolved depends entirely on the courts and not the project or program.

Most of the ER-P interventions revolve around the Forest Care Groups, YMSTs, Land Care Groups and Commodity Cluster Groups 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 Forest Care Groups, YMSTs, Land Care Groups will not be 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 Forest Care Groups, YMSTs, Land Care Groups would need to assist affected people receive any payments as reflected in the Entitlement Matrix of the Resettlement Policy Framework (RPF) prepared for the ER-P and reflected in any Resettlement Action Plan. This assistance would need to extend to covering any costs involved – transport, accommodation, appellant fees – by affected persons seeking grievance redress as per the Resettlement Action Plan and also reflected in any Environmental Management Development Plan. The Forest Care Groups, YMSTs, Land Care Groups would not have to pay costs associated with complaints that do not trigger either environmental or social safeguards.

For details, see Annex 14.1 of the ER-PD - Feedback Grievance and Redress Mechanism (FGRM), Policies and Procedures

4.3 World Bank Operational Policies and safeguards

The Program is expected to trigger the following Operational Policies (OPs): related to environmental safeguards OP 4.01; natural habitats OP 4.04; indigenous peoples OP4.10; related to physical cultural resources OP 4.11; related to involuntary resettlement OP 4.12 and relating to forests OP 4.36. Operational policies, notably those relating to gender and development (OP 4.20) are not safeguard policies *per se* but rather cross-cutting issues to ensure the social inclusiveness of projects wholly or partially financed or supported by the World Bank. Additionally the Cancun Safeguards also apply to this Program and promotes and support safeguards that are not explicitly articulated through the above-mentioned OPs of the WB will be utilized accordingly. The Safeguards as they apply to this Program are included in Table 4.6 below.

There are donor financed infrastructure projects in several of the 11 provinces (See Table 4.9), most notably there are nine small hydropower projects (HPPs) in the upland area of Viti Levu, but there are also transport projects. The hydropower projects trigger more significant environmental and social safeguards because they are located close to watershed areas are forested and some are located very close to protected area nature reserves with international levels of biodiversity e.g. the Waivaka (32MW) HPP.

The FCPF project team is not required to review or monitor other development projects for impacts and safeguards compliance in the ER-P Environmental and Social Management Framework (ESMF) (there are a number of development projects with funding, for example, from JICA, ADB, EIB, WB, IFAD, EU, GIZ etc.), within Fiji; the assumption is that these projects will be required to follow their own safeguards.

Because the Program is being supported by the World Bank an ESMF is in the final process of being prepared. This is to ensure specific program activities during implementation comply World Bank Safeguard policies. The EMSF *inter alia* includes the following sections and conforms to ESMF required by the WB:

- Background and Program Description (to include components);
- Purpose and Processing of ESMF (purpose and rationale for ESMF and institutional and implementation arrangements);
- Methodology Utilized (detailed in-depth literature review, interactive discussions, field visits, and preparation of ESMF);
- Baseline Social and Environmental Data (location, physical characteristics, and socio-economic background;
- Policy and Regulatory Framework (to include both WB and GoF policies that will contribute to the regulatory framework);
- WB and GoF Safeguard Policies (To include identification of gaps and proposed gap-filling measures between WB and GoF policies);

- Potential Positive and Negative Impacts (Positive impacts, potential adverse environmental impacts, social impacts, environmental and social management processes, program environmental and social screening, environmental and social instruments, monitoring plans and indicators, and monitoring roles and responsibilities);
- Coordination and Implementation (REDD+ review, environmental and social screening, compliance and reporting); and
- Capacity Building and Technical Assistance (Implementation and management capacity for developing ESIAs and ESMPs); and Consultation and Disclosure (ESMF disclosure, public consultation, feedback and grievance redress mechanism, and establishment of grievance redress committee).

Table 4.6 Summary of triggered World Bank Operational Policies[77]

World Bank Safeguard Policies	Triggered	Proposed approach
Environmental Assessment OP/BP 4.01	Yes	The Strategic Environmental and Social Assessment (SESA) has identified potential environmental impacts including: 1) soil erosion on sloping areas, and from poor maintenance tracks; 2) loss of soil fertility due to removal of biomass in harvesting; 3) health risks associated with the use of pesticides and herbicides; 4) loss of biodiversity and habitat fragmentation due to conversion of natural forests into plantations of pine by lease holding private sector companies; and 5) possible invasive plants if agroforestry or NTFP species are introduced without guidance. 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 ERPD, including the screening criteria, procedures and institutional responsibilities. The specific process 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.
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 ERPD includes activities in potential High Conservation Value Forests. The ESMF includes provisions to 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 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 ERPD 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

[77] This table updates the 2012 "Integrated Safeguards Data Sheet" prepared by World Bank for the FCPF Grant.

World Bank Safeguard Policies	Triggered	Proposed approach
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. Impacts and risks of any potential use of chemicals in forest management and agroforestry activities, if needed, will be analyzed 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 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 spiritual connections, it is possible that in isolated cases REDD+ activities could interfere with villager defined sacred forest 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	Yes	OP4.10 is triggered, however, for the ER-P the majority of the population are iTaukei and no IPPF is prepared rather elements of the IPPF will be embedded in the ESMF, RPF and Process Framework.
Involuntary Resettlement OP/BP 4.12	Yes	OP/BP 4.12 on Involuntary Resettlement is triggered to ensure affected persons (including land owners, 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. The SESA has identified and assessed the possibility of any involuntary land acquisition or restriction of access to natural resources that may occur, and management processes are included in the ESMF. A Resettlement Policy Framework (RPF) has been prepared which lays down 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 high potential for an involuntary restriction of access (for example, NTFPs, fuelwood collection) to legally designated production and protection forest areas and protected areas resulting in adverse impacts on the livelihoods of affected persons. A Process Framework (PF) has been prepared to guide procedures to identify, assess, minimize and mitigate potential adverse impacts on local livelihoods by restriction of access. The PF is to ensure adequate consultations with specific communities in specific locations for proposed interventions through the preparation of process plans when working with the management board entities and with a benefit sharing agreement mechanism for the natural resources use. 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 in specific locations including through the Community REDD+ Agreement (CRA) process with the Yaubula Management Support Teams (YMST) and locally prioritized forest management plans 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. OP/BP 4.12 on Involuntary Resettlement is triggered to ensure affected persons (including land owners, 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.

World Bank Safeguard Policies	Triggered	Proposed approach
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 located in disputed areas as defined in the policy.

4.3.1 Involuntary Resettlement

A resettlement plan or an abbreviated plan cannot be prepared since the numbers and location of displaced persons are not known at this stage. Instead, a Resettlement Policy Framework is needed to address the various types of land acquisition and resettlement that may occur during the program. The Resettlement Policy Framework lays down 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 these persons. It further describes the planning and documentation requirements for such activities under the program.

For resettlement the proposed Resettlement Policy Framework includes a Process Framework. The Process Framework will particularly help to assess and address restrictions in access to natural resources for example in Nature Reserves or Forest Reserves[78] and remedies to these restrictions on a case-by-case basis. It addresses two World Bank safeguard policies: OP 4.12 on involuntary resettlement and OP 4.10 on indigenous peoples.

Negative impacts that may have to be mitigated include the following:

- Restricted access to forest land will be overcome with training courses on how to increase production on remaining forest land;
- The longer harvesting cycle will result in deferred income but the costs of deferment can be overcome through micro-financing; and
- The longer harvesting cycles may also impact negatively on community income and local waged employment and reduced incomes but specific measures to offset these impacts will be introduced in the improved climate smart agriculture.

While resettlement is not envisaged there may well be instances of changes or restrictions of use to existing forest land including plantations that will result in some resettlement issues[79] for small communities of forest dwellers or households who may be partially depended on NTFPs or some restrictions may be proposed from the forest companies[80] and such resettlement is not eligible for program funding which is regulated already by the government. The Process Framework describes how the impacts of restrictions will be mitigated if and when OP4.12 is triggered although in the first instance the Process Framework will attempt to ascertain via

[78] Forest Decree 1992 Under Part IV utilisation of Forest Resources Section 8 access to and use of forest resources can in theory at least be restricted.

[79] This does not mean physical displacement or movement i.e. not a replication of the house or hhs. It does include a change of access to or where previous access was allowed to collect, for example NTFPs, was not stopped or has been allowed under custom.

[80] 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.

the FGRM where issues surrounding such impacts can be mitigated without having to rely on OP4.12. The cost of compensation and other allowances will be met by the GoF and not this Program. Similarly reforestation or afforestation may result in the loss of or change to existing productive agricultural land. A particular issue in Fiji is that the TLTB recognizes that for agreement only 60% of a Matagali need to agree[81] decisions on land and benefit sharing issues. In this instance the FGRM would be used and if no agreement is reached then a Process Framework be triggered (see the separate RPF and Process Framework for more details). Any compensation for such activities will need to be met by the GoF and not the Program.

4.3.2 UNFCCC Safeguards

According to the Carbon Fund Methodological Framework the World Bank's safeguards (OPs – see Table 4.6 above) must be adhered to for ER-Program, but the UNFCCC safeguards should also be "promoted."[82] This is also echoed in the ER-PIN. The seven UNFCCC safeguards decided by the Conference of Parties (COP) at Cancun (COP16) comprise the following: a) consistency with national forest Programs and objectives of relevant international conventions/agreements b) Transparent and Effective Governance, c) Knowledge and Rights of Indigenous People and Local Communities, d) Full and Effective Participation, e) Enhanced Social and Environmental Benefits, f) and g) Risk of Reversal, Risk of Displacements. Although there is no safeguard on "gender" it is understood as an important crosscutting topic by both the Carbon Fund/World Bank and UNFCCC.

The ER Program meets the World Bank safeguards with the relevant safeguards policies triggered and promotes and supports Cancun Safeguards included in UNFCCC. This is reflected in the Table 4.7 below:

Table 4.7 Comparison between UNFCCC and World Bank safeguard polices and procedures

UNFCCC Safeguards (Cancun Safeguards)	Relevant World Bank Safeguard Policies and Procedures
(a) That actions complement or are consistent with the objectives of national forest programs and relevant international conventions and agreements.	**OP 4.01 on Environmental Assessment**, in particular paragraph ("para.") 3 **OP 4.36 on Forests**, in particular paras. 14 and 6
(b) Transparent and effective national forest governance structures, taking into account national legislation and sovereignty.	**Access to Information** policy, in particular para. 1 **OP 4.01 on Environmental Assessment**, in particular paras. 3 and 13 **OP 4.36 on Forests**, in particular para. 14 **BP 4.04 on Natural Habitats**, in particular para. 5 **BP 4.10 on Indigenous Peoples**, in particular para. 10 **BP 4.12 on Involuntary Resettlement**, in particular para. 2
(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	**OP 4.10 on Indigenous Peoples**, in particular para. 1; para. 16 and footnote 17; paras. 19 to 21 **OP 4.36 on Forests**, in particular paras. 10 and 14 **BP 4.36 on Forests**, in particular para. 4

[81] Land Use Regulations, r5, Land-owning 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 Land Use Regulations, r2: Qualifying Member means a member of an LOU as verified by the Native Land and Fisheries Commission, who is a permanent resident of Fiji over the age of 18 years.

[82] See CF (2013) Methodological Framework, Point 4.1 on the Safeguards: "With the World Bank acting as both the Trustee and the Delivery Partner of the Carbon Fund, all ER Programs will need to meet applicable World Bank policies and procedures. ER Programs also should promote and support the safeguards included in the UNFCCC guidance on REDD+."

UNFCCC Safeguards (Cancun Safeguards)	Relevant World Bank Safeguard Policies and Procedures
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.	**OP 4.01 on Environmental Assessment**, in particular paras. 14 and 15 **OP 4.10 on Indigenous Peoples**, in particular para. 1 and footnote 4 **OP 4.04 on Natural Habitats**, in particular para. 10 **OP 4.12 on Involuntary Resettlement**, in particular para. 7 **OP 4.36 on Forests**, in particular paras. 11 and 12
(e) Actions are consistent with the conservation of natural forests and biological diversity, ensuring that actions referred to in paragraph 70 of this decision are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits.	**OP 4.04 on Natural Habitats**, in particular para. 1 and Annex A, para. 1(a); para. 4 and Annex A, para. 1(c) **OP 4.36 on Forests**, in particular paras. 1, 2, 5, and 7
(f) Actions to address the risks of reversals.	**OP 4.01 on Environmental Assessment**, in particular paras. 1 and 2 **OP 4.36 on Forests**, in particular para. 14
(g) Actions to reduce displacement of emissions.	**OP 4.01 on Environmental Assessment**, in particular para. 2 and footnote 3; para. 3 and footnote 5 **OP 4.04 on Natural Habitats**, in particular para. 4 and Annex A, para. 1(c)

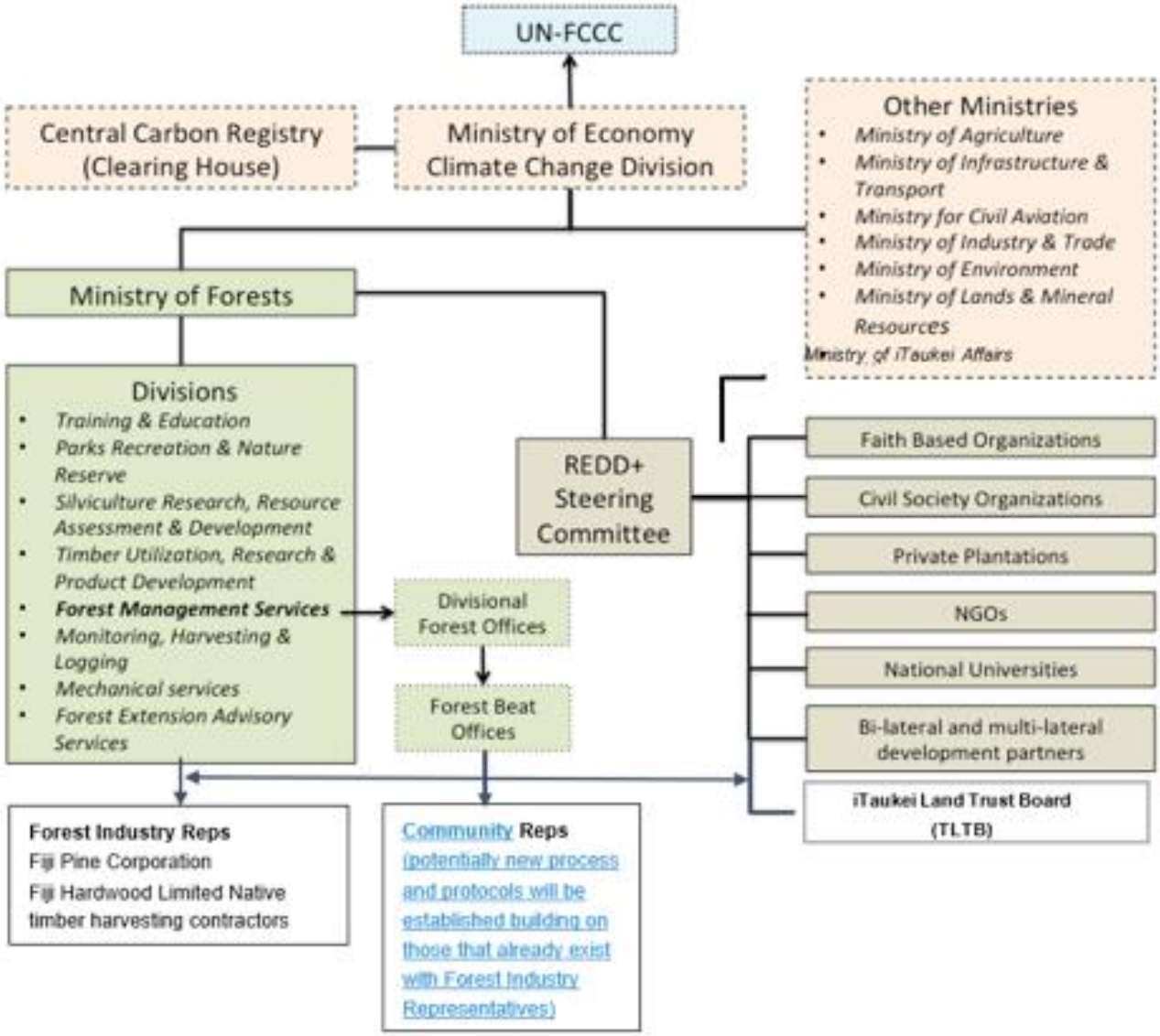
4.3.3 Institutional arrangements for implementing safeguards

The Ministry of Forestry is the lead agency and national REDD+ focal point responsible to coordinate and implement REDD+ activities. The Conservator of Forests approves all REDD+ ER-P activity proposals and activities after consulting with the REDD+ Steering Committee who will also have responsibilities on safeguard issues. A Safeguards Technical 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 Ministry of Forestry has been working closely with the Safeguards Technical Working Group, Ministry of 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.

The administration of government's program is divided into 4 main divisions, i.e. Central, Eastern, Western, and Northern. The ER-P area, covering Viti Levu and Vanua Levu and Taveuni, includes the central, western and northern divisions, which are divided into 11 provinces (Yasana), 155 districts (Tikina) and 982 registered villages (Koro).

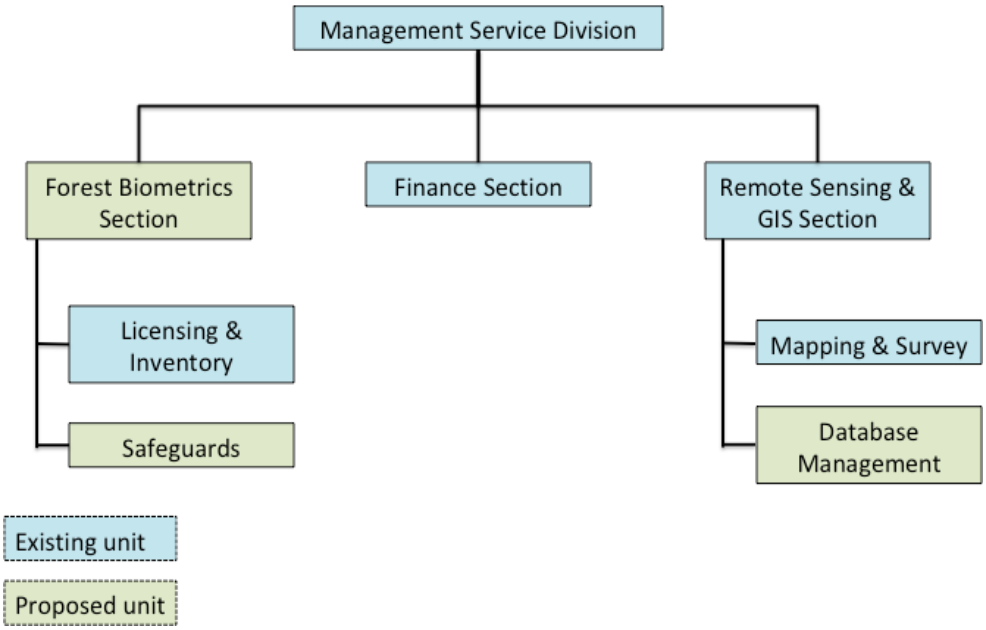
For the implementation of forest and environmental related safeguards the ER-P supports a process for bottom-up data collection from the Mataqali for forest cover monitoring and reporting. Fiji is seeking support from the providers of ODA to improved existing Forest Management System of the MOF. The 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) see Figure 4.2 below.

Figure 4.2 Institutional arrangements for the national forest monitoring



The Management Services Division under the Ministry of Forestry 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 the Management Services Division is presented in Figure 4.3 below 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.

Figure 4.3 Management Services Division, responsibilities also include monitoring of safeguards



4.3.4 Capacity building to support the implementation of safeguards

At the national, provincial and district level most staff that are likely to be involved with REDD+ on an ongoing basis are not 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. However, 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 less knowledge of safeguard policies and processes primarily because they 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, it is envisaged that the ER-Program will have to be involved in building the capacity to understand and implement safeguards at all levels. The capacity building will need to involve additional training, development of safeguard operation manuals (or equivalent).

4.4 Independent third party monitoring

An independent monitoring team will be procured by the Fiji REDD+ Office to undertake periodic annual monitoring 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, RPF, and Process Framework. 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, forest management entities, the management plans, the CRAs, implementation

of BSMs and to generally review and document field activities to ensure field compliance with the environmental and social safeguards and in particular to review that only minimal conversion of natural forest is being adhered to. Information on the implementation of safeguards is summarized in the following **Table 4.8** and will comprise information on the following:

Table 4.8 Overview of the proposed 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 DRWG safeguards units), 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, RPF, PF and their associated outputs e.g. CRAs (including benefit-sharing agreements),
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, where a properly constituted protected area management board or unit is in place the management board could undertake to the WWF/IUCN Management Effectiveness Tracking Tool (METT)[83]. 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 assessment process (an EIA or at least a biodiversity survey to support the proposal of a CRA) that is expected to be included in the drawing up or proposal of 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 private sector or community 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 will include 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

[83] The METT is an internationally used management tool and is standard on all GEF projects (and most WB, KfW, IUCN WWF projects) that involve investments into PAs. It is most effective when it is undertaken as a joint exercise between the managers and communities of the involved in and around the PA. It is already in use in Fiji. The latest version is: Stolton, S. and N. Dudley. (2016) METT Handbook: A guide to using the Management Effectiveness Tracking Tool (METT), WWF-UK.

M&E steps	M&E Process
	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 will have a designated safeguards coordinator to whom implementation units would report will collect safeguards-related information. The CRA contribute to the sustainable forest use 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 resource owners living either inside or close to a protected area of forest reserve forest.
Independent Monitoring of the REDD+ Registry	Following the requirements of the Methodological Framework the REDD+ Registry will require independent monitoring f (see section 18.2 of the Framework for further details).

4.5 Safeguard reporting arrangements

The FCPF ERPA General Conditions already require that the Program Entity submits as a separate annex to each ER Monitoring Report "evidence satisfactory to the Trustee that the ER Program Measure(s) are being implemented in accordance with the Safeguards Plans." This means the Program Entity is required to self-report on compliance of ER Program Measure(s) with WB safeguards. The FCPF Methodological Framework requires (Criterion 25) that (i) the Safeguards Plans for an ER Program include "appropriate monitoring arrangements" for safeguard information; and (ii) the (self-reported) information on the implementation of the Safeguards Plans (provided as a separate annex to each ER Monitoring Report) is regularly collected, reported and publicly disclosed. Currently, verification of emission reductions (volume generated under the ER Program) is expected every 2-3 years (due to high cost of related monitoring and verification efforts). It is recommended that self-reporting on safeguard compliance may be done more frequently (e.g. annually).

Progress towards achievement of the program development objectives including safeguards will be measured through an M&E system and reporting on the ESMF will be an integral part of that and will be supported under the program (See **Table 4.8** above). Indicators to be measured are listed in the Results Framework (See Table 4.14 of the ER-PD Activity Indicators for Component 3 for the detailed indicators). M&E will be an integral part of the program management and decision-making processes, e.g. to feed lessons learned quickly into revising systems, guidelines, and procedures, as well as the training program of the project. Participatory M&E tools will be used at the village level. For sustainability, M&E at higher levels will be developed as a routine function of government agencies at those levels, rather than as a project-specific M&E. 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 in compliance.

Monitoring and evaluation will cover both program performance monitoring and effectiveness monitoring. Program performance monitoring will determine the progress in program implementation against established benchmarks and milestones indicated in the program document and work plans.

To encourage broad-based participation and to particularly target the poor and vulnerable, 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 and for identifying potential indicators:

- Disaggregate information by gender, ethnic group, and household socio-economic status;
- Involve villagers in designing the monitoring program, collecting data, and drawing conclusions from the data;
- Continue feedback meetings after fieldwork and incorporate recommendations into systems development;
- Biodiversity monitoring will include using the Management Effectiveness Management Tool (METT)[84] for protected areas where there is functioning management board;
- Keep disaggregated records of involvement and participation in different activities at village level and also in the databases;
- Note successful and unsuccessful strategies for future reference in curriculum development, field implementation, and other project areas; and
- Identify indicators and tools to measure the project's impacts on women, vulnerable groups, and the poor.

Monitoring and evaluation will cover both program performance monitoring and effectiveness monitoring and MMR. Program performance monitoring will determine the progress in program implementation against established benchmarks and milestones indicated in the program document and work plans. The MRV will include monitoring reporting and verification of forest cover and will take information from the provincial forest management system and from the central use of remote sensing imagery.

Community forest monitoring is expected to be undertaken through the Village based forest monitoring system which is being introduced in all provinces (See Table 9-1 and Section 9.3 of the ER-PD where participatory forest monitoring is discussed).

4.5.1 National Safeguards Information System

Fiji has begun work on designing a draft national safeguards information system (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 is currently under development and is expected to be completed in a phased approach over the next three to five years and will 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 will identify 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

[84] The METT is an internationally used management tool and is standard on all GEF projects (and most WB, KfW, IUCN WWF projects) that involve investments into PAs. It is most effective when it is undertaken as a joint exercise between the managers and communities of the involved in and around the PA. The latest version is: Stolton, S. and N. Dudley. (2016) METT Handbook: A guide to using the Management Effectiveness Tracking Tool (METT), WWF-UK.

provincial level safeguard activities to be fed at the national level SIS and for subsequent inclusion in the Summary of Information (SOI). The Ministry of Forestry is set to establish a SIS and 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.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.

4.5.2 Gender in the program area

Gender equality has not yet been mainstreamed in reality. Rural women's concerns, are not yet taken seriously enough in areas that greatly impact their livelihoods: land, agriculture and forestry. These remain male-dominated professions where gender mainstreaming has yet to take place.

Women, for example, maintain a greater interest in the forest in terms of NTFPs. More women than men will go to the forest to search for NTFPs, whether for sale or for domestic use. Women are more likely to have knowledge of different forest foods compared to men. Thus, women are more concerned about reducing availability of both NTFPs and of firewood in their areas. While NTFP collection is fairly arduous work, and does not result in large incomes, as mentioned women require steadier sources of income to make food purchases for their families.

At the local level, it is noticeable that women tend to speak up less in mixed gender groups than when they are in women-only groups.

The objective of the Gender Action Plan (GAP) is to promote women's participation in the program and share in the benefits, maximize positive gender equality impacts as well mitigate possible risks and negative impacts. The GAP has three approaches: (1) provide opportunities for and strengthen the role of women in local economic activities; (2) disseminate information about environmental sustainability and social risks to men and women; and (3) increase female representation in the sector and in decision making positions.

These strategies seek to address limited availability of sustainable livelihoods and gender equality in livelihood opportunities, unequal impact from the poor environmental sanitation due to female higher exposure and gender defined responsibilities, low female representation in government institutions and decision making processes.

4.5.3 Environmental Safeguards

An environmental assessment was carried out and an ESMF is to be prepared focusing on the proposed ER-P activities (see Table 4.2 and Table 4.3). No pesticides will be procured under the program, and the ESMF includes Environmental Protection Guidelines and will ensure that critical natural habitats and sites of cultural significance are screened out as part of the site selection process. The program as a whole deals with sustainable forestry development, Program activities would be carried out in accordance with the ESMF.

4.5.4 Social Safeguards

No resettlement and no land acquisition is expected under the program. Since exact impacts cannot be determined before hand, a draft Resettlement Policy Framework has been prepared to address any possible impacts mentioned above in accordance with the provisions of OP 4.12 on Involuntary Resettlement.

4.6 Other projects and program safeguards

For other projects financed by the government budget and located within the ERP area and contributing to the achievement of the ERP objectives, they need to adopt and implement safeguards of the program. For

the similar projects that are financed by the Bank they need to follow their own safeguards requirements which are relevant to the ERP.

See Table 4.9 below for other significant projects and programs in the ER-P Region.

Table 4.9 Significant proposed and on-going ministry and donor projects in the ER-P accounting region

Project/ program	Province	Safeguards	Status	Overlap	Summary of project	Comments/ issues
Community-based Integrated Natural Resource Management Project	Ra and Tailevu (both ER-P provinces)	GEF/ FAO	On-going	Some		
International Tropical Timber Organisation (ITTO) Project	Implemented area: Rewa Delta, six project villages Viti Levu	GOF	On-going to end of 2019	Some	Coastal rehabilitation of mangroves	Budget of about USD249,000
Sandalwood development	Multiple	GOF	On-going	Some	Sustainable management of the sandalwood species; total area covered is 185 ha with 74,000 seedlings already planted. Apart from this, ACIAR is providing separate funds for domestication and breeding of Santalum yasi	Small annual research project FJD100,000
Reforestation of Degraded Forests (RDF) Includes the 4 million tree project	All 3 Divisions	GOF	On-going	Some	Rehabilitate degraded/ vulnerable forest area and Improve Fiji's forest cover. 2015 Target 150ha; Achievement-164.2ha 2016 Target 500ha; Achievement 25ha 2016-2017 Target 500ha Achievement-506ha 2017-2018 Target 500ha Achievement 300ha	
Reforestation of indigenous species (activities included in the RDF project activities above)	As above	GOF	On-going	Some	Revive local indigenous species	Small project
HPP projects in Namosi 3 schemes total about 30MW Hydro Fiji/ Fiji Electricity Authority	Namosi	GOF	On-going	In ER-P area	For the three projects involved, there are altogether 22 landowning units Wainikoroiluva Dam – 11 landowning units; Wainikovu Dam – 7 landowning units; Waivaka Dam – 4 landowning units	Funding from 2017-2020
Nawaka HPP 3rd Scheme	Namosi	GOF	Funded	In ER-P area	Funding for construction to start 2020	Funding from 2020-2022
Lower Ba Development 3 HPPs 49MW	Ba	GOF/ EIB		In ER-P area		EIB funding design

Project/ program	Province	Safeguards	Status	Overlap	Summary of project	Comments/ issues
Qaliwana Upper Wailoa Diversion Hydro Project 44M	Nadroga-Navosa	GOF / EIB	Planning/ Design	In ER-P area	The project includes a new plant, Qaliwana hydropower, and the upgrading of the existing Nadarivatu hydroelectric scheme assignment is financed and managed by the European Investment Bank	EIB funding design
Waivaka HPP 32MW	Namosi	GOF and expected JICA funding	Planning	In ER-P area	Initial scoping feasibility and initial EIA completed. JICA's top ranked HPP scheme	
Fiji Agricultural Partnership Project (IFAD)	Interior of Viti Levu; Seven districts of the Provinces of Ba, Nadroga/ Navosa and Naitasiri	IFAD Category B project	On-going	Some overlap in the area and some minor overlap of the proposed activities	Project to promote agricultural sector growth in remote areas; poor communities located in the interior of Viti Levu	
Ridge to Reef Project	Viti Levu and Vanua Levu	UNDP	Closes Dec 2019	Some but project closes shortly	Priority catchments are Ba River, Tuva River and Waidina River/Rewa Delta on Viti Levu and Labasa River, Vunivia River and Tunuloa district on Vanua Levu; adoption of appropriate sustainable land use practices and riparian restoration in adjoining upstream watersheds as well as terrestrial protected areas, restored and rehabilitated forests.	
Fiji Invasive Alien Species Project	Taveuni island and near by islets	UNDP/ GEF	Closes 2022	Yes some complementary activities on Taveuni	Building Capacities to Address Invasive Alien Species to Enhance the Chances of Long-term Survival of Terrestrial Endemic and Threatened Species on Taveuni Island and surrounding Islets	GEF trust fund USD 3,502,968; UNDP USD101,096 GOF USD 26,763,418
Community-based Integrated Natural Resource Management Project	Ra and Tailevua provinces	GEF/ FAO	Closes 2021	Yes some in particular provinces	To promote community-based integrated natural resource management at landscape level to reduce land degradation, enhance carbon stocks and strengthen local livelihoods in Ra and Tailevu provinces; Ministry of iTaukei Affairs, Ministry of Agriculture, Ministry of Forests, Department of Environment, Ministry of Economy	

Project/ program	Province	Safeguards	Status	Overlap	Summary of project	Comments/ issues
Action Against Desertification	Viti Levu and Vanua Levu	FAO	On-going	Some activities may compliment the ER-P	Small project. Capacity building for government involved in land forest management and restoration at the landscape level. Includes forest restoration and alternatives livelihood activities include agroforestry and vanilla which are included in the ER-P activities	
Strengthening climate resilience of communities for food and nutrition security		FAO and EU	2018 onwards to 2020	Some activities may compliment the ER-P	Capacity building hopes to support women subsistence farmers in particular	

4.7 Summary of the potential ER-P social and environmental issues and mitigation measures

Land availability and security of lease titles is a key issue for some communities and famers in Fiji. The situation varies across the provinces, and can be of great concern in some areas of some provinces e.g. Cakuadrove (includes Taveuni) or Western Division due to the physical land use constraints including slopes, stoniness droughts etc. Changes to land lease conditions is the main mitigation for insecure title, however this is not expected to be changed in the short term.

Quality of available agricultural land is also an issue in some parts of the Fiji and is a particular concern in upland areas due to slope constraints and in the dryer western side of Viti Levu and Lambasa area of Vanua Levu where a combination of risk of drought, fire, slopes, stony or degraded land are issues.

The summary Table 4.10 that follows provides an overview of the issues raised in the SESA and provides some potential solutions, however, it should be noted that some of the proposed solutions will be challenging to implement in practice. They would require significant ODA support and government commitment at all different levels to be implemented.

Some of the solutions are closely interrelated and require that actions be taken on several fronts at once. For example, it does not help much to change PLRs, if the institutional systems and mechanism to implement them do have the capacity to introduce the change.

REDD+ cannot and should not be seen as a panacea that will solve the challenges in the forestry sector in Fiji; at the same time, however, without a number of fundamental changes in the institutional and PLR framework – the overall system of forest governance – REDD+ is much less likely to deliver expected benefits, not to speak of multiple benefits for poor, forest-dependent communities.

SESA identifies five general themes for consideration and activities in the ER-P. for implementation to be successful the activities will need to supported by the different but interrelated sectors that already work with the forestry sector, including agriculture, energy and infrastructure.

- Legislative reform – continuing the updating process to take account of climate change;
- Strengthening of enforcement, certification and compliance – continue work on supporting implementation of guidelines such as the FiJi Forest Harvesting Code of Practice, continue work on Fiji's Forest Certification and support for encouraging compliance for land use planning in degraded areas;
- Community-based resource management this should include mangroves;
- Institutional strengthening on monitoring of forest resources and research – Fiji faces some major challenges related to climate change and the environment; and
- Education and awareness, and in particular strengthening the involvement of women.

Table 4.10 Summary SEAS findings on the challenges facing the ER-P and potential solutions

#	Summary of main findings of the SESA
1	**Gender:** The GAP that has been developed for the ER-P and builds upon the strengths of the WB supported study[85] it will enhance how women can benefit and be involved ER-P. This may need some updates further definition to the proposed ER-PD activities could go further to ensure that women are involved and can benefit.
2	**Inclusion of mangroves**: The SESA has stressed that carbon emission reduction activities should not simply be based on Fiji's forests in the ER-P accounting area, but also its critical coastal mangrove areas where much of the existing and vital tourism development has been taking place leading to a decline in the critical mangrove area.
3	**Approaches to forest management:** The SESA recommends that the conceptual confusion that might result from articulating the ER-P as though it is a REDD+ Program to conserve forests rather than manage the forests and mangroves to generate a reduction in carbon emissions should be clarified because there are some instances where stakeholders in the proposed ER-P have confused the two approaches.
4	**Advance payments:** The SESA has demonstrated that villagers require some upfront payments (an advance) for ER-P related activities. It is difficult to expect any village household to rely simply on results-based payments. Demarcation of boundaries between landowning groups and including leaseholders in the ER-P is also another positive impact that has been identified in this SESA. Given that during the course of some of the consultations facilitated for preparing this SESA it is highly recommended that the ER-P accord this activity the priority it warrants.
5	**Livelihood changes due to changes to the use of forests** The socio-economic impacts may occur especially those associated with possible restricted access to natural resources to the forests and mangroves in the proposed ER-P accounting area. As iTaukei own about 88% of all the land and therefore most in the ER-P accounting area it is they who can decide to do as they please with this land. This includes logging in all forests with the exception of the closed forests that constitute 30.47% of the total land area in the ER-P accounting area. If the ER-P is going to encourage the iTaukei to log less and accrue carbon financial benefits from reducing carbon emissions then there will need to be more sustainable approaches to forest management. This in the short-term will affect the incomes of those communities who rely for part of their livelihoods on the sale of logged trees from the forests. There are also conceivably negative impacts on those households, groups residing within non-iTaukei villages who are involved in production forestry, notably pine and mahogany forestry, if attempts are made to encourage such households to extend the production cycle to maximize the objectives of the ER-P.
6	**Livelihood changes of access to forest and plantation and collection of NTFPs:** If there are to be restrictions on the households that rely to some extent on NTFPs from forests or areas of plantation for their livelihoods and will be some potential negative impacts that will need to be mitigated as there will be households who go hunting and fishing or are raising livestock in the forests or collecting firewood for either domestic use or for sale, or other NTFPs.
7	**Livelihood changes associated with the introduction of land use planning and enforcement,** Land use planning would be a new activity in to many communities, if presented and handled in an appropriate participatory way then benefits should come from less deforestation, less use of unsuitable land and degraded land. However land use planning becomes a top down approach it will not be followed.
	Introduction of livelihood improving substitute crops and climate smart crops: Substitution of agricultural crops as proposed in the ER-P e.g. substitution of vanilla for kava is technically challenging and unlikely to work, kava is easy to grow has a ready market is easy to transport, growing and processing of vanilla is technically demanding. The production of kava (and taro) could be modified to have less

[85] Gender Analysis in Fiji (2019): FCPF Capacity Building on REDD+ Forest-Dependent Indigenous Peoples in East Asia Pacific 2019.

#	Summary of main findings of the SESA
	environmental impact. Agroforestry should be adopted to meet Fijian conditions, wide spread adoption of "alley cropping" has already proved to be challenging in Fiji (just as in other countries). Other climate smart solutions which are already supported by MOA could be more easily introduced than by the MOF trying to do things on its own.
8	**Collaboration between stakeholders**: One of the most important objectives of the ER-P is to promote collaboration among and between stakeholders not conflict and the SESA strongly recommends that sensitive issues associated with lease holdings be very carefully analysed to ensure there is no inter-ethnic conflict or at the very least minimize such tensions.
9	**Trialling the BSM/ BSP:** The SESA suggests that the ER-P could benefit from monitoring and evaluating which of these mechanisms has or will generate the most efficacious outcomes. Thus, another recommendation of the SESA is that proposed Benefit Sharing Mechanisms (BSM) should be trialled. The mode of operation of the BSM and eventually the BSP will be a challenge as currently only 20 widely spaced districts targeted for activities under the ER-PD.
10	**Continue with awareness raising:** Many if not most of the potential beneficiaries of the ER-P still do not understand much if anything at all about the objectives of the National REDD+ Program let alone the specific objectives of the ER-P. Therefore, as a concluding comment the SESA strongly recommends that more effort be made to disseminate information about REDD+ and the proposed ER-P and there be a continued emphasis on the non-carbon benefits

A summary of the social issues of concern identified through the SESA's comprehensive analysis is provided in Table 4.2 and Table 4.3 above and provides a summary of the additional social and environmental risks and mitigations included in the ER-P. 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 and impacts on biodiversity and biodiversity connectivity.

Plantation development and the conversion of natural forests: The biodiversity of the region contains notable forests with high biodiversity value especially on Taveuni. An important environmental concern is the perceived risk of further forest clearance for agricultural development (including plantation development in some limited areas) leading to loss of forest cover. Similarly, the risk of conversion of remaining remnant natural forest elsewhere to agriculture is more likely specific and more likely to occur in the areas of predominately low soil fertility and where taro and kava is grown extensively.

Land use planning and design of program field activities: site-level activities are expected to include land use planning. Guidelines will be developed for the DRWG and YMST so that there will be no AF/RF activities at proposed protected area sites or sites with HCVs, therefore helping to ensure that SFM is followed and for example mahogany plantations are kept away from areas of good forest and will have minimal/no impact on high conservation values in forests and non-forest areas. In addition, the CRA with the YMST serves as additional safeguards to prevent the conversion of natural forest. Furthermore, the ER Program will also work through the DRWG and YMST to ensure that where reforestation/ plantations are established this follows SFM practices, and does not replace natural forests. This will include support for mapping of remaining forest areas, awareness and capacity building, linking plantation development to FSC certification, and tying benefit sharing to the protection of natural forests.

Codes of practice for plantation development: The ESMF Section 4.3.2 identifies the need for clear guidelines which can be used to support the development of plantations which promote good practice in the location, planning, establishment and management of plantations which can lead to improved plantation success and ensure the maintenance and where possible enhancement of HCV and environmental services. These guidelines will prescribe environmental impact management measures in nine main areas: site selection, species selection; management regime, plantation establishment; plantation tending; integrated pest control; fire prevention and control; access and harvesting; and monitoring and evaluation. Site selection is of utmost importance as the primary means for mitigating the threat of natural forest loss. As part of site selection, village-level landscape planning is stipulated.

Independent monitoring: The ER Program will support a comprehensive M&E system which will included processes for qualitative and quantitative bottom-up data collection from the Matagali for forest cover monitoring and reporting (See section 14 of the ER-PD).

Applicable World Bank Safeguard Policies and Safeguard Instruments. The World Bank OPs/BPs as they apply to this Program are included in Table 4.6 above.

4.7.1 Program risks

Institutional sustainability is being addressed through the use and strengthening of existing service and financing delivery mechanisms and not the creation of new and parallel structures. This will also foster greater ownership by the implementers. Extensive training will be implemented to build up training and extension capacity and strengthen management capacity of the forest managers including smallholders.

The financial sustainability of the plantation forest activities will be ensured by promoting tree growing that is expected to be financially profitable, allowing cost recovery and repayment of credits. The program addresses the financial and institutional sustainability through the provision of small, realistic financing for core protection and management activities that can be sustained with limited external support and capacity building. It was expected that the funding will be replenished through REDD+ financing if the model proves successful.

Environmental and social sustainability will be ensured through improving land-use planning, enhancing security of land tenure and recognizing traditional land management systems, strengthening protection, promoting environmentally sound forest management, applying socio-economic plantation development guidelines, and involving all stakeholders including women in planning and forest management.

This program is conceived under the NFSD strategy to demonstrate the potential of smallholder and larger plantation forest development and a novel financing mechanisms to support conservation efforts in Fiji.

Important Program risks

- Major land degradation, including habitat destruction and fragmentation of forest, over a long period of time, mainly through clearing, deforestation, and in dry zones frequent burning and the creation of a self- perpetuating cycle of fire-dependent highly flammable grasses may reduce the anticipated stream of economic benefits from the program, and it is difficult to value these risks. The main mitigation of the risk would be to provide awareness raising and activities on a Divisional basis.

- Climate change presents a major threat to people, biodiversity and as noted, the economy in Fiji. The effects include the expectation of more extreme/intense cyclones and rainfall events with associated localised and wide-spread flooding, landslips and increased soil erosion and sedimentation, an early repeat of a catastrophic event such as a repeat of Cyclone Winston during the life of the ER-P has the

potential to substantially reduce expected benefits[86]. There is no quick fix and main mitigations would be to continue and encourage further research, continue the NAP and resilience building approaches.

- Mangroves are currently not included in the ER-P. They should be. There is no technical or carbon accounting reason why they cannot as they have been mapped as part of the project preparation. It is estimated 35% to 40% of the population relies to a greater or lesser extent on mangroves and in particular they are vital for women. The importance of mangroves in terms of climate change is understood and greater efforts need to curb development that result in conversion and loss of mangroves. The ER-P as a priority climate adaptation action should promote the protection, management, expansion and monitoring of mangroves.

- A threat to Fiji's terrestrial biodiversity remains poorly planned and executed logging of native forests this coupled in some parts of the ER-P area with increased levels of conversion due to rapid expansion of shifting agriculture aimed growing taro and kava as export crops has been have notable impacts on some parts of the islands as people seek an cash income. Implementation of activities only in wide spread districts may result in a lack of inertia for the ER-P to produce timely benefits. The main mitigation of the risk would be to provide awareness raising and activities on a Divisional basis.

- Land use planning and plans are seen as an important way forward in the ER-P. Unless very considerable effort is made to encourage participatory approaches with clear benefits for adopting a plan their acceptance, however rationale and reasonable the land use, policies, plans may be and restrictions, they could well be ignored by the landowners. The main mitigation of the risk would be to provide awareness raising and activities on a Divisional basis.

- Land in Fiji is customary owned land and is owned communally by the Mataqali, benefit sharing mechanisms will be a challenge as will a formal carbon title. The ER-P currently targets only 20 districts spread across the three ER-P islands. The basis process for distribution will need careful design and explanation.

- Concerns over difficulties of collaboration or conflicting policies across different sectors is not reserved only for REDD+ or Fiji. Improvements to sustainable forest management, conservation of forests for biodiversity etc. need cross-sectoral approaches, these are a challenge in most countries. In Fiji a uniting approach has been the need to collaborate to adapt to climate change. However, with so many climate related issues and the near constant risk of economic shocks, the capacity of government staff, NGOs, community groups and farmers to undertake complex program activities will be a challenge.

- To date information flow on REDD+ to rural communities has been difficult and has not been systemically disseminated in non-iTaukei communities. It is argued in this SESA and the Consultation and Participation Plan that will be included in the ESMF and Process Framework will make this explicitly clear.

4.8 Proposed roadmap for strategy of interventions in the Emission Reduction Program Area

Potential benefit sharing mechanisms

[86] Cyclone Winston is often anecdotally cited as being as a 1:100 year event, this does not mean it will take another 100 years for a similar cyclone event to occur.

Fiji is fortunate in that its indigenous people (the iTaukei) own most of the forestland and hence issues relating to land tenure are much less problematic than in other FCPF countries where indigenous peoples find it difficult to claim ownership, even customary land ownership recognized by the state. Fiji also has a clearly defined benefit sharing system[87] where the iTaukei receive royalties for the logging of both native and plantation forest trees and for land leased primarily to non-iTaukei Fijians (notably Non-iTaukei but also owners and operators of coastal resorts in the ER-P provinces). However, the extant issue for the ER-P is whether the Benefit Sharing Mechanism (BSM) is as transparent and equitable or as socially inclusive as it could be. The SESA (section 4.8) provides a summary of some of the issues and there will be a separate report available. Section 15 of the ER-PD also provides details.

A BSM for the ER-P is being designed that will address specific REDD+ issues rather than simply being a facsimile of the existing BSM that have widespread currency in Fiji even though it will embrace the principles of the existing BSM between the TLTB and iTaukei customary landowners. Where it is a departure from most of the existing BSM practices are: 1) carbon benefits will not be paid on an individual household basis (defined in the context of Fiji as the extended family or iTokatoka) because the benefits would be small and of limited use; 2) these benefits will not be assigned to a clan (Yavusa) or sub-clan leaders (Mataqali) to do as they please and in this process this will go quite some way to avoiding "elite capture"; and, 3) to ensure the priorities of poorer and vulnerable persons and women are reflected in the BSM via a Management Support Team (Yaubula) that have been successfully trialed in at least two National REDD+ Pilot Programs will establish socially-inclusive Community REDD+ Agreements (CRA) with local communities (to be at the Mataqali level but avoiding "elite capture" as per 3) above). Consultations have been undertaken with the National iTaukei Resources Committee and the Divisional REDD+ Working Groups in each of the three regions in the ER-P provinces. The BSM is designed to ensure that carbon benefits (Monetary and Non-Monetary) are shared in an equitable and effective manner with all relevant stakeholders who will have a direct impact on generation of emissions reductions in the ER-Program area, including most importantly local forest-dependent communities.

The proposed BSM will be implemented by the Yaubula (means resources) Management Support Team (YMST) are site support groups made up of community representatives who function as liaisons between community interests and external partners to the community. They provide information and motivation to implement local resource management as well as monitoring and evaluation to ensure long-term solutions to climate and environmental challenges. YMST work under the Ministry of iTaukei Affairs and support the Provincial representatives at the National iTaukei Resource Committee, a subcommittee of the National Environment Council. The YMST has a key role in the implementation of the Ecosystem based Management Plan for Lekutu and Navakasiga Districts Bau Province, Vanua Levu. The Bau YMST has been influential and representatives have been involved in village meetings and district meetings. The YMST can be seen as an advisor to and from the people to the Provincial Council and other government departments relating to grievances brought forward by concerned villagers on environment degradation and mismanagement. It is with these credentials that the YMST can work collaboratively in a largely non-hierarchical structural and cultural context and the ER-P builds upon the creativity and innovations of The Yaubula System: something that is considerably more difficult for the TLTB.

The main groups of beneficiaries have been extensively consulted and are expected to be the communities living in and around natural and plantation forests, coastal mangrove communities, the provinces in the three ER-P Divisions and the regional Divisions of Forestry. The Divisional Forestry Offices are currently under-resourced and cannot systemically support sustainable forest management to the extent that is considered desirable. The Yaubula has particular focus on working with the forest dependent communities and it facilitates the involvement of the local communities. This is achieved through requirements for setting socio-

[87] The SESA identified five BSMs in Fiji – the TLTB model (which is being used for the ER-PD), the Land Bank Model, Private Institutions and Trust Deeds, Charitable Trusts, and Private Sector Companies – and the initial SESA argued the REDD+ BSM should base it approach on the Nagoya Protocol of 2014 because it provides an effective, participatory and updated strategy and a clearly defined action plan. These principles are not to be neglected but rather the TLTB is being used as the institutional vehicle and not all its processes are to be incorporated into the BSM for the ER-P.

economic baselines, contributing to developing more participatory, improved management plans and by encouraging Forestry staff to engage on a more systemic basis with local forest dependent communities. Importantly this focuses on sub-clans or extended families or individual households identified during meetings with the YMST on the design of the CRA as they may contribute more to deforestation and degradation than other households, perhaps because they are poorer and vulnerable than most other households.

The Yaubula approach offers a forum for sustainable forest management, and for the discussion and selection of the different interventions that are supported through ER-P. Furthermore, it provides the potential for the carbon related benefits to trickle down to individual households; however, this is most unlikely to be a direct monetary benefit. The BSM includes opportunities for the carbon fund payments to support a number of different types of mainly non-monetary benefits for example, as input support for the following activities:

- Improvements to climate smart agricultural crop productivity and diversification which contributes to less encroachment;
- Improvements to community forestry and sustainable forest management including planting native species, and adopting longer rotations for production forestry; and
- Improvements to the sustainable management of NTFPs which helps to reduce further forest degradation pressure on the forest.

The Potential Categories of Beneficiaries

While Fiji has a variety of BSMs it has yet to pilot and incentivize BSM approaches that involve benefit sharing of forest resources. A pilot monetary approach for REDD+ where it could be agreed what percentage of monetary benefits should be available to be used for CRAs and what could be available to cover the management and M&E costs is required. A particular focus of the Yaubula Approach is that it targets collaboration between the iTaukei communities and the Divisional Forestry Units and encourages them to work together as interdependent beneficiaries meaning that they have shared goals and benefits as the DFU stand to benefit from improved forest management and forest cover and the communities have direct and indirect benefits of improved crop production and greater role in management of the local forest resources. The majority of the benefits from the BSM under the ER-P will be shared by stakeholders in the Matagali and will focus on:

- Forest dependent villages and the poor households who make up the most important forest users and are often the most vulnerable to food security issues; and
- Other local stakeholders, including: 1) the managers of the forests from the Ministry of Forests at the Divisional Level; 2) Provincial and District Authorities; and 3) Community-Based Organizations and NGOs which play a quasi-role in the management of some aspects of local community affairs and the use of the land and forest resources.

To ensure that the CRA addresses drivers of deforestation and degradation and also targets the poorer and more vulnerable groups that are more likely to be forest-dependent than the non-poor and less vulnerable groups, the BSM could include a small grant mechanism to support livelihoods per Matagali per annum.

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 performance of management of the forest will be monitored through the Divisional forest monitoring system (DFMS) and Measurement, Monitoring and Reporting (MMR) forest monitoring process, however, detailed performance criteria have not yet been established. The BSM will be monitored as follows:

- The government will ensure that the BSM complies with relevant laws, decrees and circulars as per routine governmental monitoring for projects and programs that focus on natural resource

management principally at the provincial level but also supported through the district administration in collaboration with YMST and at finally at the village level.

- An independent monitoring team with experience in the implementation of BSMs will be appointed to provide independent and periodic annual reports on the BSM and the safeguard requirements. The independent monitoring team will also undertake spot monitoring on a random basis of the Yaubula and will provide feedback and recommendations to both the Yaubula and the government (see Section 14 of the ER-PD). Local village beneficiaries as part of the processes associated with the Yaubula will also be encouraged to undertake their own participatory monitoring of the BSM as a community responsibility;
- The Yaubula has a role in monitoring local benefit sharing arrangements as defined in the local management plan for the CRA, this is also supported by the DFMS which works at the village level and provides forest data to the Divisional Forest Offices and then to the Fiji Forest Information System (FFIS); and
- For the overall ER-P BSM, this is based on the Yaubula's performance that would be monitored by the DRWGs and Divisional M&E system, including safeguards, and with supporting information coming from the DFMS and the proposed MMR system (see Section 9 of the ER-PD).

Summary of the process of designing the benefit sharing arrangements

Discussions on the design of the BSM process 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 (see SESA Section 2.1.3 and Consultation Reports 2018). The management plans of the CRA will also include monitoring targets for the YMST and communities to introduce changes to forest management practices at the community level. For example, this could include combating forest degradation hotspots, resolving boundary issues and encroachment.

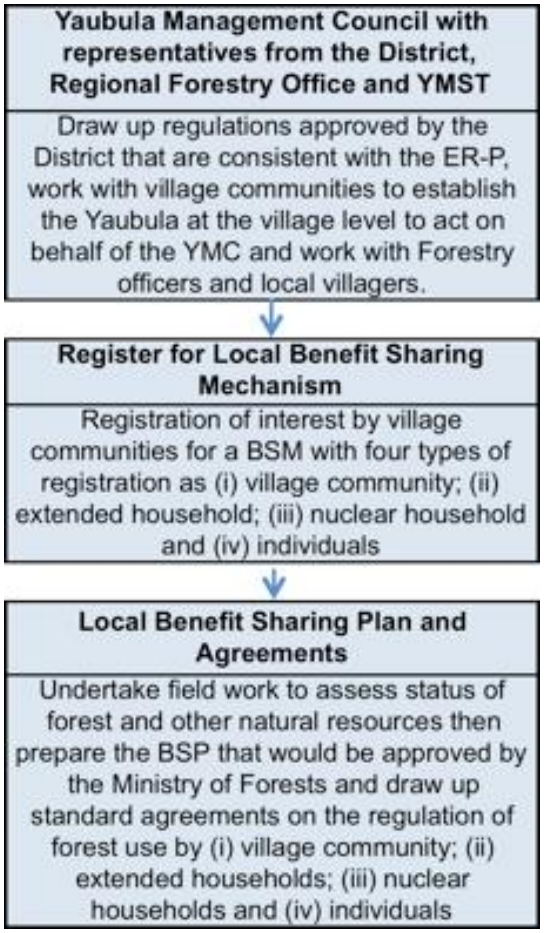
In preparing the BSM a concerted attempt, especially by forestry officers has been made to place less stress on the monetary benefits that might be derived from the Carbon Fund for two important reasons. The first reason is that in accordance with good development practice it is considered necessary not to unrealistically raise beneficiary expectations that the ER-P will provide substantial monetary benefits on an individual basis. Secondly, it is still unclear as to what are likely to be the indicative amounts available for distribution under any benefit sharing arrangement that is agreed.

The CRA and YMST approach includes provisions for the distribution of small grants as part of the BSM approach to facilitate and encourage improvements to livelihoods particularly through improvements to agricultural practices and crop diversification that will have less impact on natural forest. It will be up to the YMST, in accordance with the Yaubula Operational Guidelines and processes (which will set standards and conform with Indicator 30.1 of the Methodological Framework), to decide what activities best fit to the local area and conditions and how the monetary benefits from the sale of carbon credits will be distributed. There is a general consensus that all members of the various categories of customary landowners should benefit irrespective of their contribution if physically residing in the village. This does not apply to customary landowners who have permanently migrated from the village to peri-urban and urban areas of coastal Fiji, those who have migrated abroad or women who left their natal village to get married. This is qualitatively different to customary landowners being entitled to an equal share of logging royalties or leasehold rental payments.

While households targeted for investments are benefiting from carbon derived monetary benefits (from the National REDD+ Fund through to the Yaubula via the FNFF) by being able to participate in livelihood activities that are designed to address the underlying reasons on why they are involved in activities leading to deforestation and forest degradation (especially the over-harvesting of NTFPs), they could be paid a combination of performance and input based benefits (even if payments are made in-kind). Thus, performance based and input-based benefits for ER-P participants at the village level are not mutually

exclusive. Similarly, if the same villagers or other villagers agree to provide forest environmental services, it appears most unlikely, based on the FCPF-REDD+ consultations in the ER-P area to date, that villagers either individually or collectively will be prepared to provide such services unless some input-based benefits can be derived (these issues would be addressed in detail in the Operational Guidelines for the Yaubula).

Figure 4.4 Yaubula structure and YMST processes

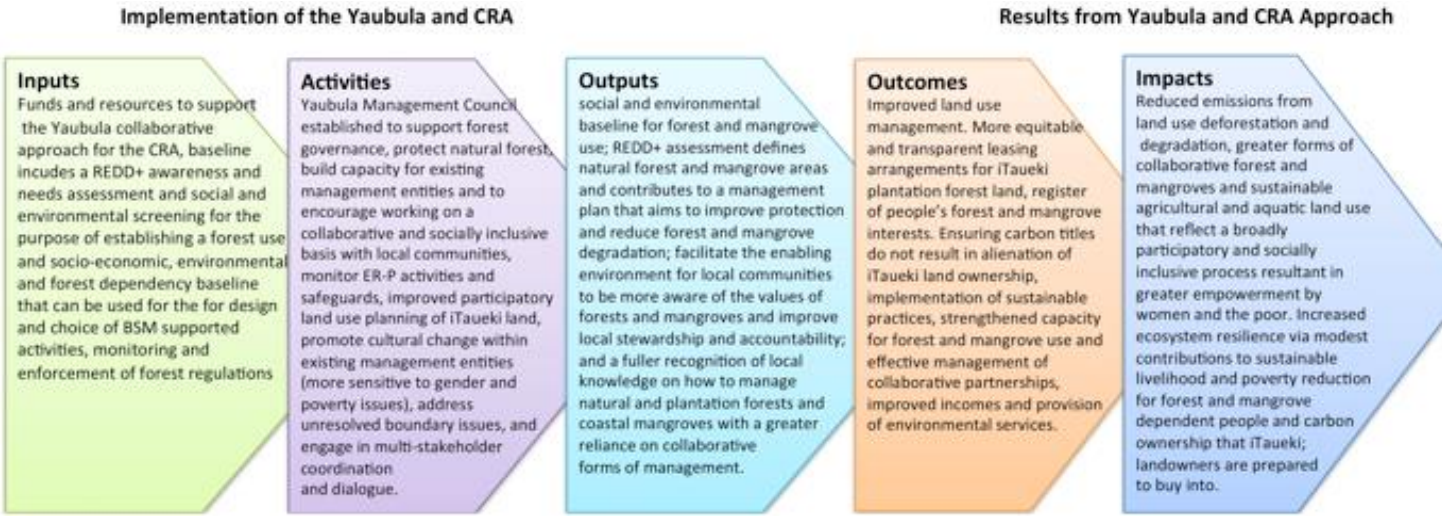


The YMST structure (see Figure 4.4 above) for the summary of the structure of the YMST) is not designed to replace the existing management structures of the FMEs but will complement them by facilitating greater levels of involvement and collaboration between forest managers and users of forests than generally exists at present. The Divisional REDD+ Working Groups (DRWGs) based at the Ministry of Forestry Divisional Office in the ER-P will work with FMEs to develop their understanding of the role and functions of the YMST and what processes they need to follow to ensure that the principles of the CRA will be embedded in improved forest management and follow the BSM (they will be guided by the Operational Manual for the CRA). The prescribed eligible activities (and reasons for choices) will need to be discussed and explained, and the basis for this will be a REDD+ needs assessment (in summary this is a forest resource use and threat assessment) and a social and environmental screening which undertakes a socio-economic and environmental assessment of the local communities, provides a baseline and identifies forest dependence and hotspots of forest encroachment, leading to forest degradation and deforestation. Agreed permitted activities would include forest resource surveys and these would contribute to forest use agreements, participatory boundary demarcation, community communication activities, awareness raising activities, village-based forest

protection teams and small-scale, demand driven pro-poor livelihood improvement activities that address the major drivers of deforestation and forest degradation.

The BSM through the use of the CRA and YMST is designed to take account and reflect the local conditions, threats and pressures on the forest resource that have developed and these in turn are addressed in the FME management plan which in turn is based on the CRA which includes socio-economic and environmental baselines. See Figure 4.5 below.

Figure 4.5 Summary of the structure of the Yaubula and Community REDD Approach (CRA)



Description of the legal context of the benefit-sharing arrangements

The legal context of the benefit sharing arrangements are quite clear. Specifically, the iTaukei Lands Trust Act (Cap) 134 mandates the iTaukei Land Trust Board to secure, protect and manage land ownership rights assigned the iTaukei landowners and to facilitate the commercial transactions that revolve around the use of iTaukei land. One of the core functions of the Board is to collect and distribute the premiums or lease rentals that are payable to the iTaukei landowners, Lease rental money and logging royalties are distributed according to the provisions of Section 14 of the iTaukei Lands Trust Act (TLTA) and the iTaukei Land Trust and Licensed (Amendment} Regulations of 2010.

However, before such monies are distributed the TLTB is legally authorized to make such deductions:

1. Up to 10% of total monies payable to cover all administrative costs;
2. Any expenses incurred by the Board involving any commercial transaction;
3. Payment for any statutory obligations such as though required following a court order in the event of a dispute;
4. Payment for any necessary court sanctioned work where it is found that the landowner is legally liable;
5. Payment for any outstanding drainage rates;
6. Any outstanding land rates payable by landowners; and
7. With the consent of the landowners, payment of any amount owing for any scheme designed to benefit the landowners subject to ministerial approval.

For logging royalties, the Ministry of Forests is authorized under Section 21 of the above Act to receive up to FGD70 per cubic meter depending on the native species that is logged and a 12% stumping fee. All proceeds

are to be distributed equally on a per capita basis (including children and absentee Mataqali members: there are no exceptions).

There are other legal options, the most significant being the Land Use Decree of 2010, whereby iTaukei landowners are able to opt out of being managed by the TLTB and permit their affairs to be managed by the Ministry of Lands and Mineral Resources. Under this legal umbrella elected land-owning units (LOU) are established and LOU members based on the Deed of Trust that has been prepared are able to distribute 100% of all benefits (compared to the 90% post 2010 of the TLTB). There no such equivalent of the TLTB in the Ministry of iTaukei Affairs in the Ministry of Lands and Mineral Resources. Technically LOUs would also be entitled to receive carbon financial benefits if they were involved in ER-P activities.

The Charitable Trust Act (Cap 45) enables CSOs, NGOs and other Not For Profit organizations from establishing their own entity for humanitarian, religious and environmental purposes. How benefits that accrue from such activities are distributed depend once more on any deed of trust that has been agreed upon. For instance, if this Deed of Trust stated that a greater share of benefits should accrue to the most socially or physically disadvantaged members it would be in breech of the law. Technically, if its members were involved in ER-P activities the entity would be eligible to receive carbon financial benefits. The same applies under the Companies Act of 2015 where a cooperative can be formed and it members to could receive benefits.

5 Conclusions and recommendations

The SESA has provided a substantial body of empirical evidence from the ER-P Accounting Area in relation to the environmental assessment of the proposed ER-P activities and has concluded there are no major issues relating to conservation and protection of biodiversity, proposed protection and maintenance of ecosystem services, protection and proliferation of medicinal plants and curative practices, water regulation and watershed management. Where there are empirical gaps they can be further investigated and quantified. However, it has to be recognized that this SESA has less quantitative socio-economic data than is necessary to make very robust evidence-driven assertions but the data is adequate to inform both the ER-PD in relation to ER-P design with the necessary components to ensure that it is possible for a reduction in carbon emissions. It does address salient issues ranging from how local forest-dependent communities and even those communities living contiguously with closed forests, open forests, forest plantations and mangroves can participate in the ER-P. Therefore, it is the social assessment rather than the environmental assessment that requires more fine-tuning, but this is hardly surprising because the SESA in this context is dealing with the sociological impacts that are not simply mediated by human agency but are the purposeful activities of human beings.

The SESA has informed how the drivers, components, sub-components and activities of the ER-P have been developed to ensure the objectives of this ER-P for the ER-P Accounting Area are incorporated in the final design. Activities associated with collaborative and participatory approaches to sustainable forest management, the development of equitable and transparent benefit sharing plans, modalities for monitoring, reporting and verification of results based on efforts to reduce carbon emissions and the social inclusion of women and other marginalized groups have been identified based on this SESA. It has been totally unrealistic to expect that all these activities have been thoroughly embedded in the ER-PD that the Carbon Fund will assess in June 2019 but it also important to recognize that the ERPA, which if Fiji is successful at the aforesaid meeting, is designed to approve these activities or at least ensure that they have a very good chance of being successfully implemented during the ER-P.

1. A recommendation is that prior to the ERPA it is necessary to collect as much quantitative socio-economic data as possible. Fiji is a long way behind other countries that have been admitted to the Carbon Fund and it simply does not make any sense if there is a real paucity of such data. It is not being argued that data is necessary for every village or even every district but a representative cross-section of such data is absolutely necessary. This surely is not as formidable as it might imply but without a reasonably robust socio-economic baseline it really is quite impossible to quantify the possible outcomes, positive or negative. It is not anticipated that the ER-P will make significant inroads to rural poverty, which this SESA suggests do exist and are likely to get worse if villagers simply rely on land-based livelihood activities that the SESA clearly also suggests they no longer are. Rather the emphasis has to be on what incremental and modest reduction in poverty can the ER-P contribute to. Here the SESA is relying on a multi-dimensional approach to poverty reduction and one that also facilitates the greater empowerment of women and other marginalized groups, whether the owners of forests and other land or among those groups that are leasing land. The gender analysis undertaken as part of the SESA and building upon a WB supported study in 2017 clearly demonstrates that irrespective as to whether women are "joint" customary owners of land they are less likely to control access to and use of forest and mangrove resources than men.

2. *It is strongly recommended by the SESA that the GAP that will be developed for the ER-P build upon the strengths of the WB supported study otherwise women will not benefit from to the extent they should from the ER-P.*

The SESA has also argued this is not a conservation program and it is necessary to differentiate between the sustainable management of forests that people as human agency is actively participating in and the

conservation of forests where people are essentially excluded or at least are unable to engage in activities such as using climate-smart agricultural activities to arrest deforestation and degradation. The SESA has for instance highlighted the rapid expansion of kava production in response not only to local demand but also international demand. Households growing kava are simply not going to buy-in to conservation measures but based on consultations that were undertaken for the SESA they might be able and wiling to buy in to more climate-smart approaches to the cultivation of kava. The same approach can be seen in how households are responding to the need for enhanced food security. There is no way these households are going to conserve Fiji's forests at the expense of their own food security. This argument that some erstwhile conservationists might tend to use is simply naïve.

3. *A key recommendation is to include mangroves in the ER-P. There is no technical or carbon accounting reason to exclude them and the socio-economic reasons for including them are important as between 35%-40%of the population are partially and solely dependent on mangroves, and they are especially vital for women. The SESA has stressed that carbon emission reduction activities are not simply based on Fiji's forests in the ER-P Accounting Area but also its coastal mangrove areas where most of the existing and vital tourism development has been taking place.*

This is a very important carbon footprint has been recognized in the SESA and therefore the stakeholders in the SESA are not simply the Government of Fiji and its relevant agencies and local communities but also the private sector: those that invest in and develop these coastal resorts. The SESA has also focused on the pine and mahogany plantations because there are likely to be issues associated with how these plantations can contribute to a reduction in carbon emissions but also not have a deleterious socio-economic impact on people whose livelihoods – whether as growers or workers – depend on income from these plantations.

The SESA has also informed the development of the Environmental and Social Management Framework and the safeguard instruments both directly and indirectly related to environmental and social safeguards, a Process Framework and a Gender Action Plan. As explained in the body of the SESA indigenous person's safeguards have not been triggered in this SESA even though over 60 per cent of people living in the ER-P Accounting Area are the indigenous and customary landowning iTaukei Fijian people and among the nearly 40 per cent of people who are descendants of more recent settlers in Fiji (primarily those of Indian descent) from among whom most of the land leased from the iTaukei originate, a decision in conjunction with the Government of Fiji will need to be made to ensure the interests of both these major ethnic groups (and of course smaller ethnic minority groups) are safeguarded in the ESMF.

4. *To illustrate what processes, need to be safeguarded the most obvious is that relating to what language should potential beneficiaries be consulted in. For Fijian citizens of Indian descent Fiji Hindi is also known as Fijian Baat or Fijian Hindustani whereas for the iTaukei it would be the Fijian language. This provision in the ESMF and Process Framework is the underlying basis of FPIC for the ER-P and during the second phase of the SESA when dealing with these two ethnic groups every attempt was made to ensure that people were consulted in the language of their choic*e.

However, it also needs to be noted that for the most part the SESA has identified what should be the positive impacts of the ER-P. These positive impacts include a more sustainable approach to forest and mangrove management that does not exclude people from either the forests or the mangroves, which of course is in marked contrast to a strictly conservation approach to a program such as this. Managing the forests and mangroves is qualitatively different to conserving the forests and mangroves. Climate-smart agricultural interventions in areas surrounding existing forests or areas that villagers are contemplating clearing for agricultural cropping is a very good example of what is possible. Similarly, managing mangroves including planting more mangroves has a range of positive impacts including increased access to aquatic resources and mitigation of storm and cyclone damage.

5. *The SESA recommends that the conceptual confusion that might result from articulating the ER-P as though it is a REDD+ Program to conserve rather than manage the forests and mangroves to generate a reduction in carbon emissions should be clarified because there are some instances where stakeholders in the proposed ER-P have confused the two approaches*.

Other positive impacts are associated with the greater empowerment of women and other marginalized groups through a mooted participatory approach to the ER-P that enables owners, managers and users to work within a collaborative management framework that for the most part in Fiji has not existed to date. It is recommended that such collaborative approaches be more fully explained and discussed with all villagers not just the "village elite", which more often than not consists entirely of males. The SESA has documented that fact that women appear to understand the ecology of the forests better than men, whose knowledge is largely restricted to logging and hunting. There are other positive impacts as well including the use of emission reduction payments to fund village and district level activities that might not otherwise be funded including modest but incremental improvements to people's livelihoods including and especially those estimated one-third of households that consider themselves and are considered by others to be poor.

6. *As with other countries admitted into the Carbon Fund the SESA has also demonstrated that villagers require some upfront payments (an advance) for ER-P related activities. It is difficult to expect any village household to rely simply on results-based payments. This both the Government of Fiji and the WB need to understand clearly. Demarcation of boundaries between landowning groups and including leaseholders in the ER-P is also another positive impact that has been identified in this SESA. Given that during the course of some of the consultations facilitated for preparing this SESA it is highly recommended that the ER-P accord this activity the priority it warrants.*

The SESA has identified some possible negative impacts even though in general the SESA argues all or most impacts should be positive because reducing carbon emissions is environmentally a very sound objective. But it is not the environmental impacts per se, rather it is the social impacts especially those associated with possible restricted access to natural resources from the forests and mangroves in the proposed ER-P Accounting Area. As iTaukei own more than 84 per cent of the land in this ER-P Accounting Area it is they who can decide to do as they please with this land. This includes logging in all forests with the exception of the closed forests that constitute 30.47% of the total land area in the ER-P Accounting. If the ER-P is going to encourage the iTaukei to log less and accrue carbon financial benefits from reducing carbon emissions then there will need to be more sustainable approaches to forest management. This in the short-term will affect the incomes of those communities who rely for part of their livelihoods on the sale of logged trees from the forests.

Similarly, if there are to be restrictions on the households that rely to come extent on NTFPs for their livelihoods there will be some negative impacts that will need to be mitigated as there will where households go hunting and fishing or are raising livestock in the forests or collecting firewood for either domestic use or for sale. There are also conceivably negative impacts on those households, groups residing within non-iTaukei villages who are involved in production forestry, notably pine and mahogany forestry if attempts are made to encourage such households to extend the production cycle to maximize the objectives of the ER-P. As also explained in the body of the SESA what is likely to happen if the iTaukei customary landowners via the TLTB try to cajole leaseholders to be involved in reforestation or afforestation activities where the former is neither able or willing or a combination thereof to comply with such a requirement. Issues that might generate negative impacts relating to the forests are also likely to be replicated to a large extent in relation to the mangroves as well. If more systemic land-use planning activities are to be introduced and the SESA has made a case for such activities to take place they have to start at the local level and not be promulgated at the national level otherwise they will be largely ineffective. The SESA has shied away from commenting on controversial land tenure issues, except in relation to leasing and the narrative in the SESA has been populated in Section 14 of the ER-PD.

7. *One of the most important objectives of the ER-P is to promote collaboration among and between stakeholders not conflict and the SESA strongly recommends that sensitive issues associated with lease holdings be very carefully analysed to ensure there is no inter-ethnic conflict or at the very least minimize such tensions.*

However, the SESA is quite positive when it comes to important issues such as benefit sharing arrangements so long as "elite capture" can be avoided wherever possible and all putative beneficiaries can enjoy both carbon and non-carbon benefits. To date despite some of the criticisms of how the TLTB have been managing the payments of lease monies to customary landowners at least 70 % of the lease payments are finding their

way back to local communities. How this lease money is being used by individual households is another issue and not entirely relevant to the ER-P although every attempt via the ER-P should be made to ensure there are as broad-based benefits that have the greatest impact for the greatest number of people. Of equal importance participants on the ER-P do not have to rely simply on the TLTB and can also utilize the services of the Land Bank other institutionalized mechanisms should they choose to do so.

8. *An analysis of these different modalities has been made in the SESA and is also reflected in Section 15 of the ER-PD. In fact, the SESA suggests that the ER-P could benefit from monitoring and evaluating which of these mechanisms has or will generate the most effacious outcomes. Thus, another recommendation of the SESA is that all existing Benefit Sharing Mechanisms (BSM) should be trialled.*

9. *A coordinated effort on wildfire control, at the community level and including a fire surveillance system should be supported*. Fire is a very destructive force in Fiji contributing to land degradation, degradation of forests and it impedes reforestation. A coordinated effort on wildfire control, at community level and including a fire surveillance system is required. Empowering communities to take responsibility of ownership of their resources is crucial in reducing deforestation and forest degradation. Utilization of current traditional structures such as enforcing traditional and customary laws through the iTaukei Affairs act and the training and awareness of traditional communities on fire management would be helpful.

10. *A clear communication strategy is required.* This is will help ensure the dissemination REDD+ information etc. (such an activity does not seem be currently included the ER-P). To date information pertaining to REDD+ in Fiji has not been systemically disseminated rural and non-iTaukei communities are the biggest losers at present. It is argued in this SESA and the Consultation and Participation Plan should be included in the ER-P and will be included in the ESMF and the Process Framework will make recommendation also.