



LIST OF WITNESSES WRITTEN EVIDENCES

Report of the Auditor General –Performance Audit Reports on:
(Parliamentary Paper No. 153 of 2019)

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Meteorological Services

Performance Audit Report – Management of Rural Electrification Program (PP No. 153 of 2019)

PUBLIC ACCOUNTS COMMITTEE

WRITTEN RESPONSE

1. Policy and Procedures for the Rural Electrification Program

Please advise on the status of consultation with stakeholders and the update on the review of the Rural Electrification policy and Standard Operating Procedures.

Response:

The draft Electrification Policy has undergone the second round of consultation with the stakeholders. We are expecting to receive all comments by the 20 March 2020 before onward to cabinet for endorsement. Some of the major highlights of the policy include the expansion of the scope or the boundaries of the policy to incorporate those households in the peri-urban and urban areas including improper/squatter settlements. However, this is carried out by certain restrictions and conditions. In addition, the policy also promotes the use of least cost technologies for our electrification program.

Similarly, the existing Standard Operating Procedures will be reviewed and updated to align to the draft Electrification Policy. This will be done once the policy has been endorsed.

(Attachment 1: Draft Electrification Policy 2020)

2. Human Resources

Please advise what is the status of the staff structure of the Rural Electrification Unit?

Response:

Currently for Rural Electrification unit has 18 staffs which includes the following:

- 1 x Principal Technical Officer
- 2 x Supervisor High Grade
- 13 Technical Assistants (Fitters & Electricians)
- 2 x Clerical Officer

The Department has proposed a new structure which will consist of 10 additional staff in the draft Electrification Policy. In addition, from the past 6 years when consumer contributions were waived for all Electrification projects, the number of applications and projects has increased immensely. Thus, the need for additional staff and the new structure will boost the performance and monitoring of the Rural Electrification unit.

Other units under Department of Energy (total staff 59) are:

- Renewable Energy Development Unit

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- Demand Side Management Unit
- Biofuel/Petroleum Development Unit
- Administrative & Accounts Unit

3. Funding of Rural Electrification Unit Programs

Can the Director Energy provide the summary of the REU Programs by divisions with its associated costs as at March 2020?

Response:

The Rural Electrification program consist of two types of schemes and these are;

- a. Grid Extension program and housewiring
- b. Solar Home Systems

Grid extension program

For 2018/2019 Budget, \$18.7M was paid to EFL for the Grid Extension to power 2,326 households. Currently, all these schemes are under design and construction stage with EFL. Some of the schemes which were mentioned in this budget are yet to be paid. The breakdown for the overall projects are as follows:

No.	Division	Amount Paid	Amount yet to be paid
1	Central	\$874,604.66 (73 HH)	\$206,044.25 (13 HH)
2	Western	\$8,254,350.61 (1007 HH)	\$3,392,717.83 (305 HH)
3	Northern	\$9,644.286.00 (1246 HH)	\$3,301,254.00 (275 HH)
	TOTAL	\$18,773,241.27 (2326 HH)	\$6,900,016.08 (593 HH)

For 2019/2020 Budget, a total of \$9.2M was allocated for Grid extension program and as of March 2020, total paid project was \$5,520,931.00 to EFL. The work is currently under design and construction stage.

Solar Home System

The Solar Home System (SHS) program commence in 2018/2019 (Supply of Components) and completed in 2019/2020 (Installation) Budget year. The breakdown are as follows:

No.	Division	No. of Household	Total Cost (\$FJ)
1	Central	193	\$733,400.00
2	Western	274	\$1,041,200.00
3	Northern	1,278	\$6,376,400.00
4	Eastern	798	\$3,032,400.00
	TOTAL	2,543	\$9,663,400.00

Currently all systems are installed and the customers are enjoying power from SHS.

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Solar Hybrid System

In addition, the Department has installed 3 Hybrid Power System in the last two years as follows:

No.	Location	No. of household	Total Cost
1.	Tukavesi village, Cakaudrove	95	\$1M
2.	Solevu High School, Bua	72	\$685,046.28
3.	Namara village, Kadavu	68	\$3.5M (\$3M from Korean Government and \$500,000 – Fiji Government)

Maintenance and Servicing

The Department also have program for the maintenance of all SHS and Diesel Generators. From the past 2 years, the Department has spent around \$600,000 to upkeep these systems.

Cyclone Rehabilitation Works

Currently the Department is carrying out 2 cyclone rehabilitation works as follows;

- c. TC Winston - Diesel Schemes for 17 villages in Koro and Vanua Balavu. The work is in progress and cost is around \$3.5M.
- d. TC Keni – For SHS, the Department is currently doing rehabilitation work which cost around \$855,067.24. The supply of equipment has been received.

4. Administration and Implementation of Rural Electrification Program

a. Diesel Generator Scheme

Can the Department of Energy please provide an update on whether the Department of Energy have incorporated the changes in the Rural Electrification policy? If not, why not?

Response:

The draft policy promotes the use of sustainable and affordable electricity supply. This includes the installation of solar-diesel with mini-grid system. Government is phasing out the use of diesel generators alone due to high fuel costs, lack of technical and managerial skills and high operation and maintenance cost.

(Refer to draft Electrification Policy Section 8.3.1 on Community Mini-Grid System)

b. Solar Scheme

Please provide an update on the finalisation of the REU policy and the SOP?

Can the Director of Energy explain on how does the Rural Electrification program incorporates the Leonardo DiCaprio Foundation on Rural Electrification funding programs?

Response:

In the draft Electrification Policy, a section has been included for donor funded projects. This will also include the Leonardo DiCaprio Foundation. The section highlights the process and

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procedure to be followed before the project is implemented. This includes but not limited to the vetting of the project design and the operational/business model that the company intend to use. It is in the best of Government that such projects are sustainable and in line with the existing policies and plans.

(Refer: Section 8.3.3)

5. Installation Arrangements Renewable Energy Service Company

Can the Ministry provide an update on the following:

- a. appointment of the clerk to assist in the updating of the records also following on the arrears of revenue;

Response:

Due to the meritorious candidate declining the offer, the post was re-advertised on 22/02/20 and has closed on 28/02/20. It is expected that OMRS process will complete in the next 6 weeks. Meanwhile, an officer has been sideways transferred to carry out duties of the post until the post is filled.

- b. provide on the update of the database; and

Response:

Currently each unit has its own database (Excel) which are updated regularly. These include new applications, revenue and maintenance record updates.

- c. update on the arrears of revenue.

Response

Currently, there are a total of 13,500 systems installed in rural and maritime communities. Each household is required to pay \$18/month rental which caters partial maintenance cost of the system. These revenues are manually collected on a quarterly basis by our revenue collectors. As of December 2019, the arrears accumulated are approximately \$6,868,712.00. Some of the challenges faced by the Department include;

1. **Insufficient resources** (manpower) - there are a total of 14 revenue collectors who apart from collecting revenues from consumers, have also been assigned with other duties.
2. **Manual collection** – very costly exercise, mobilization cost is higher than revenue collected. For example, in Lau Group, an Officer might be spending \$3000 to collect \$500.
3. **Accessibility to project sites** – the project sites are sparsely distributed in the rural, remote & maritime areas where accessibility is an issue.
4. **Compliance to financial manual** - banking cannot be done on the same day due to the site remoteness and unavailability of banking facilities.

6. Records Maintenance

Please provide an update on the database and has the department followed up with ITC on this issue? If not, why not?

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Response

Currently, the Rural Electrification Unit is storing all data through an excel spreadsheet. This is managed by two Clerical Officers who manually update each individual customer's information as the application progresses. The Department has already had some preliminary discussions with ITC on the development of a database, however this will be proposed as part of the department submission in the next budget year.

Sustainable Development Goals (SDGs)

1. Describe briefly, the general level of awareness by the staff members of your Department, of Fiji's 5 years & 20 years National Development Plan, the 2030 Agenda, the Sustainable Development Goals (SDGs) and the SAMOA Pathway?

Response



The Ministry's Strategic Development Plan (SDP) is closely aligned to the 5 year & 20 year NDP and other National planning frameworks of Government. These national planning documents contextualize Governments commitments as enshrined in the SIDS Accelerated Modalities of Action (SAMOA) and SDGs. At the Department level, the Costed Operational Plan (COP) highlights the department's Annual Work Program as per the allocated budget. This is further broken down into the Operational Level Agreement (OLA) of individual staff. These targets are thoroughly discussed with individual staff and how it contributes to the Department, Ministry, National & International targets and commitments.

2. Describe the mechanism, in any, currently in place in your Department to enhance awareness of your staff members, of the alignment between the national development priorities, as per the Fiji's 5 years & 20years National Development Plan, with the SDGs and its targets and indicators?

Response

As discussed above, the OLA of individual staff contributes to the achievements of the Departments COP, Ministry's SDP and progressively to the national and international commitments. These are programmed to individual staffs key performance indicators which are regularly monitored through monthly and quarterly briefings.

3. Describe how your Department monitor and report on the progress of the implementation of Fiji's 5 years & 20years National Development Plan and of the SDGs under your responsibility?

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Response

At the Department level, we provide monthly progress report on the Department COP. In addition, the Department submits the Quarterly Performance Progress Report (QPPR) to the Ministry of Economy on the achievements for each quarter.

4. Is your Department a part or member of an inter-agency or inter-ministerial/department co-ordination mechanism that plans, monitor and evaluates the progress of the implementation of the National Development Plan and the SDGs under your responsibility?

If yes:

- a) How often does it meet?
- b) What aspects of its function can it be improved?

Response

Yes, the Ministry/Department is part of the Project Coordination and Planning Committee (PCPC) headed by Ministry of Economy. The other members include FRA, WAF, EFL, LTA, TFL, HAF and others. One of the key objectives of the meeting is to monitor and discuss the overall progress of the infrastructure development in the country. The meeting is held on a monthly basis.

There needs to be proper coordination and consultation on all existing and future infrastructure developments with the key stakeholders. In addition, there needs to be an integrated infrastructure master plan for Fiji.

If no:

- c) Do you see the need for such a mechanism?

5. Do you think your Department is sufficiently equipped to ensure an integrated and coordinated decision making process for SDGs implementation and for strategic planning?

Response

Government have set very ambitious target in the 5 yr & 20 yr NDP to achieve 100% electricity access by 2021 and to increase our Renewable Energy target to 100% by 2036. Department is not sufficiently equipped to achieve these targets on its own but will require a concerted and holistic partnerships and coordination with all stakeholders. The Department have been working collaboratively with regional and international partners such as SPC, GIZ, JICA, KOICA, GGGI, WB, IRENA, ISA to address barriers confronting the energy sector.

6. From your perspective, what are or ought to be the roles/functions of the lead government agency for coordinating the SDG implementation, and (b) how have these roles/functions been institutionalized?

Response

Currently, Ministry of Economy is coordinating the implementation of the SDGs. One of the roles

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of the lead agency is to ensure that the existing policies and plans integrate and harmonize. In addition, they should also coordinate and ensure that funding received by Government are properly channeled and put to optimum use.

7. From your best recollection, what steps has the Fiji Government taken so far to update or review its institutional setup (beyond the SDGs lead agency) in order to support the SDGs implementation?

Response

Government has signed and ratified a number of international framework agreement and commitments. These include the Paris Agreement, International Solar Alliance Framework Agreement, IRENA Framework Agreement and amongst others. These agreements sets very strong foundation and a vehicle for Government to achieve its international commitments and targets.

8. Briefly describe steps, if any, taken by your Ministry or Department to engage sub-national level including authorities, including provincial, district and community level authorities, in the design and implementation of policies and measures related to SDGs realization (for example by encouraging the localization of the SDGs or the design of local strategies)? If so, what initiatives have been taken in this respect and what have been the results and or challenges so far?

Response

The Department is working in collaboration with the Financial Institutions through the Sustainable Energy Financing Program (World Bank Program) to provide financial assistance for customers interested to use renewable energy technologies. In addition, we have the Solar Mama Program which engages rural women to install solar program in rural villages and settlements. Our local tertiary institutions have also carried out scientific research and monitoring of the different technologies that can be applied locally.

At the sub-national level, the Department has been providing awareness through the Provincial, District Advisory Council Meetings and even roadshows on the assistance provided by Government to promote the use of renewable energy technologies. One of the biggest challenges is on the accessibility of the funding assistance. The process and requirements provided for by the Financial Institutions is too rigid for rural communities to access.

9. What institutional arrangements or mechanisms are in place in your Department to engage civil society organizations, scientific community and private sector in the monitoring, review and follow-up of the SDGs?

Response

The Department have undertaken a number of research with donor partners and tertiary institutions on the energy sector. These include but not limited to the Electric Vehicle Study done by United Nations Economic & Social Commission for Asia and the Pacific (UNESCAP), Hybrid training for Fiji by JICA, Grid Integration Stability Study by IRENA and others. In addition the Department outsource all its capital projects to private companies. These include supply and construction works. Communities are trained to operate and maintain these projects.

10. Do you think there is an interest within your Department to learn more about other countries

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experiences, training, tools, partnership arrangements, peer-to-peer learning, curricula and be a part of a global public service award system on SDGs implementation?

Response

Yes, there is a need to learn from other countries and also share knowledge, trainings, partnership arrangements and best practices in this area.

2020

Electrification Policy



**Ministry of Infrastructure, Transport,
Disaster Management & Meteorological
Services**



MINISTER'S FORWARD

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DEFINITION

- “Brown Field”** - means consumers that have any form of electricity supply either through Government, private companies or any donor agencies
- “Community”** - means village, settlement or informal settlement.
- “Consumer”** - means villages, settlements in both rural and urban as well as isolated households, schools,
- “Electricity Supply”** - means single phase supply for residential consumer and three phase supply for small commercial premises.
- “Green field”**- means consumers that don’t have any form of electricity supply.
- “Mini/Micro Grid Systems”**- means Centralized Off-Grid systems with their own power generation and distribution networks. These include but not limited to small hydro, solar, solar-hybrid systems and Rural Government Stations (RGS).
- “Off-grid systems”**- means systems that are not connected to the Energy Fiji Limited (EFL) grid.
- “Settlements”**- means formal and, informal settlements in urban areas as well as settlements existing outside of the village boundary in rural settings.

ACRONYMS

AC	Alternating Current
AS/NZ	Australia New Zealand Standard
BOOT	Build Own Operate Transfer
BOO	Build Own Operate
CBA	Cost Benefit Analysis
DBOM	Design Build Own & Maintain
DC	Direct Current
DO	District Officer
DOE	Department of Energy
EA	Electricity Act 2017
EFL	Energy Fiji Limited
EMP	Electrification Management Plan
FEP	Fiji Electrification Policy 2019
FCCC	Fiji Competition & Consumer Commission
GE	Grid Extension
GPO	General Purpose Outlet
IRR	Investment Rate of Return
IPP	Independent Power Producer
JV	Joint Venture
MITT	Ministry of Industry Trade & Tourism
MITDMMS	Ministry of Infrastructure, Transport, Disaster Management & Meteorological Services
MSBS	Minimum Structural Building Standard
NDC	National Determined Contribution Implementation Roadmap.
NDP	20 years and 5 years Fiji National Development Plan
NGO	Non-Government Organization
O&M	Operation and Maintenance
PA	Provincial Administrator
PPA	Pacific Power Association
PPP	Private Public Partnership
REP	Rural Electrification Policy
RESCO	Renewable Energy Service Company
REU	Rural Electrification Unit
RGS	Rural Government Station
SEIAPI	Sustainable Energy Industry Association of the Pacific Islands
SHS	Solar Home Systems
TNK	Turaga Ni Koro

PART A - POLICY DOCUMENT – INTRODUCTION

1.0 THE OBJECTIVE

- 1.1 The objective of the FEP 2020 is to provide advice and assistance on the provision of reliable, affordable and sustainable electricity supply to all eligible consumers in Fiji.

The detailed objectives of the FEP are:

- 1.2 Address the electricity supply to consumers for social and economic development in consideration of the following;
- 1.2.1 A consumer eligible under the Policy includes villages, settlements and urban (formal and informal), rural public amenities (schools, health centers, etc.) and rural small commercial premises.
 - 1.2.2 Improve the performance of RGSs and extension of grid (EFL & Minigrid) to nearby communities.
 - 1.2.3 The policy will be consistent with other Government policies.

2.0 THE POLICY DOCUMENT

- 2.1 The objective of the FEP 2020 is to provide advice and assistance on the provision of reliable, affordable and sustainable electricity supply to all eligible consumers in Fiji.

Part A of the Policy Document provides information about the general aspects of the policy.

Part B provides information on status and key issues of electrification.

Part C provides the policy statements to address the key electrification issues

Part D provides brief outline on how consumers will apply for a scheme

Part E outlines electrification unit structure

Part F refers to reporting, monitoring, evaluation and review of this policy

3.0 PRINCIPLES OF POLICY

3.1 To achieve the objectives of the FEP 2020, the policy must adhere to the following principles:

3.1.1 **Consistency**

Consumers in the same community will be given the same choices. Any benefits will be shared on an equal basis. One of the implications of this principle is that all aid will be incorporated into the resources for capital works controlled by the DOE. The DOE would utilise such resources consistent with all the principles of the policy.

3.1.2 **Choice**

A range of electricity schemes is available, each with its own features for lighting and power. The capital and maintenance costs vary according to the features offered. Consumers must be fully informed of these features as well as the respective costs of each type of electricity scheme so that the most appropriate selection may be made by the consumer. The choice will also depend on cost-effective option available.

3.1.3 **Sustainability**

Electricity supply is envisaged to evolve into 24 hours continuous supplies.

3.1.4 **Minimize Costs to Consumer**

In order to minimize the maintenance costs, consumers will be trained to undertake basic maintenance and repair works.

3.1.5 **Accountability**

The accountability would be manifested in the form of rigorous reporting procedures such as annual, accounting, audit and performance assessment reports aligning to Government policies and plans.

3.1.6 **Maximizing Coverage**

It is the intention of Government that social benefit of electricity is made available to all non-electrified areas in the shortest time possible with the allocated resources.

3.1.7 **Prioritization**

It is in the interest of Government to ensure that all Fijians have access to electricity. Priority will be given to the un-electrified households and or communities.

3.1.8 Transition Policy

Some of the principles of the REP 1993 may differ from those implied in this policy. Consumers who are or have been receiving benefits in terms of the REP 1993 will have those benefits adjusted so that they conform to the new policy. This adjustment will be implemented over an appropriate period of time to minimize any difficulties that may result.

4.0 STATEMENT OF ACTIVITIES, DUTIES AND RESPONSIBILITIES

- 4.1 To achieve the objectives and principles of the FEP 2020, the duties and responsibilities of the DOE must include, but not limited to the following:
- a. To implement this policy in line with the 2013 Constitution, 5 year – 20 year National Development Plan, Electricity Act 2017 and other planning frameworks of Government;
 - b. To administer the electrification budget allocated by Government;
 - c. To advise consumers on the least cost option for electrification;
 - d. To receive and process applications for electrification;
 - e. To manage the construction of off-grid electrification schemes;
 - f. To provide training for consumers to enable them to effectively operate and maintain electrification schemes;
 - g. To establish effective workable business model on the operation and maintenance of off-grid systems;
 - h. To identify potential renewable energy resources for electrification schemes (e.g. hydro, solar, hybrid);
 - i. To scrutinize and vet project proposals and designs on off-grid donor funded projects and carry out inspection at different stages of constructions;
 - j. To facilitate certification of micro-grids projects with EFL;
 - k. To develop and expand RGS electricity supply systems into nearby communities and load growth centers;

PART B - STATUS & KEY ISSUES TO BE ADDRESSED

5.0 EXTENSION OF EFL GRID

Key Issues to be addressed:

- Lack of planning in rural electrification
- No clear demarcation on the boundaries of the policy.
- High cost of grid electrification to uneconomical areas

5.1 Lack of planning in rural electrification – this has resulted in some communities receiving more than one form of assistance from Government or “double- dipping”. For instance, some communities that have been recently installed with SHS are assisted again through EFL grid extension and housewiring. This has incurred additional costs and resources to government.

5.2 No clear demarcation on the boundaries of the policy – Eventhough the REP 1993 only focus on rural areas however this was not always the case. There have been instances where assistance was given to those residing in peri-urban and informal settlements within town boundaries. The revised policy will need to clearly define the scope and to be in-line with government plans and targets.

5.3 High cost of grid electrification to uneconomical areas – Extending of EFL grid infrastructure is capital intensive investment both for government and the private sector. Government as part of its social obligations has invested substantially on the extension of grid infrastructure to the remote and interior part of the four main islands serviced by EFL. These investments are not economical and financial viable to EFL due to low returns and high repair and maintenance costs.

6.0 OFF GRID SYSTEMS: MINI/MICRO GRID SYSTEMS (CENTRALIZED OFF GRID SYSTEMS) & SOLAR HOME SYSTEMS (STANDALONE SOLAR)

Key Issues to be addressed:

- High cost of Installation & Maintenance
- Unsustainable business models
- Revenue collection methods from consumers
- No mandatory standards
- Limited Maintenance skills

- 6.1 High cost of installation & Maintenance** – investing in off- grid systems is also capital intensive. The cost of supplying and installing the technology coupled with the logistical, mobilization costs and geographical location of the site all contribute to the increase life-cycle cost of the project.
- 6.2 Unsustainable business models** – community based projects are not unsustainable if it's not properly managed by the community. In most cases, there has been issues of poor governance, mismanagement and unethical or corrupt practices which contribute to the failure of the project.
- 6.3 Revenue collection methods from consumers** – ineffective mode of collections can also affect the revenue collected on the project. Stringent measures needs to be put in place to ensure effective revenue collection and consumers pay their bills on time.
- 6.4 No mandatory standards solar installation** – the existing market does neither regulate the importation of solar materials and products nor the installation on the ground. This has resulted on the installation of sub-standard materials and designs on installations done on the ground.
- 6.5 Limited Maintenance skills** – due to the limited technical skills with the communities on the maintenance of mini-grid or SHS, projects are not properly maintained resulting in regular breakdowns. Government would incur additional expenditure to send out its officers to carry out maintenance and repair works mostly with the remote and isolated parts of the country.

PART C: POLICIES

7.0 ELECTRIFICATION THROUGH EXTENSION OF EFL GRID

Key Policies to be implemented:

- Develop an Electrification Master Plan.
- Provision of electrification assistance to all consumers
- Reduce cost of electrification through application of least cost approach

7.1 Develop an Electrification Master Plan - which includes detail strategies and plan on how the Government will provide sustainable electricity access to the people of Fiji. The plan should ensure that the targets are achieved at minimal cost and least cost approach to government.

7.2 Provision of electrification assistance to all consumers on the following conditions:

- 7.2.1 All applicants for EFL grid extensions must have proper road access prior to applying for assistance. EFL will only carry out survey works if the required infrastructure is in place.
- 7.2.2 All applicants must be responsible to acquire land consent for the pulling of the LV Line and the aerials mains to their houses.
- 7.2.3 All applicants dwelling must be compliant with the MSBS (**Annex 4**) to be considered for assistance.
- 7.2.4 Applicants in urban areas must have a combined household salary of \$30,000 or less to be eligible for the assistance.
- 7.2.5 Applicants applying for house wiring need to be located at the maximum of 300m away from the nearest LV pole. Any distance more than 300m will need further LV extension.
- 7.2.6 Government has the right to use an existing intermediate pole for new power supply connections for informal settlements and villages.
- 7.2.7 Government may compensate for any loss/ damage of crops and or merchantable timber during installations on a case by case basis. This only applies to projects where the beneficiaries does not own the land involved. This will be done in close consultation with the relevant government agencies.
- 7.2.8 To promote and encourage business activities in rural areas, government may fund on the installation of three phase power supply.
- 7.2.9 Any type of Subdivisions shall also be assisted based on the following:
 - 7.2.9.1 Subdivisions within Mataqali or State land within or outside town boundaries requesting for grid extension will be considered under the Fijian Determination on Capital Infrastructure Consumer Deposit dated 1st December 2017 ('the FCCC Determination')
 - 7.2.9.2 Consumers residing in Subdivisions can be assisted with house wiring works if they qualify under 7.2.4
- 7.2.10 Consumers within informal settlements shall provide land consent from the following sources:

- 7.2.10.1 Crown Lease Land – Ministry of Lands and Mineral Resources
- 7.2.10.2 Native Lease Land – Land Owning Unit
- 7.2.10.3 Freehold Land- Consent from registered owner
- 7.2.10.4 Substandard structures identified during survey that does not comply to the MSBS in Annex 3 will not be assisted.

7.3 **Reduce cost of electrification through application of least cost approach.**

Households within 2km of EFL grid and other requirements in 7.2 shall qualify for grid supply. Those households that are beyond the 2km boundary will be provided with other types of schemes.

8.0 OFF GRID SUPPLY

Key Policies to be implemented:

- Implement the least cost approach
- Improve sustainability of SHS business models
- Improve sustainability of mini grid business models.

8.1 Implement the least cost approach to the provision of electricity on the following terms:

- 8.1.1 Green fields will be given priority over Brown fields in cases of limited budget.
- 8.1.2 Green fields customers within the vicinity (2km) of an existing mini grid system may be provided with electricity from the mini grid system;
- 8.1.3 Brown fields will be upgraded to the least cost technology provided the existing power supply is no longer in operation. Government has the right to relocate the existing power supply where it deemed necessary.

8.2 Improve sustainability of SHS business models through the following options:

- 8.2.1 **Option:** Ownership with Government

- 8.2.1.1 Government owns the system and Renewable Energy Servicing Companies (RESCOs) to carry out maintenance and collection of tariffs from consumers.
- 8.2.1.2 Each individual household is required to pay a monthly rental fee of Eighteen Dollars (\$18/month) unless and until the fee has been reviewed and adopted by Government.
- 8.2.1.3 Projects will be clustered into Service Areas (SA) and competitive tender to be called for each SA.
- 8.2.1.4 The monthly rental collected from communities will act as the service charges for the RESCOs.
- 8.2.1.5 Each contract will be for a period of not more than five (5) years.
- 8.2.1.6 Each contract will be for a period of not more than five (5) years.
- 8.2.1.7 Modification and tampering of SHS by consumers is not permitted at any given time. DOE reserve the right to pull out the systems or report the offender in such a case;
- 8.2.1.8 DOE to provide RESCO's with major spare parts from the first 2 years of operation and RESCO to be responsible thereafter until the expiry of contract.

8.3 Improve sustainability of mini grid business models. Any single power source supplying power to all houses in a community and or settlements through transmission and distribution network is considered a mini-grid system. Mini grid systems funded through government will be governed by the following:

8.3.1 Community Based Mini-grid Systems

- 8.3.1.1 All mini-grid system must register either through a Cooperative, company or other business models. The Government may assist facilitate with the company registration where deemed necessary.
- 8.3.1.2 The Cooperative/Company must comply with the existing Cooperative Guidelines or the Company's Act 2015.
- 8.3.1.3 The Cooperative/Company must apply for Generator/Installation License to the FCCC which will be issued upon Inspection & Compliance to presiding standards in line with the Electricity Act Cap180.
- 8.3.1.4 During the first three years of operation, government will oversee the operation and management of the project after which ownership will be transferred to the community. Government will also provide support in terms of technical, management and operation trainings to the communities to allow them to effectively operate and manage the project. At

least a member of the Committee or the Directors of the Company must include a female representative.

8.3.1.5 Government in consultation with relevant stakeholders will set an affordable tariff structure that also contributes to the long term sustainability of the project.

8.3.1.6 Government has the right to access and acquire any relevant information or data as and when required.

8.3.1.7 All project design and installations must comply with the local standards adopted by Government.

8.3.2 Rural Government Stations (RGS)

8.3.2.1 The operation of the RGS to be managed by Government through the Divisional Engineer Works Central Eastern (DEWCE).

8.3.2.2 The DEWCE must ensure at all times that the operation of the RGS is carried out in a more economical and sustainable manner with minimum power disruptions.

8.3.2.3 The DEWCE has the right to disconnect consumer's power supply if bills are not paid.

8.3.2.4 All RGS must at least achieve 90% of its power supply through renewable energy technologies.

8.3.3 Donor Funded Projects

8.3.3.1 All donor funded projects for rural schools, health centers and communities must register their proposal and obtain approval from the DOE before executing.

8.3.3.2 It should take at least fourteen (14) working days for the Department to vet the proposal. Any amendments to the proposal must be done within 4 working days and return back to the DOE for clearance.

8.3.3.3 The DOE has every right to reject and disapprove any proposal if it does not meet the required standards and design.

8.3.3.4 The DOE will inspect the project at different stages of implementation to ensure consistency and compliance to the required standard. This will be carried out at the cost of the donor.

8.3.3.5 The donor must apply for Generator/Installation License to the FCCC which will be issued upon Inspection & Compliance to presiding standards in line with the Electricity Act Cap180.

PART D- APPLYING FOR A SCHEME

9.0 GENERAL

9.1 The DOE will provide electrification services based on the electrification master plan (Clause 7.1) by complying with the detail procedures given in Annex1, Annex2 and Annex 3. This will ensure our service is the provided in the most efficient and cost effective manner and maximize value for the consumers. Our general approach to processing applications will be in two ways; DOE may approach green-fields based on electrification master plan or communities/consumers approach the DOE office and apply for the scheme as usual.

PART F – REPORTING, MONITORING, EVALUATION & REVIEW

11.0 REPORTING, MONITORING, AND EVALUATION

- 11.1 DOE will lead reporting and monitoring of all electrification activity, including the implementation of the EP 2020. Evaluation will be carried out externally either through third party by relevant Government agencies and/or independent non-government organizations as appropriate.
- 11.2 DOE will monitor the implementation of the EP 2020, including specific progress against the actions contained in NDP and NDC Implementation Roadmap on a yearly basis. Based on the findings, DOE may decide to review targets and activities as considered necessary. Cabinet will be updated regularly on an annual basis on the progress and achievements of the policy for its information.

12.0 REVIEW

- 12.1 This EP (Amended) 2020 policy have a validity period of four (4) years, and be subject to review prior to its expiry, if not reviewed and updated in the four year validity period.

ANNEX 1 - PROCEDURE TO APPLY FOR A SCHEME

1.0 GENERAL

This chapter sets out the procedure for villages/settlements to follow to make an application for an electricity scheme.

In addition, it also sets out the procedures to be followed by the DOE to process an application till implementation.

The information contained includes the Application Form, Information Sheet on Types of Schemes, construction, electrification committees and trainings. Also included are details of the survey.

2.0 APPLICATION FORM

A copy of the 'Application Form for an Electrification Scheme' is attached as Annex 2. Copies of the Application Form will also be made available from the PAs and DOs office. The completed applications will be returned to the PAs and DOs who will then forward them to the DOE in Suva.

Once an application is received at the DOE head office it will be registered in the Applications Register. The Applications Register will be created by the DOE as a formal document to maintain a record of all applications that are received. It is preferred this register becomes a specific file within the computer system of the DOE.

The application will be checked against the DOE's existing database to ascertain if the applicant has been assisted before and to what extent. Thereafter the Director of DOE will categorize the application and while all application may be eligible, first priority will be given to green-fields.

Following registration, it is the responsibility of the Director of DOE to ensure the relevant assigned officer is informed of the details of the application. Thereafter it is the responsibility of the assigned officer to meet with the village/settlement to discuss the application. It is expected there will be more than one such meeting to discuss the proposed choice of a scheme before it is finalized. These meetings will include the use of publicity and information materials to ensure the village/settlement is fully informed of all options and the relevant costs. If need be the Director of DOE will arrange a visit to an existing similar scheme to that proposed to be selected.

3.0 INFORMATION SHEET

- 3.1 An information sheet has been prepared in Annex 3 to assist the DOE during discussions with villages/settlements about the choice of an appropriate scheme. It sets out details of the various types of schemes for villages/settlements. This schedule sets out the scope and features of EFL supply; mini grid supply and solar home systems.
- 3.2 The Information Sheet is an important document such that it will be necessary for assigned Projects Officer to have some formal instruction on their contents. The Director of DOE will provide this instruction. The instruction will enable the field staff to discuss the choice of schemes with villages/settlements with confidence. The information sheets are not confidential and if villages/settlements request copies for further study, they should be given to them accordingly.
- 3.3 The consumer (community) will be responsible for providing labour as its form of contribution to the project.
- 3.4 Government will be responsible for the full capital cost of the project including all fees (connection fees, deposit), stamp duty and levies that may be required by EFL. Any other additional fees charged by EFL will be the responsibility of the Consumer. For premises with multiple dwellings that require multiple entries or meters, the Department will provide a single point entry or meter for the whole premise while the additional entries or meters if required will be borne by the owner of the premises at their cost.
- 3.5 Once a choice of scheme has been made the Director of DOE will then make arrangements for a detailed survey of the site of the scheme. From this survey a detailed design for the scheme will be prepared and thereafter a final cost estimate determined for budget submission only.

4.0 START OF CONSTRUCTION

- 4.1 The Director of DOE will also advise the village/settlement of the estimated time of starting construction of the scheme. It is to be understood the time of construction of any scheme has many dependencies. One of these is Government approval of the annual budget estimates to finance 100% of the capital cost of the scheme (SHS, Mini-grid projects) or 100% of the required community contribution in the case of EFL rural grid extension projects. Another is the availability of resources such as manpower and materials. The Director of DOE will inform the village/settlement about these factors. He will also keep the village/settlement fully informed of progress towards construction. The Director of DOE will keep the PAs and DOs informed likewise.

- 4.2 It is the responsibility of the Director of DOE to establish a programme of future work as a formal procedure in the head office so that the future workload is properly identified at all times. This will facilitate the availability of information to keep villages/settlements, PAs, DOs, Director of Energy and other interested parties informed.

5.0 SURVEY

- 5.1 The survey referred to in 11.6 above, will be arranged by the Director of DOE and undertaken by his staff. The Director of DOE will co-ordinate the site survey and/or EFL who will in turn liaise with the village/settlement.
- 5.2 The village/settlement will assist the survey staff during the survey by providing, at no cost, unskilled labour and accommodation on site. Survey staff will make their own arrangements for the provision of food. The village/settlement will also arrange, at reasonable cost, the provision of local road or water transport for the survey staff to access the site.
- 5.3 During the survey, agreement will be reached with the village/settlement on the location of plant items such as the power house, cable routes, distribution pillars, solar panel supports, etc. Due consideration must be given to factors such as power plant noise as well as cable routing to provide an efficient electricity distribution system.

6.0 ELECTRIFICATION COMMITTEES

- 6.1 All community/village seeking Electrification assistance must establish an electrification committee and headed by the TNK or Advisory Councilor.
- 6.2 In the event of their absence a nominated community representative upon the advice of the TNK or Advisory Councilor may head the electrification committee and confirmed by the PA or DO or Director of DOE.

7.0 TRAINING

- 7.1 The Government through DOE will facilitate capacity building training sessions for TNKs or Advisory Councilor or the nominated representative of the community on basic maintenance and management of off grid schemes including pre-disaster preparation.

8.0 GRACE PERIOD

- 8.1 The FEP 2020 provides for a grace period of five (5) years after the installation of mini Grid Systems schemes that are fully or partially funded by government. The grace period is defined as a period of time following the installation of a scheme during which the full impact of the costs associated with maintaining and sustaining a scheme is effectively catered for by the DOE.
- 8.2 SHS has an indefinite grace period subject to the lifecycle of the system;

- 8.3 Mini grid systems that are fully funded by Private companies or agencies will not be covered under the benefits of the grace period. However DOE support will be limited to the provision of technical advice and administration.

PROCEDURE FOR DONOR FUNDED PROJECTS

9.0 GENERAL

This chapter outlines the procedures to be followed and adhered to for donor funded projects. These are projects which are implemented through donor agencies, private companies and even individuals. The projects include but are not limited to SHS's, Hybrid Systems (Diesel Generator with another Renewable Energy System), Centralized Solar Systems with Energy Storage, Micro-Hydro and Wind Energy and so forth.

However, it is imperative that government is engaged in all facets of the project to ensure proper procedures and processes are followed and most importantly to safeguard the interest and participation of the local communities. The information in this chapter highlights the process and mandatory requirements the donor agencies should submit before the project is executed.

10.0 ELECTRIFICATION MANAGEMENT PLAN (EMP)

The EMP highlights the requirements and detail analysis on how the donor agency intends to implement the Electrification Project. The EMP will include but not limited to the following;

10.1 FEASIBILITY STUDY

A feasibility study needs to be conducted for any project with total value of \$100,000 or more. This should cover market analysis; CBA; evaluation of all types of risks; evaluate impacts to the communities and environment; proposed site; proposed business model; benchmarking and other studies to ascertain feasibility of the project.

10.2 DESIGN & SPECIFICATION

10.2.1 System Design and Layout

The system design and layout outlines the project layout in the proposed community. For example, for Solar Project, the donor agency to clearly demarcate the proposed site for solar installation, powerhouse and reticulation diagram etc. Google Earth and other tools can be used for this purpose.

10.2.2 Design & Technical Specifications and Standards

A system design of the propose project to be submitted together with the specifications including brands and model of all equipment that will be supplied and installed at the proposed site. All specifications to comply with and adhered to the guidelines of the Australia, New Zealand and SEIAPI. Some of the standards that are used locally include;

- AS/NZS 3000 Wiring Rules

- AS/NZS 4509 Stand-alone power systems
- AS 4086.2 Secondary batteries for stand-alone power supplies
- AS/NZS5033 PV Array
- AS 3010.1 Electrical Installations
- Supply Generating set
- AS 3595 Energy Management Programs
- AS 1359.51 Noise level limits
- AS 1768 Lighting Protection

These standards are often updated and amended so the latest version should always be applied. The DOE will undertake inspection in all the different stages of work to ensure that the approved brands, specifications and standards outlined in the proposal are adhered to and implemented.

10.3 FINANCING

The donor agency to clearly mention the sources of funding of the project. These can include but not limited to grants, concessional loans, self-funded or co-financing. In case the community is required to contribute in cash or in – kind, the donor agency to clearly highlight the amount to be paid together with all support documents and justifications.

10.4 TARIFF STRUCTURE

In terms of tariff collection, the donor agency to include the mode and means of collection tariff. These include but not limited to installing pre-pay or post- pay metering/ systems or manual payment. Proper and holistic consultation has to be undertaken with the discussion together with community, DOE and FCCC on the best mode to be adopted and will ensure that fair and equitable tariff structure is adopted.

If the donor agency is intending to operate the project and run it as a business model then a detailed and thorough financial analysis with all key indicators (i.e. payback, IRR, CBA etc.) is to be submitted.

The government will ensure that the community also benefits from the operation of the project by getting certain percentage of the revenue generated. This will be deposited into a village development account which can later be used for any socio-economic development projects within the community.

10.5 OPERATION

The donor agency must clearly mention and identify the model of operation that will be adopted on the project. These include but not limited to;

- (i) Build Operate Own Transfer (BOOT)
- (ii) Build Operate Own (BOO)
- (iii) Private Public Partnership (PPP)
- (iv) Joint Venture etc.
- (v) Grant
- (vi) Independent Power Producer (IPP)
- (vii) Other

The donor agency to provide a detailed analysis on the institutional and legal framework of the proposed model that would be adopted. This includes but not limited to the setting up of a community electrification committee to work together with the donor agency on all aspects of the project. The committee to be trained and equipped with the relevant skills and knowledge on the technical, operation and maintenance of the project at all level.

ANNEX 2- APPLICATION FORM - ELECTRIFICATION SCHEME

1. LOCATION OF VILLAGE OR SETTLEMENT REQUESTING ELECTRIFICATION

Name of Applicant(s) _____
Name of Village or Settlement _____
Name of District _____
Province _____
Distance to the nearest EFL line _____
[if chosen 4(d)] _____

2. CONTACT PERSON IN VILLAGE OR SETTLEMENT

Name _____
Postal Address: _____

Telephone No/Email _____

3. VILLAGE/SETTLEMENT DETAILS

Number of households _____
Do you want electricity for anything other than household lighting and a power point? If Yes, please specify.

4. TYPE OF ELECTRIFICATION [please tick]

[a] Solar lighting in a community center or church _____
[b] Diesel lighting scheme for each household _____
[c] Hydro scheme for house lighting _____
[d] EFL 24 hrs connection to each household _____
[e] Any other (please specify) _____

Signature of contact person: _____
Date _____

REQUIREMENTS: FOR OFFICIAL USE ONLY

1. EFL FORM ☐ 2. COPY OF TITLE/TNK LETTER ☐ 3. TIN LETTER ☐
2. BIRTH CERT ☐ 5. PASSPORT SIZE PHOTO ☐

ANNEX 3 - INFORMATION SHEET

1.0 INFORMATION SHEET - SUPPLY FROM EFL GRID

1.1 SCOPE OF EQUIPMENT

It is important Regional Manager Operation advise villages/settlements who wish to select this scheme, that it must be close enough to an existing appropriate EFL supply (within 2km) to enable such scheme to be economically viable. This will be determined from the costing calculations during survey. This scheme includes the following major equipment items:

- a) An extension of the existing EFL supply to a point adjacent to houses or buildings to be connected to the supply.
- b) An electrical installation in each residence consisting of :
 - Two 18W (2ft) fluorescent lights
 - One 10A power point
 - One metre box with main switch and current fuses
- c) An electrical installation in one community facility to provide appropriate lighting and GPO.
- d) A service connection from the EFL supply to each of the buildings which will have an electrical installation.

1.2 FEATURES

The features of this scheme are:

- a) The provision of a continuous power supply.
- b) The village/settlement and the individual householders become consumers of EFL and are thereby subject to the rules and regulations which govern an EFL electricity supply.
- c) The EFL tariff applicable to the supply includes all maintenance and sustaining costs of the EFL system up to the point of connection of the building service main to the EFL overhead line.
- d) The individual consumers are responsible for maintaining and sustaining their own building electrical installations and the service connections from the EFL overhead line.
- e) Consumers are not entitled to the benefits of the grace period.
- f) The DOE will pay the EFL connection fees; deposit and stamp duty for each building included in the scheme.

2.0 INFORMATION SHEET - SUPPLY FROM CENTRALIZED MINI-GRID SYSTEMS

1.2 SCOPE OF EQUIPMENT

It is important that DOE advise villages/settlements who wish to select this scheme that the scheme must be close enough to an existing appropriate supply from a centralised generating plant such as RGS or village hybrid schemes to enable such a scheme to be economically viable. This will be determined from the costing calculations during survey. This scheme includes the following major equipment items.

- a) An extension of the adjacent distribution network from the centralised generating plant to a point adjacent to the buildings proposed to have an electrical installation.
- b) An electrical installation in each residence consisting of:
 - Two 18W (2ft) fluorescent lights
 - One 10A power point
 - One meter box with main switch and circuit fuses
- c) An electrical installation in one community facility to provide appropriate lighting and GPOs as well as a meter box with main switch, and circuit fuses.
- d) A service connection from the centralised supply system to each of the buildings with an electrical installation.
- e) Any extension to the number of lights and GPOs will be catered for by the consumer.

2.2 FEATURES

The features of this scheme are:

- a) The provision of a continuous electricity supply for larger systems such as in RGS while intermittent for smaller systems.
- b) Power source will be from the most viable and locally available energy resources. This includes either diesel hybrid systems with solar; wind; wave; and can be solely from hydro power or others.
- c) The village/settlement and the individual householders become consumers of the power supplier company/cooperative. They will be subject to the wiring rules AS/NZ 2009. The local tariff as approved by FCCC will be applicable instead of the EFL tariff.
- d) The consumers are not liable for the payment of any maintenance or sustaining costs associated with the supply. These costs are included in the tariff for the supply.
- e) The consumers are liable for the maintenance and repair of the electrical installation in their buildings including the service connections from the local centralised system to the buildings.
- f) The consumers will be entitled to the benefits of the grace period 5 years.

- g) Mini grid systems which are 80kw or less will be operated by the Electrification Committee while larger systems will be managed by community cooperatives or private companies.

3.0 INFORMATION SHEET - VILLAGE/SETTLEMENT SOLAR LIGHTING

3.1 SCOPE OF EQUIPMENT

This scheme includes the following major equipment items for each individual household:

- a) Solar panels installed on a Galvernized pole with adjustable tilt brackets
- b) Three by 9W LED bulb
- c) One 7W LED bulb
- d) One 12V sealed battery
- e) One battery charge-controller
- f) One by 300W Inverter.

3.2 FEATURES

The features of this scheme are:

- a) A Solar Home System will be provided to a consumer at no capital cost but after MOA/MOU has been signed;
- b) The village/settlement or individual householders must maintain the systems which usually only involve maintaining the battery charge at the correct level and keeping the equipment clean. Equipment manual are to be followed;
- c) The scheme is entitled to the benefits of grace period for the lifetime of the systems.
- d) DOE will provide one or more sets of the above major equipment's for community facility in order to provide an appropriate lighting installation.
- e) Main School building blocks with office will be provided with centralized systems of not more than 5kw.
- f) Teacher's quarters, Dormitories, library, dining hall and other amenities will be provided with normal SHS.

ANNEX 4 - MINIMUM STRUCTURAL BUILDING STANDARD

1.0 House Shape

- 1.1 House or dwelling must be fully enclosed and has minimum two doors and a window.
- 1.2 House shape should be square or rectangular. Avoid “T” or “L” shaped houses

2.0 Foundation

- 2.1 Foundation should be constructed using quality material.
- 2.2 For concrete floors, steel bars should extend beyond the foundation walls to aid proper securing of the wooden structure to the foundation.
- 2.3 If timber posts are used to support the building, make certain that they are adequately secured into the ground using concrete. To aid stability and to avoid isolated movement of the posts, diagonal braces can be used for reinforcement.

3.0 Framing and Cladding

- 3.1 Ensure that cladding material used provides sufficient strength and that adequate bracing has been provided to withstand high winds.
- 3.2 Studs spacing should be 24” on centres.
- 3.3 Studs are doubled around openings
- 3.4 Diagonal bracing is provided at corners
- 3.5 Metal straps are used to connect components

4.0 Roofs

- 4.1 If galvanized sheets are used, ensure that they are of appropriate gauge (24 gauge) and are properly secured to ensure adequate resistance in high winds
- 4.2 Allow sufficient overlaps to ensure that the edges of the sheets can be bent over to prevent lift in high winds
- 4.3 Roofing nails should be galvanized, with large steel washers at their heads

5.0 Porches

- 5.1 Build verandahs and porches as separate structures rather than extensions of the main building, so that, if they are blown away, they will not damage the rest of the structure

6.0 Shutters

- 6.1 Shutters should be provided for all glass openings and any other opening that may require protection from strong winds. If shutters are of the removable type, be certain that they can be installed quickly and easily.

7.0 Design and Construction

- 7.1 Secure all plates to foundation by means of bolts, straps, wood bracing or by using other special connectors to resist wind or water pressures.
- 7.2 Secure all studs to sill plates and to top plates using metal connectors or straps
- 7.3 Ensure that metal straps or connectors have been used to make a positive connection from the foundation through to the structural members of the roof

PARLIAMENT STANDING COMMITTEE ON PUBLIC ACCOUNTS

PERFORMANCE AUDIT REPORT ON MANAGEMENT OF RURAL ELECTRIFICATION (PARLIAMENTARY PAPER NO 153 OF 2019)



| Hasmukh Patel | Chief Executive Officer | Energy Fiji Limited |

| Parliament of Fiji |
| Wednesday 18th March, 2020 |
| Fiji Parliamentary Precinct, Government Buildings, Suva |

Agenda

1. Questions - Public Accounts Committee
2. Sustainable Development Goals
3. EFL Infrastructure
4. National Development Plan
5. Electricity Access
6. Renewable Energy Plans
7. Power Development Plan (PDP)
8. Video Presentation

Discussions

➤ Public Accounts Committee - Questions

1. Policy and Procedures for the Rural Electrification Program

Please advise on the status of consultation with stakeholders and the update on the review of the Rural Electrification Policy and Standards Operating Procedures.

Response

- EFL carries out surveys and preliminary design upon request by the Department of Energy (DOE), Ministry for Infrastructure, Transport, Disaster Management & Meteorological Services (MITDM&MS) and provides quotations for identified RE Schemes.
- The DOE advises EFL of the schemes that are earmarked for construction and connection to the EFL Grid on a yearly basis (as announced at the National Budget).
- Once payment is received for the respective RE schemes, wayleaves are obtained, designs are finalized, and construction is programmed (by EFL Teams or Contractors appointed via Tender).
- The Rural Electrification Projects Implementation Committee (DOE, EFL & MoE) meet on a regular basis to review progress.

➤ Public Accounts Committee - Questions

2. Human Resources

Please advise what is the status of the staff structure of EFL on RE Unit?

Response

- The Parliamentary Paper 153 of 2019 does not make any reference to staff structure of EFL.
- EFL does not have a separate Rural Electrification Unit. Works required for Rural Electrification Projects are handled by existing teams from the Lands Affairs (Survey & Wayleaves), Design, Finance, Supply Chain, Legal, Construction Team and Customer Services. (Refer to flowchart for detailed information)
- The construction work in the field is managed by EFL Supervisors, Engineers and executed by external Contractors and EFL Construction Crews. Additional staffing was approved by the Board in the areas of: Lands Affairs, Design and Construction areas to cater for the increase in Rural Electrification work to ensure the schemes were implemented as programmed.

➤ Public Accounts Committee - Questions

3. Funding of Rural Electrification Unit Programs

Can EFL provide the summary of the REU Programs by Divisions with its associated costs as at March, 2020.

Response

	2017	2018	2019	2020
Government Funded Rural Electrification Projects	\$10.2M	\$11.92M	\$11.18M	\$1.4M (YTD)
Total RE Schemes Completed	71	127	98	27
Central	18	34	25	6
Western	32	61	43	18
Northern	21	32	30	3
Household Connected	3,328	2,469	2,213	295

- EFL spent a total of \$22.85 million in 2019 on the construction of new Government Rural Electrification Schemes, Grid Extensions for Commercial and Industrial Projects, Power-System Reinforcement Works and Contract Jobs
 - \$11.18M - 98 rural electrification projects,
 - \$7.76M - 71 General Extension Projects for Commercial and Industrial Customers and
 - \$0.92M - 26 Contract Jobs
 - \$2.99M - 23 Distribution Power System Reinforcement Projects

➤ Public Accounts Committee - Questions

4. Administration and Implementation of Rural Electrification

a) Diesel Generator Scheme

Can EFL advise on the Rural Electrification Policy and whether consultation conducted have incorporated the necessary changes? If not, why not?

b) Solar Schemes

Can EFL explain its role on how does the Rural Electrification Program incorporates the Leonardo DiCaprio Foundation on Rural Electrification funding Programs?

Response

- a) DOE
- b) EFL through its subsidiary, Viti Renewables were involved in the Vio Island Electrification Scheme in Lautoka. With the Divestment of EFL, this role may need to be reviewed.

➤ Public Accounts Committee - Questions

5. Records Maintenance

How does EFL maintain its records database on Rural Electrification and Grid Extensions?

Response

Prior to the extension of the EFL Grid:

- Surveys are undertaken, Wayleaves obtained, System Load-flow analysis undertaken & approved, Scheme Designs finalized, CAPEX approvals obtained & Tenders called for and awarded to compliant Contractors (Refer to flowchart for detailed information).
- Upon Completion of RE Schemes, EFL updates its Geographical Information System (GIS) Database. Upon completion of House Wiring by DOE appointed Contractors, Application for Supply Forms has to be lodged to EFL to register the individual Customers to ensure our Customer Database is maintained.
- Progress of all RE Schemes are provided to the Rural Electrification Projects Implementation Committee on a regular basis
- Updates are also submitted to the EFL Board on a Monthly basis

➤ Public Accounts Committee - Questions

Sustainable Development Goals (SDGs)

1. Describe briefly, the general level of awareness by the staff members of your organisation, of Fiji's 5 years & 20 years National Development Plan, the 2030 Agenda, the Sustainable Development Goals (SDGs) and the SAMOA Pathway?
2. Describe the mechanism, in any, currently in place in your organisation to enhance awareness of your staff members, of the alignment between the National Development Priorities, as per the Fiji's 5 years & 20 years National Development Plan, with the SDGs and its targets and indicators?
3. Describe how your entity monitor and report on the progress of the implementation of Fiji's 5 Years & 20 Years National Development Plan and of the SDGs under your responsibility?
4. Is your organisation a part or member of an inter-agency or inter-ministerial/departments co-ordination mechanism that plan, monitor evaluate the progress of the implementation of the National Development Plan and the SDGs under your responsibility?

If Yes:

- a) How often does it meet?
- b) What aspects of its function can it be improved?

If No:

- c) Do you see the need for such a mechanism?

➤ Public Accounts Committee - Questions

Sustainable Development Goals (SDGs) *cont.*

5. Do you think your organisation is sufficiently equipped to ensure an integrated and coordinated decision making process for SDGs implementation and for strategic planning?
6. From your perspective, what are or ought to be the roles/functions of the lead government agency for coordinating the SDG implementation, and (b) how have these roles/functions been institutionalized?
7. From your best recollection, what steps has the Fiji Government taken so far to update or review its institutional setup (beyond the SDGs lead agency) in order to support the SDGs implementation?
8. Briefly describe steps, if any, taken by your organisation to engage sub-national level including authorities, including provincial, district and community level authorities, in the design and implementation of policies and measures related to SDGs realization (for example by encouraging the localization of the SDGs or the design of local strategies)? If so, what initiatives have been taken in this respect and what have been the results and or challenges so far?
9. What institutional arrangements or mechanisms are in place in your organisation to engage civil society organizations, scientific community and private sector in the monitoring, review and follow-up of the SDGs?
10. Do you think there is an interest within your organisation to learn more about other countries experiences, training, tools, partnership arrangements, peer-to-peer learning, curricula and be a part of a global public service award system on SDGs implementation?

Electricity seems to have an overarching impact on most of the SDGs.

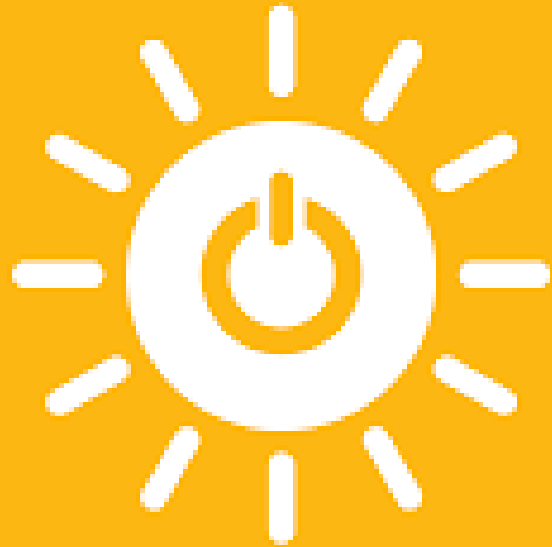


SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



7 AFFORDABLE AND CLEAN ENERGY



- ▶ EFL is responsible for the generation, transmission, distribution and retail of electricity in the larger islands of Viti Levu, Vanua Levu, Ovalau & Taveuni, which accounts for approximately 90% of the country's population.
- ▶ Uniform tariff rates are charged for electricity used by each consumer group, determined by the Fijian Competition & Consumer Commission (FCCC) in consultation with Government
- ▶ EFL Electricity Rates are the cheapest in the South Pacific Islands and to most parts of Australia & New Zealand
- ▶ EFL meets the annual electricity demand with 50% - 65% of clean/renewable energy - past 10 years
- ▶ EFL envisages to inject more diversified renewable energy (Hydro, Solar & Biomass) into the EFL grid in the years to come.

VISION

'Energising our Nation'

MISSION

'We aim to provide clean and affordable energy solutions to Fiji with at least 90% of the energy requirements through renewable sources by 2025'

Power Lines	Total (km)	Overhead (km)	Underground (km)	Poles/Towers
Transmission - 110kV & 132kV	125.37	125.37	0.00	91.85
Sub-transmission - 33kV	554.88	554.88	0.00	5,267
Distribution - 11kV	147,200	147,200	0.00	80
Total (km)	10,492.58	9577.45	915.13	99,306

EFL POWER SYSTEM LEGEND

132kV Line	Diesel Power Station
Proposed 132kV Line	Hydro Power Station
33kV Line	132kV Substation
Proposed 33kV Line	33kV Substation
11kV Line Coverage	Butoni Wind Farm
Proposed 11kV Line	Biomass / IPP Power Station
6.6kV Line Coverage	FEA Repeater Station



FIJI ISLANDS

POWER INFRASTRUCTURE



➤ National Development Plan Target - Electricity Access

Electricity Access - Government plans to achieve 100% access to basic electricity for all Fijians by 2021.

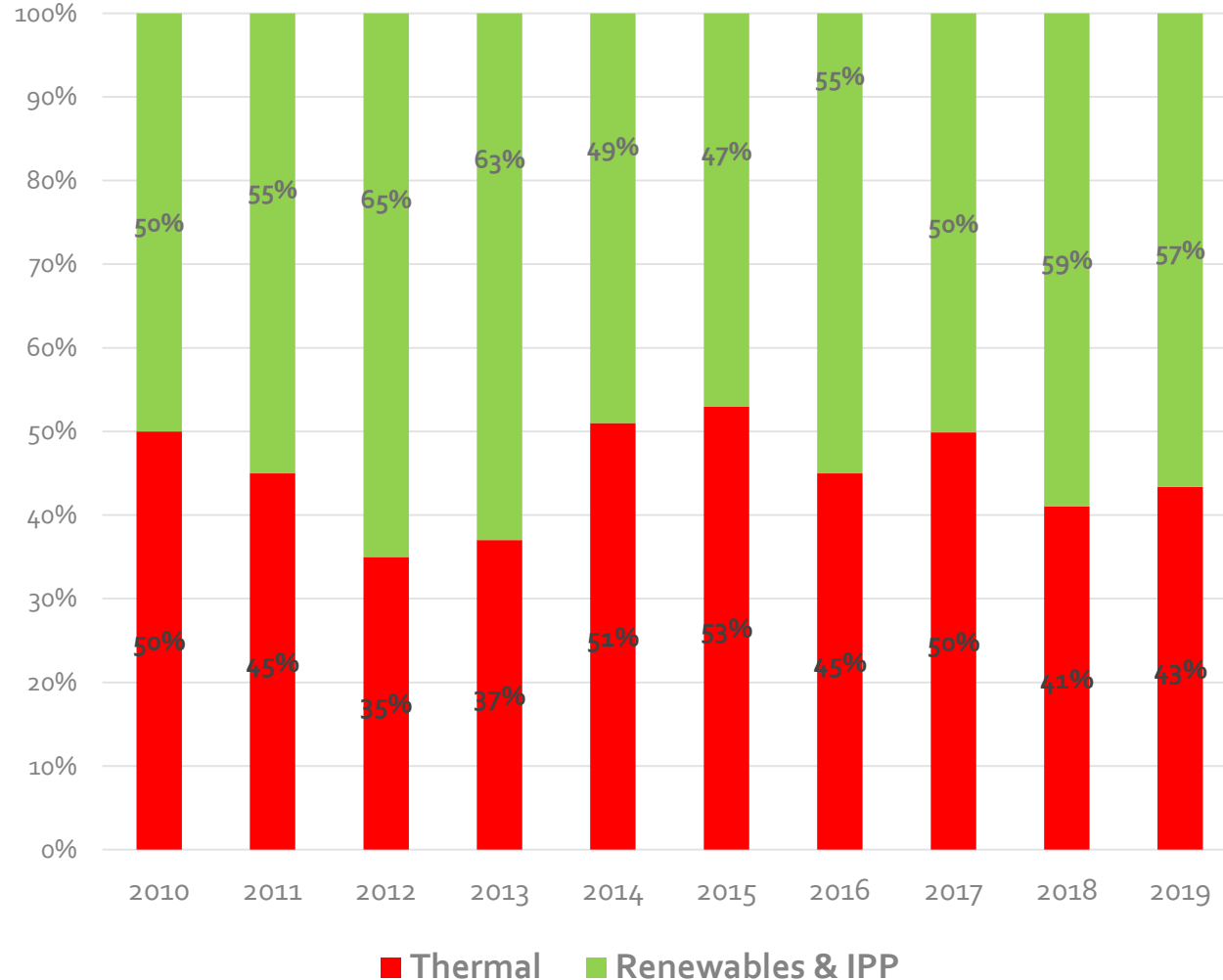
Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Customer Numbers	150,724	155,912	159,017	162,656	167,017	171,939	174,530	182,439	194,404	199,020
Annual Growth		3.44%	1.99%	2.29%	2.68%	2.95%	1.51%	4.53%	4.37%	4.53%

- ▶ Customer Account Growth - Last 10 years average growth rate is around 3.14%
- ▶ Currently stands at 200,094 (End of February, 2020)

➤ National Development Plan Target - Renewable Energy Target

➤ Renewable Energy Target - Fiji envisions to meet its electricity needs from renewable sources as follows: 81% by 2021, 90% by 2026, 99% by 2031 & 100% by 2036.

Ten Year Generation Mix %



EFL Renewable Power Stations

- Monasavu Hydro Electric Scheme - 72MW with anticipated generation of 400GWh/annum
- Nadarivatu Hydro Electric Scheme - 44MW with anticipated generation 101GWh/annum
- Butoni Wind Farm - 9.9MW with anticipated generation of 5GWh/annum
- Wainikasou Hydro Electric Scheme - 6.6MW with anticipated generation 26GWh/annum
- Nagado Hydro Electric Scheme - 2.8MW with anticipated generation of 12GWh/annum
- Wainiqueu Hydro Electric Scheme - 0.8MW with anticipated generation of 2GWh/annum
- Somosomo Hydro Electric Scheme - 0.7MW with anticipated generation of 2GWh/annum

➤ EFL's Power Development Plan (PDP)

- ▶ EFL reviews its 10 year Power Development Plan (PDP) every 2 years.
- ▶ The ten (10) year power development plan contains the load forecasting and power generation planning scenarios up to 2026 for Viti Levu, Vanua Levu, Ovalau and Taveuni Power Systems with associated network assets to be augmented/developed and the investment plan required to implement this 10 year Power Development Plan.
- ▶ It is estimated that the total funding to execute the 10 Year Power Development Plan will require an investment of around FJ\$2.4B
 - ▶ Development of Power Generation Projects - F\$1.6B
 - ▶ Transmission & Distribution Power Network - F\$0.8B
- ▶ EFL expects the private sector to invest in the Power Generation Sector as Joint Venture (JV) Partners, Independent Power Producers (IPP) or on a Private Public Partnership (PPP) basis.
- ▶ Ongoing discussions with prospective IPPs to develop various Renewable Energy technologies. i.e. Biomass/Waste to Energy Projects, Solar Projects & Hydro Projects.

➤ Renewable Energy Projects

Operational Renewable Energy Plants

▶ Biomass

- ▶ TWIL supplies up to 6MW and 12M - 15M units of electricity per annum
- ▶ FSC supplies energy to the EFL grid during the crushing season from their Lautoka & Labasa Sugar Mills
- ▶ Nabou Green Energy Limited has a 10MW plant and started feeding into the EFL grid since July, 2017
- ▶ Solar - surplus energy from solar roof-top installations are currently fed into the EFL grid at an agreed upon price between EFL & the individual customers and the number keeps increasing - presently 166 customers



➤ Prospective Renewable Energy Projects – Viti Levu

EFL has plans to develop the following renewable energy schemes:

- ▶ Biomass - Waste to Energy Plant by utilizing municipal waste - via JV, IPP or PPP model
- ▶ Solar - 3 x 5MW (without batteries) - via JV, IPP or PPP model in North Western Viti Levu (Sigatoka to Rakiraki corridor)
- ▶ Hydro - Upper Wailoa/Qaliwana Diversion Project & the Lower Ba Project.
 - ▶ Presently European Investment Bank is carrying out full feasibility studies for the first project. The final feasibility report will be completed by July, 2020.
 - ▶ Furthermore, the intention is to carry out full feasibility studies for the Lower Ba Project as well on completion of the above.
- ▶ Hydro - Namosi Hydro Project
 - ▶ 3 Hydros in Namosi with a total capacity of 32MW and anticipated total energy output of 120M units/annum. Feasibilities completed, EIA obtained & land has been acquired by EFL for this Project.

➤ Prospective Renewable Energy Projects – Vanua Levu

- ▶ There are two independent power systems in Vanua Levu - Labasa & Savusavu
- ▶ EFL had called for Expressions of Interest for the Development of Grid Connected Renewable Energy Projects in Vanua Levu, covering both Labasa & Savusavu Power Systems - Opportunities for either JV, IPPs or PPP
- ▶ There is also an opportunity for the establishment of a independent mini grid in the township of Nabouwalu.

➤ Prospective Renewable Energy Projects – Ovalau

- ▶ The entire island of Ovalau is electrified with fossil fuel generation.
- ▶ The present peak demand in Ovalau is 1.6MW
- ▶ The largest customer in Ovalau is PAFCO with a peak demand of 1.2MW
- ▶ Study has been undertaken for a Solar Hybrid Plant by a Korean Company
- ▶ EFL will be calling for expressions of interests soon in this regard.

➤ Prospective Renewable Energy Projects – Taveuni



- ▶ EFL entered the island of Taveuni in December, 2017.
 - ▶ Presently only 30% of the island is electrified.
 - ▶ The remaining 70% will be electrified over the next 2 years.
- ▶ The present demand on the island is 340kW and it is anticipated that the demand will increase to 2.4MW once the entire island is electrified by extending the grid.
- ▶ The present power generation is as follows:
 - ▶ Somosomo Mini Hydro - 700kW
 - ▶ Waiyevo Diesel Plant - 2 x 1MW
 - ▶ The Mini Hydro Scheme is able to cater for the present demand of 340kW practically throughout the year
- ▶ Through grant aid, KOICA is in the process of developing a 1MW Solar PV Plant with 400kWh battery capacity to be connected to the grid. This project is anticipated to be completed by December 2020.
- ▶ The prospect for further development is to establish renewable energy schemes of around 1.5MW to 2MW based on the demand growth as the grid is extended over the next 2 years.

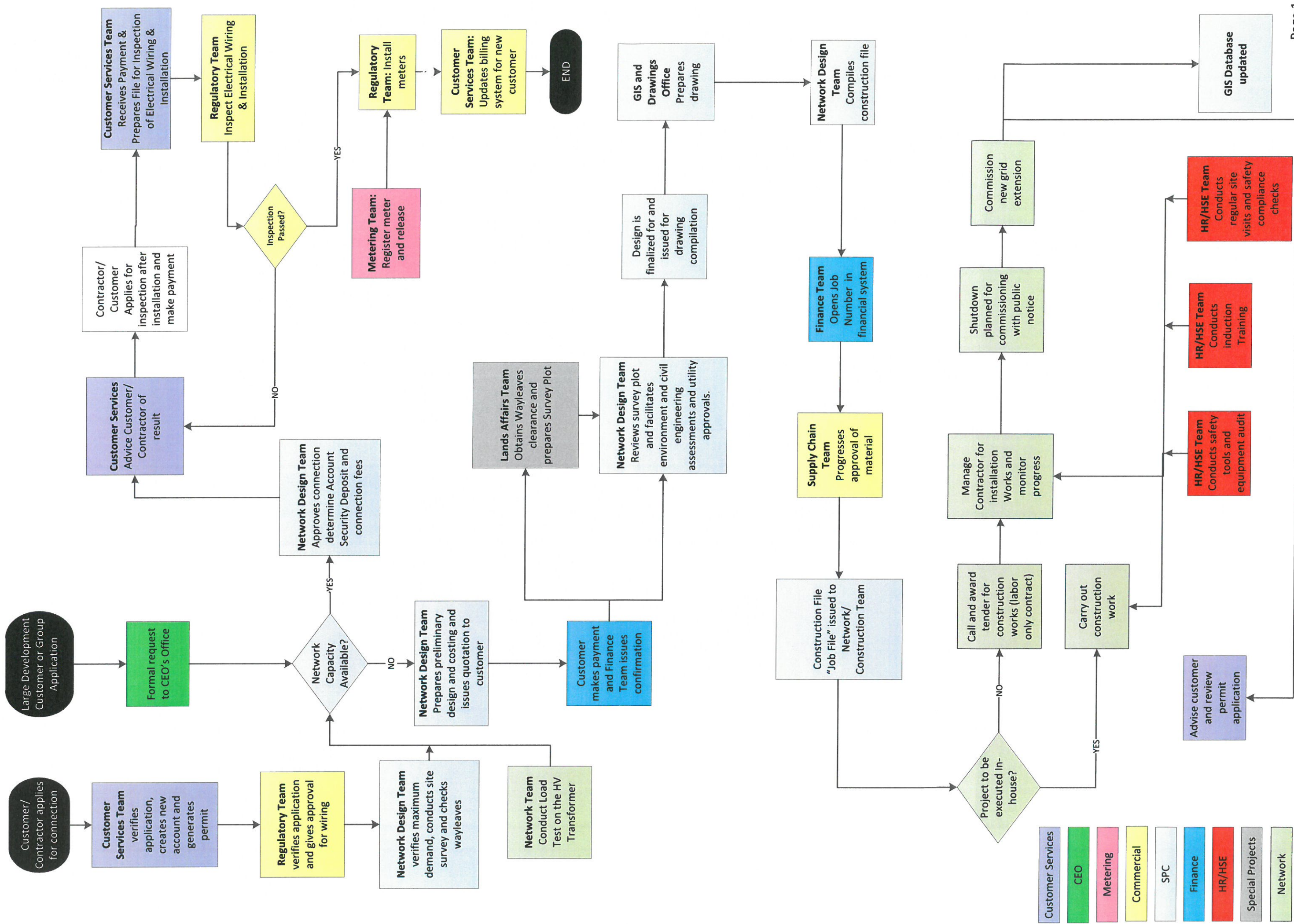




VINAKA

Hasmukh Patel
Jitendra Kumar
Karunesh Rao
Energy Fiji Limited







MINISTRY OF FORESTRY

HEADQUARTERS

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P. O. BOX 2218, Government Buildings
Suva, FIJI

Phone: (679) 3301611
Email: tfong@govnet.gov.fj

Ref: FO/G/5-12

Date: Thursday 19 March 2020

Honourable Alvick Maharaj
Chairman
Public Accounts Standing Committee
Parliament of the Republic of Fiji
Suva

Dear Sir,

Re: Performance Audit Report - Fiji Forest Policy Statement 2007 (PP No. 153 of 2019)

Thank you for your letter dated 13/03/20 and the questions therein, I am pleased to submit the Ministry of Forestry's response.

I also submit below the names of the officials who will represent the Ministry at the PAC Hearing scheduled for this afternoon at 1.00PM:

1. Mr. Pene Baleinabuli, Permanent Secretary
2. Ms. Sanjana Lal, Conservator of Forests
3. Mr. Semi Dranibaka, Executive Director Research and Development
4. Mr. Ilai Tulele, Programme Team Leader Fiji REDD+
5. Ms. Deborah Sue, Director Forest Resources Assessment and Conservation
6. Mr. Mohammed Abdul, Forestry Officer Geographic Information Systems (GIS)
7. Ms. Olivia Vakaloloma, Principal Economic Planning Officer

I wish to request that we also conduct a 7-Minute power-point presentation to the PAC to show the extent of work in data collection and analysis on specific forests issues and other critical national considerations, such as logged out areas, potential areas for conservation and biodiversity enhancement, potential areas for logging, etc. This information is best shared on-screen for an in-depth appreciation of the data collection work undertaken by the Ministry as part of the sustainable management of Fiji's forest resources.

I apologise for the delay with the submission of the Ministry's response.

Yours sincerely,

G.P.N. Baleinabuli
Permanent Secretary





MINISTRY OF FORESTRY

PUBLIC ACCOUNTS COMMITTEE QUESTIONS & MINISTRY OF FORESTRY'S RESPONSES

Committee Hearing

Performance Audit Report on Progress of Implementation of Policies and Strategies in Fiji Forest Policy Statement 2007 (Parliamentary Paper No. 153 of 2019)

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
CONSERVATION OF FORESTS AND BIOLOGICAL RESOURCES				
1. Land Use Planning and Forest Classification	Ongoing – MOE Strategic Planning unit is responsible for consolidation, no response of the timeline to finalize the Land Use Plan. Functions Map was submitted by the MOF	Partially implemented. Ministry of Economy (MoE) Strategic Planning unit has not finalised the consolidation of the Land Use Plan. Ministry of Forestry (MoF) has contributed through the Forest Function Map. The status of finalisation is not known as no response received from MoE despite	Could an update be provided on the status of the National Land Use Plan?	<p>The Ministry of Forestry has, to-date, yet to develop a national land use plan as this requires inputs from other agencies as well. However, the Ministry has, under the REDD+ Readiness Project, started to develop land use plans for the 20 districts identified under the Emission Reduction Program (2020 – 2025).</p> <p>This work will be continued in collaboration with the iTaukei Land Trust Board (TLTB) and other relevant</p>

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
	to MOE.	several follow-up.		<p>agencies.</p> <p>The 20 district land use plans will cover 451,360 hectares or 24.6% of Fiji's total land area.</p> <p>Other work on land use planning that has been completed include, the TLTB's work and development of land use plans for the Western and Lami-Suva corridors of Viti Levu; and Secretariat of the Pacific Regional Environment Programme (SPREP) work under the Pacific Ecosystem Based Adaptation to Climate Change (PEBACC) on the Taveuni Land Use Plan.</p> <p><i>Evidence: Refer to PPT on the ERP sites.</i></p>
2. Awareness Program	NFMV do not want to have an MOU with the DF. The reason is they do not want to create a mishaps on the side of the forest stakeholders. Other reasons are outlined in the report section of the MOU agreement.	<p>Not Implemented.</p> <p>Signing of MoU between the Ministry of Forestry and the Nature Fiji Mareqeti Viti (NFMV) on awareness undertaken by NFMV on behalf of the Ministry was unsuccessful as NFMV decline to have MoU as they are self-funded and to avoid mishaps that could affect their organisation.</p>	<p>In the absence of MOU between NFMV and the Ministry, how is the Ministry doing in terms of providing landowner awareness and also getting the resource owners to provide meaningful contribution to land use planning and forest certification?</p> <p>Are there incentives involved?</p> <p>Are there measurable</p>	<p>The Ministry's Extension and Training Division have been undertaking awareness as part of their core responsibilities. Apart from face to face awareness, the media is widely used to promote and advocate awareness on the work of the Ministry. The 30 Million trees in 15 Years Initiative (30MT15Y) is an example of the Ministry's effective Outreach.</p> <p>Some examples of meaningful contribution from landowners are prevalent in the Ridge to Reef (R2R) Project, Reforestation of Degraded Forests (RDF), Sandalwood Project, and Reducing Emissions from Deforestation and Forest Degradation (REDD+), all of which involve incentives in the form of cash for work, alternative livelihood sources, training and capacity building as well as village development projects.</p>

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
			<p>targets in place to undertake this?</p> <p>Can the Ministry provide an update on the status of the Nature Fiji Mareqeti Viti and other stakeholders awareness?</p>	<p>Measurable targets include number of trees planted, areas of degraded forests reforested, number of communities consulted and responses from the communities which are widely broadcasted through social media.</p> <p>The Ministry works closely not only with NatureFiji/MareqetiViti (NFMV) but several other Civil Society Organisations (CSOs) such as Conservation International (CI), International Union for Conservation of Nature (IUCN), Wildlife Conservation Society (WCS), National Trust of Fiji, Soqosoqo Vakamarama and Grace TRI FAM. These agencies promote conservation and biodiversity enhancement in collaboration with the Ministry of Forestry. They are also part of the Protected Areas Committee (PAC) under the Ministry of Environment and of which Ministry of Forestry is a member. All conservation efforts are addressed through the PAC committee.</p> <p>The Ministry has developed draft MOUs with NFMV, CI, WCS and IUCN which are ready for consultation phase before submission to Cabinet.</p>
3. Forest Inventory	The Ministry responded that they will try creating a portal in its website to accommodate the NFI reports.	<p>Not Implemented.</p> <p>The Ministry is yet to upload in to its website any of the three NFI reports for the 3 NFI conducted.</p>	Can the Ministry update us on the status of the 2005 National Forest Inventory (NFI) and also when will the reports be made available in their website or publicly	The Ministry is engaging a consultant to complete the National Forest Inventory (NFI) Report which will be published this year and will be uploaded on the Ministry's website.

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
			through other means?	<i>Evidence: Provide TOR for consultant.</i>
4. Establishment of Procedures NFI procedures for gathering NFI data and storing them in the NFI database as well as compilation of NFI reports are still yet to be established to ensure that the information obtained from timber harvesting operations from either native or plantation forest is incorporated into the NFI database and compiled into a report.	The Ministry responded that they do not have an SOP developed as yet till to date. a timeline provided for uploading of the NFI results in database. No NFI SOP.	Not Implemented. The Ministry has not developed NFI Standard Operating Procedure (SOP), and no timeline on the uploading of the NFI results in to the database.	Can the Ministry confirm if any SOP has been developed for the NFI?	Yes an SOP for the NFI exists and a copy of which is attached. <i>Evidence: copy of NFI SOP.</i>
			The audit had also recommended in their 2014 report that information obtained from timber harvesting operations from either native or plantation forest be incorporated into the NFI database? Has this been addressed?	The Ministry is developing an Integrated National Forest Monitoring System (NFMS) framework that harmonizes the Timber Revenue System (report from the timber harvesting operations) and the Forest Information System (NFI) database. The system will allow the online updating of all forest cover changes, i.e. removals (harvesting) and reforestation/afforestation data. A copy of the signed contract for the Consultant is attached. <i>Evidence: Signed Contract</i>

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
5. Mangrove Management	Restriction on mangrove Commercial Harvesting is incorporated in to the Forest Policy Statement 2007 this was confirmed during audit review of the policy.	Implemented. Commercial harvesting of mangrove is restricted by the Ministry of Forestry through a circular distributed by the former conservator and through the draft Mangrove Management Plan (MMP) CF participation through Mangrove Management Committee (MMC) and Protected Area Committee (PAC) is a platform where the Ministry creates awareness on mangrove conservation.	What steps have the Ministry taken to formalise the ban on commercial harvesting of mangroves? Does the Ministry provide license to harvest mangroves to various vendors and what is the current procedure?	The Ministry has implemented the Forest Policy in so far as mangrove management is concerned. All commercial harvesting of mangroves ceased since 2014 upon the directive from Ministry of Lands, who manages foreshore lands on behalf of Government. The Ministry of Forestry no longer issues any licenses for harvesting mangroves. The Ministry will now formalise the ban in collaboration with the Ministry of Lands. Additionally, the Ministry, in partnership with other agencies, has been developing alternative livelihoods for communities close to mangrove forest areas, through the International Timber Trade Organisation (ITTO) project, and is an active member of the Mangrove Management Committee, with all the Civil Society Organisations (CSOs) and the Ministries of Environment, Lands and Fisheries. We are collaborating for the sustainable management and protection of mangrove forests.
INTERGRATED FOREST RESOURCE MANAGEMENT				
6. Management Plans	Bouma Forest Park is community owned and it is a preserved area untouched and undisturbed. It is beyond Ministry of Forestry's control to interfere with Bouma	Not Implemented Bouma Forest Park is community owned and it is a preserved area untouched and undisturbed, thereby EMA is not applicable as EMA requirements only appropriate for forest harvesting activities.	Can the Ministry provide an update on the development and update of forest management plans for forest resource owners such as the Bouma Forest Park, Colo i Suva	In collaboration with CSOs, management plans have been developed for the following: <ul style="list-style-type: none"> National Trust of Fiji for the Bouma Forest Park (attached); Colo I Suva Forest Park (work in progress by the Ministry); and National Trust of Fiji, CI, and FAO for the Sovi Basin (attached).

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
	park communities as the park is privately owned and is Undisturbed.		<p>Park and other parks including Sovi Basin?</p> <p>Do they take into account the requirements of the Environment Management Act in their plans?</p>	<p>Yes, all Management Plans adopt the provisions of the EMA 2005.</p>
			Has the Ministry finalised the Mangrove Management Plan (MMP) with the Ministry of Lands through the Conservator of Forests?	The Ministry had made its contribution through the submission of information and maps to the Mangrove Management Committee (MMC). The Ministry will follow up with the Ministry of Lands on the progress of this MMP.
7. Strategic Harvesting Plan	Ministry responded that licenses are given based on the areas to be harvested provided on the Management Harvesting Plan. Most wood lots completed their harvest in less than six months and 2 years are unrealistic time frame. The CF has the prerogative to give licenses based on compliances to the FFHCOP and other forest legislation.	Partially Implemented Most licenses given were based on Management Plan of the proposed harvest areas. The duration of most woodlots harvesting management plan are within 1 year or less. Therefore road making activities are within the harvesting timeframe and not exceeding it, as wood lots and land owners have other planting options.	Given that under Table 2 of the report for the Forest Harvesting Plan for woodlots submitted to the Ministry has indicated that most harvesting activities are done within 2-12 months. Will there be any amendments to the requirements of the Fiji Forest Policy as mentioned above to reduce the period required for Strategic Harvesting Plans to be	<p>The Ministry is already accommodating this by verifying the volume of forest resource in a particular woodlot, which subsequently determines the duration of license issued.</p> <p>The 1992 Forest Act (Section 11) has provisions for duration of licenses to be determined based on the forest resources available and the post- harvest land use. The duration can be up to 30 years.</p> <p>Additionally, the Ministry of Forestry is working on creating a supportive forestry governance to enable forest management, which includes the Strategic Harvesting Planning.</p>

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
			less than 2 years as stated in the plan?	
8. Forest Management System	The Ministry of forests indicated that it currently used the DLT provided in the TLTB Forest regulation and the silviculture prescription in the FFHCOP as medium of silviculture regulations. A diameter limit table were developed and presented to forest stakeholders in which most of them do not wish to adopt it as they disagree with some of the diameter limits stated within it.	Not implemented The proposed developed extended DLT were rejected by Forestry stakeholders when presented as they disagree with some of the increase in the diameter limits stated within it. Currently the i-TLTB DLT is the current legislated regulation regulating DLT and allowable cuts.	<p>The Ministry of Forestry clarified in its response to this recommendation that it is fully implementing the Diameter Limit Table ('DLT') legislated under the Native Land Trust Act (Native Land Forest Regulation 1985) as it is currently the only legal DLT available for enforcement by the Ministry. To review the legislated DLT, consultations have to be done with all stakeholders.</p> <p>How has the Ministry progressed in terms of the consultations with stakeholders regarding the review of the Diameter Limit Table?</p>	<p>The Ministry, in collaboration with German Technical Cooperation (GIZ), is developing an implementation guideline aligned to the legislated Diameter Limit Table (DLT) under the Native Land Forest Regulation 1985. The implementation guideline had been field tested and will be ready for implementation this year.</p> <p>The Ministry is currently consulting the industry on this revised version. The consultation work program is attached.</p> <p><i>Evidence: Consultancy Work program</i></p>

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
9. Plantations	FPL has its own Forest Management Plan regularizing its plantation areas including the protection of the remnant of natural forests. Discussions are underway with FPL on management of remnant of natural forests.	Partially Implemented. FPL has its own Forest Management Plan regulating its plantation compartment. Review of FPL current management plan noted no programs had been established for the protection of remnant of natural forests in its plantation.	<p>The Ministry of Forestry further clarified in its response to this recommendation that it has included the development of Forest Management plans in its August 2019-July 2020 operational plan. Furthermore, Fiji Pine Limited and Fiji Hardwood Corporation Limited have their own 10 year annual plantation forest management plans.</p> <p>Can the Ministry provide an update on the status of the Forest Management Plan to cover the whole of Fiji's forest and plantation areas?</p> <p>Can the Ministry advise whether the Forest Management Plan include the Management and Protection of the</p>	<p>The Ministry has collated the data as a first step and will now proceed towards developing the management plans for both Taveuni and Colo-i-Suva.</p> <p>Fiji Pine Limited (FPL) and Fiji Hardwood Corporation Limited (FHCL) have their own plantation management plans.</p> <p>The Management Plans highlighted in the Operational Plan for 2019-2020 are for Conservation/Protected Areas. The Ministry has started to develop the management plans for Taveuni and Colo-i-Suva in collation with relevant CSOs. The development of such a Plan will address the Permanent Forest Estate (PFE) Initiatives that the Ministry is currently working on. <i>(Evidence: OP 2019-2020)</i></p> <p>The Mahogany Industry Development Act 2010 (Section 1 of Schedule 2) states that: <i>"unless authorised by the Council, no person shall on any mahogany plantation land fell or extract timber other than mahogany timber"</i>.</p>

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
			remnant of the Natural Forest in plantation areas?	

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
10. Establishment of a Code Steering Committee	There is no schedule timetable provided for the committee meeting. The committee last met in 2016 afterwards there is no meeting, the committee was dormant till the date of the audit.	Not Implemented The Committee has been dormant for long period of time. They last met in 2016 and no further meetings conducted thereafter till the follow up period.	Is there any reason why the Committee is not able to meet regularly given the requirements under the TOR?	With the appointment of the new Monitoring Officer (secretariat of the Committee), the Ministry will, this year, convene the Committee meetings with relevant stakeholders to help enforce the Fiji Forest Harvesting Code of Practice (FFHCOP).
11. Development, endorsement and review of the Forest Certification Standards	The Forest certification standard was drafted and presented to Forests stakeholders but rejected the FCS, as compliances with it is an expensive and extensive exercise with huge financial implications.	Partially Implemented. The developed Forest certification standard was rejected by forestry stakeholders when presented. Reason being it is an expensive and extensive exercise with huge financial implications, provided that many operators are just small woodlots.	Can the Ministry explain on the progress of the Fiji Forest Certification Standard (FFCS) and when can this be finalised for cabinet endorsement? Please advise the Committee why is the delay in the formulation of the FFCS?	Fiji Pine Limited was certified in 2016 through the Forest Stewardship Council (FSC). The Ministry is now assisting Fiji Hardwood Corporation Limited with their certification process. The focus is on certification of plantation forests as they are managed forests. The Ministry has a draft national certification standard for natural forests and will continue to improve on this through alignment to the international standards (FSC & Programme for the Endorsement of Forest Certification (PEFC)). <i>Evidence: Fiji national forest certification</i>
12. Charging of Fees for processing and monitoring of	Harvesting Regulation incorporated with the reviewed fee structure was submitted to	Partially Implemented. Harvesting Regulation incorporating the reviewed fee structure was	Can the Ministry provide any update on the progress of the fee structure provided to	The Ministry is reviewing the fees structure that was initially submitted to Ministry of Economy and will make fresh submissions this year.

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
license	Ministry of Economy for vetting. MOF is still awaiting review to be finalised.	submitted to Ministry of Economy for vetting. MoF is still awaiting results of the review to be finalised.	the Ministry of Economy?	The revised fee structure is attached. <i>Evidence: Fee Structure</i>
13. Log Scaling	The log scaling rule is incorporated in the harvesting regulation which is yet to be reviewed and vetted by Ministry of Economy.	Partially Implemented The Ministry stated it has a log scaling rule but this was not presented to audit when requested, audit has not sighted and verified its context. Ministry further mentioned in its response that it will be reviewing its draft Harvesting Regulations in November 2019.	Can the Ministry provide a copy of the finalized log scaling rule and also update on why there was a delay?	A copy of the current log scaling rule is attached and is being used during harvesting operations. The log scaling rule will be incorporated into the Harvesting Regulations, which is currently under development. <i>Evidence: Log scaling Rule</i>
14. Environmental Standards in Forest Management and Environment Impact Assessment	The EIA for the Ministry is underlined in the FFHCOP, it is reference point for EIA compliances assessment by the ministry. Communications are done through Ministry awareness programs.	Partially Implemented. The Environment Impact Assessment (EIA) for the Ministry is underlined in the FFHCOP, it is a reference point for EIA compliances assessment by the Ministry.	An examination of the Fiji Forest Harvesting Code of Practice (FFHCOP) noted that it integrates the concept of the EIA. To apply for a logging licence, applicants are required to obtain EIA assessment done for the logging areas from the Ministry of Environment. Can the Ministry provide evidences of the awareness done since the year 2013 on the Fiji	Since 2013, 277 individuals have been trained on the FFHCOP. The targeted audiences are the logging contractors, resource owners, forest warden and staff of the Ministry in all 3 Divisions. <i>Evidence: Monitoring & Training Reports:</i>

SUBJECT	INITIAL RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS (2019)	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
			Forest Harvesting Code of Practise (FFHCOP)? Who are the targeted audience?	<ol style="list-style-type: none"> 1. Forest Warden Code Awareness Training Course – 27 trained 2. FTC 2016 August to July 2017 Annual Report – 26 trained 3. FTC 2015 Annual Report - 224 trained <p><i>Evidence: Training Reports</i></p>
15. Non-Wood Forest Products	<p>Ministry to work towards development of a management plan for non-wood products in Fiji.</p> <p>No Timeline provided for the preparation of Non-wood management plan. NMP will be carried out once funding availability is approved, it's a costly and timely exercises.</p>	<p>Not Implemented.</p> <p>The Ministry is still yet to develop a Non-Wood Management Plan, for non-wood species in the country</p>	<p>The audit noted that a management plan for non-wood product in the country is still yet to be developed.</p> <p>The Ministry has clarified in its response to this recommendation that non-wood products were focused on bamboo and sandalwood and these are embedded in the Ministry's Strategic Development Plan and Operational Plan for 2019 to 2020.</p> <p>Apart from incorporating the use of non-wood products in the Strategic</p>	<p>Under the Ministry's research on wood and non-wood, it has completed 2 non-wood forest commodities which are bamboo and coconut</p> <p>The Ministry is currently developing a report on potential non-wood forest products through:</p> <ol style="list-style-type: none"> a) Classification (e.g. food, medicine, fibres, biomass, resins & oils. b) Conservation c) Management d) Processing & Marketing e) Community involvement & Livelihood <p>The more focussed work of the Ministry are planting of Calophyllum ("Dilo"), Candlenut ("Sikeci") and Sandalwood.</p> <p>Conservation areas are set aside for naturally grown sandalwood as well as other species for conservation and natural regeneration. The Ministry is about to complete its Sandalwood inventory to gauge the varieties and distribution nationwide.</p>

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			Development Plan, what are the other measures that the Ministry utilises in facilitating the sustainable use of non-timber forest products?	The Ministry recently received endorsement from Cabinet on the development of Bamboo in Fiji and for the setup of a National Bamboo Training Centre which will enhance the potential uses of bamboos, thus reducing pressures on our natural forests.
INSTITUTIONAL FRAMEWORK AND HUMAN RESOURCES				
16. Forestry Board	Review is yet to be done in the forests regulations to address the durations of the meetings.	Not Implemented. The Forestry Board meeting has been dormant for long and there is no plan for the schedules of meeting of the board.	Could the Ministry provide update if Board Meetings were held and if meeting minutes were recorded and progress noted for the action plans if any?	The Forestry Board term expired in 2018, prior to that, minutes of Forestry Board Meetings and Board Papers are available for perusal.
			Who are the members of the Forestry Board?	Members of the Forestry Board as per the 1992 Forestry Act include: <ol style="list-style-type: none"> 1. the Conservator of Forests who shall be chairman; 2. the Permanent Secretary of Primary Industries or his representative; 3. the Director of Town and Country Planning or his representative; 4. seven other persons appointed by the Minister of whom: <ol style="list-style-type: none"> a. one shall represent the Native Land Trust Board; b. one shall be a member of the Land

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				<p>Conservation Board;</p> <p>c. being persons not holding any State Office of emolument, shall represent land owners, forest owners, forest users, forest industry and the public interest.</p>
17. National Forest Program	The Strategic Development Plan is ready incorporating all outstanding actions of the Ministry of Forests.	Implemented. The National Forest Program of the Fiji Forest Policy Statement 2007 had been incorporated in strategic development plan 2017 -2030 with time frames of implementations.	Can the Ministry provide the latest National Forest Program and how has the Ministry monitored the implementation the recommendations made in the 2014 report?	<p>The National Forest Program 2010 - 2012 has been weaved into the Ministry's Strategic Development Plan 2017-2030. The SDP also takes into account the National Development Plan priorities which is translated into the Annual Operational Plan and monitored internally by the Ministry.</p> <p><i>Evidence: OP,SDP & NFP</i></p>
18. Forestry Legislations	The Forestry Bill was presented to Natural resources committee on 3rd May 2016.	Partially Implemented. The Forestry Bill was presented to Natural Resources Committee (NRC) on 3rd May 2016 and is pending to be tabled in parliament.	<p>Has the Ministry followed up with the SGs office on the status of the vetting of the Forest Bill (Bill No. 13 of 2016)?</p> <p>When does the Ministry intend to finalise the enactment of the revised Forest Act and why is the delay?</p>	The Forestry Bill has had 2 readings in Parliament, however due to the Parliament reconvening in November 2018, the Ministry was advised by the Solicitor General's Office that the Bill be submitted as a new submission to this Parliament. The Ministry has taken this opportunity to align its Bill to some provisions in the Climate Change Bill, with the intention to table the Forestry Bill this year.
19. Forest Administration	Awareness were conducted through	Partially Implemented.	How does the Ministry capture data or	Information is captured in Consultation/Feedback Reports and issues raised or requests made are

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	commissioners offices integrated approaches as well as Through several inter ministry committees.	Forest Legislation Awareness is conducted through collaborative awareness programs of the Ministry as well as Commissioner's Office awareness tours with other government ministries.	information regarding the road shows and actions taken to address concerns raised from these road shows?	implemented at respective Divisions. The Ministry is taking a renewed approach in ensuring that issues and concerns raised are addressed. <i>Evidence: Minister's latest consultation report.</i>
20. Seeking International Assistance	A review has been conducted by World Bank and the report is with the Attorney General's office and World Bank office.	Partially Implemented. A review has been conducted by World Bank and the report is with the Attorney General's office and World Bank office and is yet to be received by the MoF.	The current engagement with the World Bank includes Reducing Emission from Deforestation and Forest Degradation (REDD+) and is focused on reforestation and De-desertification of Talasiga areas and preservation of established natural forest reserves. What is the update on the review done by the World Bank in 2016? How has the Ministry incorporated the recommendations of the report to improve the operations of the Ministry?	The Ministry has presented the Emission Reduction Program Document (ERPD) to the World Bank in June 2019, which been accepted and expected to begin after the Emission Reduction Program Agreement (ERPA) signing in April 2020. A copy of the ERPD can be accessed through the FCPF website (www.forestcarbonpartnership.org) The ER-Program has identified 20 districts in which carbon enhancement activities will be implemented, which includes reforestation, afforestation, biodiversity conservation and climate smart agriculture. In 2016, the Minister for Economy signed the Letter of Intent (LOI) and recommendations have been incorporated in the ERPD which will be implemented after the signing of the ERPA. In partnership with CSOs such as NFMV, CI, WCS and IUCN, the Min of Forestry is preparing funding applications to international agencies.

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21. Associations	Ministry to ensure that it works towards assisting in the establishment of the Forest Industries Association, Resource Owners Association and Forest Professional's Association.	Not Implemented. The Forest Industries Association was said to be established however neither formal evidence of meeting minutes nor TOR of the committee members were presented to audit. The Resource Owners and Forest Professional Association are yet to be formed. No time line given to form these two associations.	<p>Why is the Ministry not considering the establishment of Resource Owners Association and the Forest Professional Association?</p> <p>What are the challenges of forming a Foresters' Association and a Farmers' Association?</p>	<p>The Fiji Sawmillers Association has been in existence since the 1980s and looks after the interests and concerns of the industry and the Ministry over the years has been consulting with the Association. Minutes of the meeting is attached.</p> <p>The Ministry recognizes the Yaubula Management Support Team (YMST) established under the 14 provincial offices and which are community-based organisations that help to manage, protect and ensure the sustainable management of their respective natural resources.</p> <p>The Ministry of Forestry, in collaboration with SPC, had attempted to develop a Foresters' Association; however this did not eventuate due to lack of financial support.</p> <p>The Ministry will consider the development of a Farmers' Association in future when the Reforestation/Afforestation Framework is in place.</p>
22. Extension	Initiate the formation of the domestic integrated extension teams. Ministry revealed that it has Decentralization of the Extension Division to ensure that Forestry services are easily accessible to all and that Ministry is involved	Partially Implemented. The Extension Division has been decentralised to ensure that Forestry services are easily accessible to all and that Ministry is involved through Agroforestry Integrated Models.	Has the Ministry formed integrated extension teams with other stakeholders such as of the i-Taukei Lands Trust Board, Ministry of Agriculture and the Ministry of Rural Development as required under the	<p>The Ministry of Forestry has formed:</p> <ul style="list-style-type: none"> a) the REDD+ Steering Committee - Emission Reduction Program (2020-2025); b) the ITTO Steering Committee – Coastal Rehabilitation Program <p>Moreover, the Ministry is part of the Integrated Rural Development Program under the Ministry of Rural and Maritime Development. It works with other government agencies under the leadership of the</p>

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	through Agroforestry integrated Models.		Forest Policy statement? How has these set up working in terms of the demarcation of roles, responsibilities, etc?	Divisional Commissioners to develop and implement Divisional level Plans.
23. Subsidised Production of Nursery Seedlings	Ministry to ensure that it starts working towards phasing out its subsidized production for all nursery seedlings and charge the full commercial price	Partially Implemented The Ministry of Forestry has been supplying seedlings to communities upon request. Communities meeting the stated requirements in order be provided with nursery seedlings.	How has this new arrangement played out? What are some of the positives and negatives that come out from this initiative?	The Ministry has registered community owned and private nurseries throughout the 3 divisions to enable them to supply seedlings for plantings in their own land or in other areas marked for planting. It has enable community and private nursery owners to benefit financially from the sale of the seedlings. Training has also been conducted to nursery owners on how to raise seedlings. The Ministry has also assisted some new nursery owners in the procurement of their nursery materials.
24. Forestry Training and Education	Work towards conducting a review of the viability of its training centre. Review was conducted in 2016 by the Fiji Higher Education Commission and the training centre is accredited with development and implementation of new curriculums such as Diploma in Biodiversity	Partially Implemented The training centre has been registered and is being accredited as well. Application of accreditation was not provided for audit review, hence audit could not ascertain the validity of the accreditation done.	How far has the Ministry gone in terms of getting the required accreditation by the Fiji Higher Education Commission?	The Ministry of Forestry's Training Centre received its accreditation in December 2018 and is working towards the accreditation of its courses and the Trainers. <i>Evidence: Accreditation Certificate</i>

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	Conversation offered at FNU.			
25. Sustainable Development Goals (SDGs)			1. Describe briefly, the general level of awareness by the staff members of your Department, of Fiji's 5 years & 20 years National Development Plan, the 2030 Agenda, the Sustainable Development Goals (SDGs) and the SAMOA Pathway?	<p>The Ministry had developed its Strategic Development Plan 2017-2030 which encompasses Fiji's 5 years & 20 years National Development Plan, the 2030 Agenda - the Sustainable Development Goals (SDGs) and the SAMOA Pathway, including the United Nations Forum on Forests (UNFF) Strategic Goals (6 of them), which are also related to SDG's.</p> <p>The initiatives in the SDP are implemented annually in the Ministry's Operational Plan which each staff obtains a copy and made aware of their deliverables as per the Plan through their unit plans and individual work unit plans.</p>
			2. Describe the mechanism, if any, currently in place in your Department to enhance awareness of your staff members, of the alignment between the national development priorities, as per the Fiji's 5years & 20years National Development Plan, with the SDGs and its targets and indicators?	<p>Apart from each staff receiving a copy of each of the Ministry's Plans, copies are also available for online in the website (www.forestry.gov.fj) for ease of access from any location. Additionally soft copies were emailed to all staff.</p> <p>Divisions conduct their weekly meetings to keep the staff informed of the national priorities to be delivered and also to provide updated on their implementation status.</p>

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			<p>3. Describe how your Department monitor and report on the progress of the implementation of Fiji's 5years & 20years National Development Plan and of the SDGs under your responsibility?</p>	<p>As mentioned above, Divisions provide weekly updates on their achievement which are consolidated for weekly HOD meetings and reports are perused by senior management for their information and also issues requiring intervention.</p> <p>In addition to this, the Planning Unit does its quarterly/ bi-annual monitoring of the Plans and presents to the Divisions of the overall achievements.</p> <p>The Ministry also fills the NDP Monitoring template (bi-annual) sent by Ministry of Economy to gauge the implementation status of NDP initiatives under the Forestry Sector.</p>
			<p>4. Is your Department a part or member of an inter-agency or inter-ministerial/department co-ordination mechanism that plan, monitor and evaluate the progress of the implementation of the National Development Plan and the SDGs under your responsibility?</p> <p>If yes: How often does it meet?</p>	<p>Yes the Ministry is part of the interagency co-ordination mechanism through its submission towards the Voluntary National Reporting (VNR) of the SDGs to the Ministry of Economy (focal point).</p> <p>The last meeting was held in 2019 to validate the Fiji's</p>

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			<p>What aspects of its function can it be improved?</p> <p>If no: Do you see the need for such a mechanism?</p>	<p>VNR.</p> <p>Suggested improvements:</p> <ul style="list-style-type: none"> a) Improvement in the reporting template; b) Training & Awareness; and c) More regular meetings.
			<p>5. Do you think your Department is sufficiently equipped to ensure an integrated and coordinated decision making process for SDGs implementation and for strategic planning?</p>	<p>The Ministry of Forestry is redefining its core roles and re-organising the structure to address its core functions.</p> <p>The Ministry is continuously improving its forest management and decision-making capacity. Tertiary education of its staff requires significant time, as well as to put the expertise into practice. This is part of the intention of the MOUs in development with FNU and USP.</p>
			<p>6. From your perspective, what are or ought to be the roles/functions of the lead government agency for coordinating the SDG implementation, and (b) how have these roles/functions been institutionalized?</p>	<p>The Ministry of Economy should be the lead government agency for coordinating SDG implementation, into which all its Ministries play a part to sustainably develop their respective sectors, in collaboration with all the relevant stakeholders in Government and civil societies.</p>

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			7. From your best recollection, what steps has the Fiji Government taken so far to update or review its institutional setup (beyond the SDGs lead agency) in order to support the SDGs implementation?	The Ministry of Forestry updates and reviews its institutional setup (beyond the SDGs lead agency) through its membership in the United Nations Forum on Forests (UNFF) and the UN Strategic Plan for Forests (2017 – 2030), whilst addressing its commitments under the forestry related conventions such as the United Nations Convention on Biodiversity (UNCBD), United Nations Convention to Combat Desertification (UNCCD), United Nations Framework Conventions on Climate Change (UNFCCC) and International Labour Organisation (ILO).
			8. Briefly describe steps, if any, taken by your Ministry or Department to engage sub-national level including authorities, including provincial, district and community level authorities, in the design and implementation of policies and measures related to SDGs realization (for example by encouraging the localization of the SDGs or the design of local strategies)? If so, what	The Min of Forestry through its core role of sustainable management of the nation's forest resources encourages the integrated partnership and participation of all citizens at the provincial, district and community level through: - (a) 30 Million Tree in 15 years program – over 1 million trees planted in 2018/19; target for 2019/2020 is 2 million trees; (b) Emission Reduction program – 20 districts identified that will impact the most marginalized communities through carbon trade and alternative livelihood ventures; (c) Coastal Rehabilitation through the ITTO project – rehabilitation of coastal plains of the Rewa and Tailevu deltas, improve community livelihoods through an alternative income stream (shrimp farms, piggery and tree nurseries); (d) Maritime Pine Development Program – supply of

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			initiatives have been taken in this respect and what have been the results and or challenges so far?	<p>harvesting and processing machines and equipment for the Gau, Cicia, Kadavu and Lakeba;</p> <p>(e) Sandalwood Development Program – establish 120 hectares spread throughout the 14 provinces including Rotuma</p> <p>Adequate level of funding has been the main challenge. The Ministry is pursuing alternative (external) funding sources, e.g. Green Climate Fund (GCF).</p>
			9. What institutional arrangements or mechanisms are in place in your Department to engage civil society organizations, scientific community and private sector in the monitoring, review and follow-up of the SDGs?	<p>The Ministry of Forestry engages: -</p> <p>(a) Civil Society Organizations - awareness raising campaigns, community consultations and education;</p> <p>(b) Scientific community – research, assessments and survey;</p> <p>(c) Private sector – tree planting (reforestation), nursery and seedling supply</p> <p>These partnership encourages these sectors to contribute towards the implementation, review and monitoring of the SDGs.</p>
			10. Do you think there is an interest within your Department to learn more about other countries experiences, training, tools, partnership	<p>The Ministry is currently working on its global scan, looking at countries that have the best sustainable forest management practices and try to forge partnerships with the selected countries.</p> <p>Current MOUs that the Ministry has with other countries are China and Indonesia.</p> <p>Costa Rica is one of the countries that the Ministry of</p>

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			arrangements, peer-to-peer learning, curricular and be a part of a global public service award system on SDGs implementation?	Forestry is developing a relationship with for the formulation of an MOU to create sustainable financing mechanisms such as the payments for forest ecosystem services. <i>Evidence: Cabinet Paper & Costa Rica Report.</i>

Supplementary Questions from OAG

Please find attached our response on the 3 questions emailed at noon today.

When was the last Land Use Plan developed?

- There has never been a landuse plan for Fiji. There exists a Rural Land Use Policy of 2006 for all sectors. The TLTB have developed a Master Plan for urban areas and towns but not forests or rural areas.

What is the definition of park for heritage park such as Bouma from other national parks.

- The primary difference lies in the reason for preserving the land: National parks are protected due to their scenic, inspirational, education, and recreational value. National monuments have objects of historical, cultural, and/or scientific interest, so their content is quite varied. National Parks are areas with scenic, inspirational, educational and recreational value having diverse numbers of native plants and animals. Heritage Parks are areas protected due to their historical, cultural or scientific interest, areas of outstanding universal value or landmark area

Has all land owners prepares their management plans.

- Rightfully, all conservation or protected areas should have management plans on how they will be managed. Most of these areas are protected by landowners in partnership with NGO's such as WCS (Kilaka), National Trust (Sovi Basin), etc Hence they have management plans for this.

Please find a list of management plans below

1. Wildlife Conservation Society (2019) Bua District Ecosystem-Based Management Plan: 2019–2023. Wildlife Conservation Society, Suva, Fiji
2. Wildlife Conservation Society (2019) Dama District Ecosystem-Based Management Plan: 2019–2023. Wildlife Conservation Society, Suva, Fiji
3. Wildlife Conservation Society (2019) Koro Island Ecosystem-Based Management Plan: 2019–2023. Wildlife Conservation Society, Suva, Fiji
4. Wildlife Conservation Society (2018) Bua Province Integrated Coastal Management Plan: 2018–2022. Wildlife Conservation Society, Suva, Fiji
5. Wildlife Conservation Society (2018) Vatu-i-Ra Conservation Park Management Plan. Wildlife Conservation Society, Suva, Fiji. 32 pp.
6. Wildlife Conservation Society (2016) Kilaka Forest Conservation Area Management Plan. Wildlife Conservation Society, Suva, Fiji. 34 pp.[\[download\]](#) [\[download Fijian Version\]](#)
7. Wildlife Conservation Society (2016) Ecosystem-Based Management Plan: Nadi District, Bua Province, Fiji. Wildlife Conservation Society, Suva, Fiji. 83 pp.
8. Wildlife Conservation Society (2016) Ecosystem-Based Management Plan: Lekutu and Navakasiga Districts, Bua Province, Fiji. Wildlife Conservation Society, Suva, Fiji. 87 pp.
9. Wildlife Conservation Society (2016) Ecosystem-Based Management Plan: Vanua Raviravi, Vuya District, Bua Province, Fiji. Wildlife Conservation Society, Suva, Fiji. 74pp.
10. WCS (2013) Management Plan: Wailevu District, Vanua Levu, Fiji. Wildlife Conservation Society, Suva, Fiji.
11. WCS (2012) Ecosystem-Based Management Plan: Wainunu District, Vanua Levu, Fiji. Wildlife Conservation Society, Suva, Fiji.
12. WCS (2012) Ecosystem-Based Management Plan: Kubulau District, Vanua Levu, Fiji. Wildlife Conservation Society, Suva, Fiji.
13. WCS (2009) Ecosystem-Based Management Plan: Kubulau District, Vanua Levu, Fiji, Wildlife Conservation Society, Suva, Fiji.

FIJI
MINISTRY OF FORESTRY



PUBLIC ACCOUNTS COMMITTEE
CONSULTATION DOCUMENTS
19TH MARCH, 2020

OVERVIEW

1. REDD PLUS Presentation – (Question 1)
2. Term of Reference – (Question 3)
3. Standard Operating Procedures & Contracts for NFI – (Question 4)
4. Consultancy Work Program – (Question 8)
5. Fijis National Forest Certification Standards – (Question 11)
6. Current Fees Structure – (Question 12)
7. Log Scaling Rules – (Question 13)
8. FFHCOP Training Reports – (Question 14)
9. National Forest Program, Operational Plan & SDP – (Question 17)
10. Awareness & Consultation Report - (Question 19)
11. Steering Committee Meeting – (Question 22)
12. FTC Training Facility Accreditation – (Question 24)
13. Cabinet Paper on Costa Rico – (Question 25/Part 10)

Terms of Reference

for

**Designing a National Forest Inventory and Permanent Sample Plots and
support for the field component of the NFI**

Ministry of Forestry

REDD+ Unit

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1. Background

Fiji is implementing a series of activities as stipulated in the Readiness Preparation Proposal (R-PP) in support of REDD+ (Reducing Emissions from Deforestation and Forest Degradation and forest conservation, sustainable management of forests and carbon stock enhancement) readiness that enables REDD+ implementation and generate carbon and non-carbon benefits besides promoting sustainable forest management and improved forest governance. The REDD+ readiness helps Fiji to operationalize the National Forest Monitoring System and to report progress on mitigation actions in forest resources management under the United Nations Framework Convention on Climate Change (UNFCCC) and the sustainable development goal related to climate change (SDG 13).

The Forest Carbon Partnership Facility (FCPF) is supporting Fiji to enable the country to participate in REDD+ processes and to harness benefits of the result-based payments (RBP) for REDD+. As part of the readiness, Fiji has developed Forest Reference Level (FRL) for the ER program covering the three islands of Viti Levu, Vanua Levu and Tavauni; and initiated the design of National Forest Monitoring System.

To improve the biomass estimation of Fiji forests, there is a need to conduct a National Forest Inventory. In Fiji, three National Forest Inventories were conducted in the past. Assessing timber in the forest for logging was the main focus of the inventories. With the advent of the REDD+ mechanism, a new NFI is essential to support the implementation and monitoring of REDD+ and supply the information on the management of Fiji forest resources to meet national development priorities and to meet the reporting requirements of international conventions and processes related to forests and environment.

The permanent sample plots (PSP) network of Fiji established in 2010 to monitor timber growth in Fiji. The plots are measured at two year intervals. The last measurements of the PSPs were conducted in 2016. Field crews are continuously measuring these PSPs. The systematic sample grid of the PSP program covers only forest of the three largest islands Viti Levu, Vanua Levu and Taveuni. The management and measurements of PSPs were found to have significant gaps limiting their contribution in the unbiased estimation of biomass and growth of forest resources of Fiji. As part of the design of NFI, it is necessary to review the PSP design and the possible

integration of PSP framework into the NFI so as to facilitate PSP to form integral part of the NFI going forward.

The University of Hamburg (UoH) consultant report suggested to conduct a review of the design of 2006 NFI and the PSP network in preparation for the new design of a multifunctional NFI for Fiji. Taking into account the recommendations of the UoH consultant report, the consultant should provide a design for a multifunctional NFI.

2. Previous National Forest Inventories and the Status of Permanent Sample Plots

2.1 National Forest Inventory

Three NFIs were conducted in Fiji, and the latest one was carried out in 2006. All three NFIs were focused on the availability of commercial timber in Fiji's natural forests. They were not based on permanent sample plots so the data have limited use in a carbon context. Nonetheless a Standard Operation Procedures (SOP) for 2006 NFI is available which details the tree attributes measured in the 2006 NFI. The tree attributes measured are tree diameter > 5 cm, merchantable tree height, and slope of the plot, GPS locations, tree bole quality, and species name. Likewise information on litter and deadwood biomass pools were not collected in the NFI 2006. Management Service Division has established a database of the measurement of NFI 2006. The consultant will review the methodology of past NFIs and Standard Operating Procedure (SOP)¹ and take suitable elements into consideration for the design of the new NFI.

2.2 Permanent Sample Plots

Permanent sample plots (PSP) are essential for assessing forest growth and forest dynamics. Fiji has established 84 PSP in the forest area. It is not known if the PSP network is adequate to obtain a robust estimate of carbon stock change and forest growth dynamics. The PSPs are periodically measured (2010, 2012, 2014, 2016, with the latest round commenced in 2018) assessed to record changes in the specified stand and tree attributes. Diameter at Breast Height

(DBH), merchantable height, top height species, regeneration are measured in first three years of data collection; litter and deadwood is also recorded in the last two years of data collection.

3. Objectives

The general objectives of this assignment are to:

analyse the data collected from the 2006 NFI and to produce an NFI summary report suitable for submission to the Secretary General on behalf of the Ministry of Forestry.

augment the design of Fiji's PSP net work to create an operational NFI with improved the accuracy and precision of collected forest data to assist in meeting Fiji's international reporting commitments.

The objective of this assignment are to: develop sampling design of a NFI with based on permanent sample plots (sampling intensity, plot design) and idelally incorporating the sampling framework of PSP, prepare a Response Design (plot configuration, plot size, plot shape, and number of plots), and develop a measurement protocol. The consultant should train the Ministry of Forestry field crews to collect the data as described in the measurement protocol. The consultant should also include the design and documentation of a QA/QC process and train Minsitry of Forestry field crews in this specific task.

The main tasks include:

- a) Review of data collected from past forest inventories including an assessment of the confidence intervals of the data and use this to inform the new PSP design.
- b) Development of a Ministry of Forestry report detailing the analysis of NFI 2006 data.
- c) Preparation of the design of a National Forest Inventory based on permanent sampling plots including the description of stratification, sampling approach, sample frame and sampling unit in consultation with the Forest Resource Assessment and Conservation Division of the Ministry of Forestry and other stakeholders for validation in a national consultation workshop.
- d) Recommendation and documentation in a field manual on the parameters to be measured including tree parameters and carbon pools to be considered for measurement.

- e) Conduct training of the inventory crews, prior to start of the inventory field work, on the tasks related to forest measurements following the standard operating procedures of forest inventory and quality assurance and quality control procedures to be followed in the national forest inventory. The training should be conducted in collaboration with the Inventory Section of the Forest Resource Assessment and Conservation Division.
- f) Support inventory teams in the conduct of field work and in layout of sample plots and technically back-stop in conducting and checking measurements. Liasion with local communities and daily supervision of the field works will be done by the Inventory Officer of the Ministry of Forestry.
- g) Analysis of forest inventory data to estimate the forest resources and generation of emission and removal factor data shall be undertaken in close collaboration with the staff of Inventory Section of the Forest Department so that the capacity of the Inventory Section can be strengthened to facilitate data collection and analysis in the future.
- h) Preparation of appropriate documentation to support field crew instruction.
- i) Estimation of the uncertainty associated with the emission and removal factor data with ± 10 percent precision and 90 percent confidence interval.

4. Work Program and Outputs

This section describes the tasks to be undertaken under each section of the assignment.

SN	Task	Output / deliverable	Timeline
1	Situation Analysis and final work plan development	Report: A situation analysis of existing relevant forest data, gaps and alternative options for the way forward. The report also includes a final work plan for the consultancy. The report should be validated and agreed by the National REDD+ Steering Committee.	2 weeks
2	Design National Forest Inventory and Permanent Sample Plots	Report: The inventory design report should contain entire details of NFI sampling design, response design and estimation design (the estimators). The estimator needs to be compatible with both sampling and response design. The report should include SOPs including QA/QC procedures for sampling and response design. The report should include a work plan for conducting the field work.	4 weeks
3	Train field crew in field data collection SOP	The field crew staff are trained in the field in the data collection methods, prior to the teams leaving to complete the field data collection.	4 weeks
4	Train and support field crew in QA/QC of measured plots	A dedicated field team is trained in QA/QC methods to assess the precision and accuracy of the field measurements	4 weeks
5	Develop Ministry of Forestry report on 2006 NFI data collected	Assess and summaries the data collected during the last NFI round and develop a report on behalf of the Ministry of Forestry.	8 weeks

5. Details of the deliverables

5.1 Situation Analysis (D1)

The consultant should review previous assessments of PSP and NFI programs and draft a situational analysis report that contains a detail work plan for designing and execution of an NFI based on permanent sample plots.

5.2 Report on the design of National Forest Inventory and PSP, Standard Operating Procedures for NFI and PSP (D2)

The report should include all three basic design elements of sampling: sampling design, response design, and estimation design. All REDD+ relevant stakeholders should be consulted and informed about the PSP design or redesign. The report should clearly specify the reasons for the selected design. Data on periodical measurements of the PSP of years 2010, 2012, 2014, 2016, and 2018 are available. Hence consultant is advised to analyze the data while designing or redesigning the PSP. Consultations with relevant stakeholders is essential in the designing process. This report should be accompanied by appropriate operational manuals/standard operating procedures for an operational repeatable NFI design.

5.3 Execution of National Forest Inventory (D3)

Training of field crews in the plot data collection procedures, expectations of precision and accuracy, and QA/QC procedures. The field crews should be supported throughout the field data collection campaign with regular communication and integration of data collected on a continuous basis to assess the target levels of precision and accuracy.

5.4 Report on NFI 2006 (D4)

The inventory Report relating to the NFI 2006 should cover the details of the stratification, sampling approach, sample frame and sampling unit, measurements taken, and forest resulting forest characteristics.

6. Study Team

The study team will be comprised of international and national experts. The Team Leader is expected to have a thorough understanding of National Forest Inventories in tropical forest and more than ten years of experience in the related field specifically in REDD+ and Climate Change, Forestry and Natural Resource Management (NRM). The team leader will be responsible for coordinating the overall process and for ensuring that all specific tasks of the ToR are being addressed satisfactorily in the report, while other members will help the team leader in specific activities. Other team members are also expected to have a clear understanding and at least 5 years of experience in the related field.

Key Expert	Minimum Qualification	Additional skills that will be an advantage
Team Leader-Forestry Expert	<ul style="list-style-type: none"> At least Master's in Forestry or equivalent With a minimum 10 and preferably 15 years of relevant experience and a good understanding of climate change, forestry, and REDD+ issues. Previous engagement in similar assignment is an advantage. 	<ul style="list-style-type: none"> Involved in the National Forest Inventory. Forest Monitoring System Experience of working in the South Pacific region
Forest Biometrician	<ul style="list-style-type: none"> Master's degree in Forest Biometrics or related subject At least eight years of working experience in the field of forest inventory or a related field 	<ul style="list-style-type: none"> Experience of working in the South Pacific region
Statistician	<ul style="list-style-type: none"> Master Degree in statistics or related subject At least five years of experience working in the forestry sector 	<ul style="list-style-type: none"> Experience of designing forest inventory at a national level Permanent Sample Plots establishment and/or measurement Experience of working in the South Pacific region
GIS/ Remote Sensing Expert	<ul style="list-style-type: none"> At least Bachelor in Remote Sensing/ Geographical Information System Experience of working in the application of RS/GIS in the forestry sector 	<ul style="list-style-type: none"> Experience of working in designing a National Forest Inventory is an advantage Experience of working in the South Pacific region

The Ministry of Forestry will allocate sufficient human resources to conduct the field work.

7. Work plan

The team is expected to prepare a situation analysis accompanied by a detailed work plan that shall guide the process. This work plan will describe how the assignment will be carried out, including work schedule, a methodology to be used related to each specific task, information collection and analysis, and reporting. Based on the work plan, a detailed plan of study will be discussed and finalized jointly by the study team and the REDD+ Unit.

8. Qualification/experiences and competency of the consulting firm or consortium of consulting firms

The consulting firm or consortium of consulting firms to be involved in this assignment should demonstrate the ability to carry out this assignment with sufficient experience in leading multi-disciplinary team. The firm has to have the proven capability of studying and producing consistently high-quality reports and proven experience of capacity development required for the assignment. The consulting firm or consortium of consulting firms has to demonstrate proven expertise in the following areas:

Designing and execution of Forest Inventory and Permanent Sample Plots at National or Sub National level.

9. Selection Method

A consulting firm will be selected using the World Bank's Selection Based on the Consultants' Qualifications (CQS) method. For further details refer to the World Bank's Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, January 2011 (Revised July 2014) adopting "Quality and Costs based Selection System". The consulting firms will be evaluated and short-listed based on the approved evaluation criteria.

10. Duration of work

This study is anticipated to be completed by 14th June 2020 and is to begin by 20th October 2019.

10. Eligibility criteria

This study opportunity is opened to both national and international firms. Service providers must be duly registered for the last three years and be able to produce up to date tax clearance certificates.

11. Deliverables

The consultants will submit a Situational Analysis report within the 2 week contract commencement describing the consultants' plan of actions. This report should be accompanied by a work/schedule to ensure that the final submission will be made on time. The Situation Analysis report must be approved by the REDD+ Steering Committee to proceed with further work.

Draft copies of all reports should be submitted to the client within seven months of commencement of the contract agreement. Following the final review of the submitted draft

documents by the client and the ensuing communication, the consultant shall prepare and submit three final hard copies and an electronic copy of the required documents to the REDD+ Unit Ministry of Forestry.

12. Payment Schedule

Output	Payment (%)
Situational Analysis Report including work plan (D1)	10%
Report on the design of National Forest Inventory and PSP, Standard Operating Procedures for NFI and PSP (D2)	30%
Execution of National Forest Inventory (D3)	30%
Report on the National Forest Inventory (D4)	30%

All reports must be acceptable to the clients to be eligible for the payments. REDD+ Unit will bear the costs for the national validation workshops and national RSC meeting consultations.

13. Client's input to the Consultant

The REDD+ Unit and the Ministry of Forestry, Fiji will supervise and oversee the contract and help to implement the study by providing feedback and coordination with other government agencies and stakeholders where necessary. The ministry will bear the cost of instruments used for the NFI, allowance and logistic for crew members, however the consultants will provide training to the crew members. Also, the consultants provide QA/QC training to forestry officials that will be responsible for supervising and quality-checking.

The REDD+ Unit will facilitate with the consulting team to arrange consultation meetings with the relevant stakeholders and the REDD+ Steering Committee members for their comments and feedbacks at different stages of this study.

14. Contact

For further information on these terms of reference, please contact:

The Fiji REDD+ Unit
Ministry of Forestry
Tel: +679-3301611; 9990915
Email: redplus.fj@gmail.com



Fiji National Forest Inventory

2005-2007

STANDARD OPERATION PROCEDURES

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1.0 Introduction

This document details definition and procedures that was used for the planning and the implementation of Fiji's Nation Forest Inventory in 2005 to 2007.

The data collection for the NFI mainly focused on all forests across the 7 major forested islands to provide data on the current forest resources available for multiple uses, protection, or conservation.

Total of 4 field teams which consist of forest officers and charge hands were trained to perform data collection.

Data collection methodology and procedures that was used is detailed in this manual document.

2.0 Planning Phase

2.1 Inventory Objective

The planning and designing of a forest inventory will basically focus on the main objective of the data that will be collected.

With the serious threat of over cutting Fiji's forests for the last 15 years from the previous inventory, the main objective of this NFI is to inform the decision makers on the status of Fiji's forests in terms of merchantable volumes with species diversity.

2.2 Operation Map

The GIS and Remote sensing mapping is not detailed in this manual. However, the result of the mapping work will determine the areas to be covered during the inventory. Once the areas on the map being stratified by forest types, plots are then distributed to each stratified areas and the plots to be measured will be randomly picked from all sets of plots.

The operation map will then details the locations of each plot with topographic features to assist in locating plots.

2.3 Sampling Design

Sampling design for this NFI was based on stratified random sampling system.

With the use of remote sensing, forests cover map were stratified in two forest classes; open forest and closed forest. The difference between the two classes is defined by the canopy cover of the forest.

2.4 Plot Design

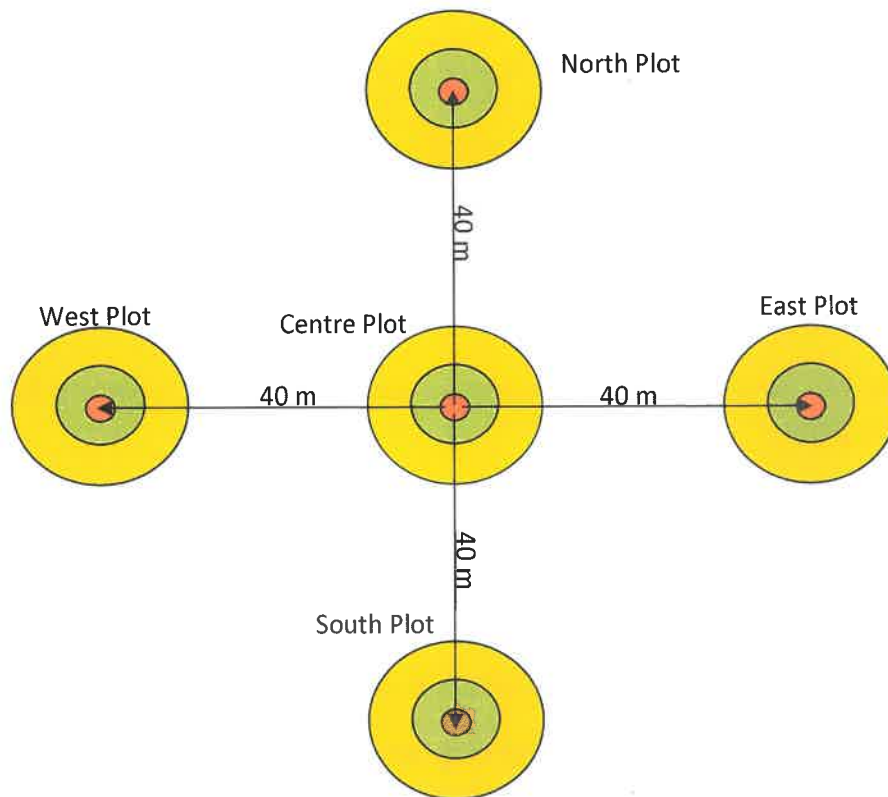
For fast and easy lay-out, a set of concentric circular sample plots of 400 m², 100 m² and 10 m² are proposed. On the respective plots, the following parameters shall be recorded:

sample will consist of a clusters of 5 sub-plots

10 m² circle (r = 1.78 m): tree regeneration > 1.3 m high and dbh < 5.0 cm

100 m² circle (r = 5.64 m): tree regeneration with dbh from 5.0 cm to < 20 cm, bamboo and indicator plants

400 m² circle (r = 11.28 m): trees with dbh 20 cm and above



3.0 Roles and Responsibility

3.1 Field Crew

Each field team will consist of 4 team members:

1. Team Leader
2. Tree Spotter

3. Labourer/Chargehand

4. Field Guide [Landowners Rep]

The responsibilities of each of the team members are outlined below.

3.2 Team Leader

The team leaders' main tasks are:

- To plan the teams tasks each day and communicate this to the team
- To consult with the Inventory Officer about the operational plan
- To ensure that field equipment is complete and in good working condition
- To consult with landowners and ask permission to work on their land and ask for assistance in locating the sampling unit
- To operate the GPS to find the sampling unit
- To undertake measurements with the compass, clinometer, and diameter tape and monitor field data collection from sampling units
- To ensure that all team members are healthy and in good physical condition
- To submit completed field recording sheets on a regular basis (to be included in the submission of the Operational Plan)
- To remain in constant communication with the Inventory Officer
- To report any accidents or damage to equipment or otherwise to the PMO or Inventory Officer
- To compile and submit completed Operational Plans with attached documents to the NFI project officer
- To accurately record and submit time sheets for each member of the team
- Take responsibility of finances and waka provided to the team for the operational period and provide documentation (receipts and diaries) at the end of the operational period
- Any other task requested by the project coordinators

3.3 Charge Hand

The Charge Hands main tasks are:

- To assist the Team Leader in the location of the sampling unit with either compass, tape or GPS
- Ensure field plots are established correctly on the ground as described within this manual
- Ensure that proper field measurements are implemented and accurate data is collected
- To record all measurements on the field recording sheet and ensure that the sheet is completed.
- To assist the Team Leader with the checking and maintenance of field equipment
- Any other task requested by the team leader or project coordinators

3.4 Tree Spotter

The Tree-spotters main tasks are:

- To aid the Team leader and the Charge Hand in the location of sampling units
- To assist with measurements of trees
- To identify the local name of the tree species being measured
- To collect and correctly tag tree samples of unknown species
- Any other task requested by the team leader or project coordinators

3.5 Field Guide

The Mataqali Members main tasks are:

- To assist the inventory team in locating the sampling unit
- To provide local knowledge of the area
- To assist the inventory team measure the sampling unit

4.0 Preparation for Field Work

4.1 Office preparation

Before departing for field sampling the following steps are essential:

1. Pick up operational plan for the week or period of sampling, which will contain the co-ordinates of the plots to be measured and maps.
2. Determine ownership of the land that the sampling plots are on. This can be done by transferring the plot locations to the Land Tenure Maps 1:50,000
3. Obtain a suitable number of copies of field recording sheets, mataqali receipt forms, Fijian and English awareness letters, timesheets, and imprest receipts for the measurement period
4. Ensure that the team has enough waka for the presentation of sevusevu for the measurement period
5. Establish contact with the responsible Divisional Forestry Officer and the Provincial Officer and submit the arrival date and expected time of departure of the field team. The Provincial Officers transmit the message to the landowners
6. The equipment of the team has to be checked routinely. Every team leader is responsible for inspecting the team's equipment before leaving the office. The basic equipment of one team is listed in Appendix 1.

4.2 Field preparation

Before the actual access to the sampling unit can start, it is essential to inform the mataqali and to ask for permission to work on their property. This usually the presentation of the 'I sevusevu' [Fijian Protocol]. Field work are then conducted once landowners gave permission for the team to work on their forest area.

In the case where the mataqali denies entry of the team to work on their land than the team should travel to the next nearest sampling unit and continue to work. The Inventory Officer in charge should be notified if such a case occurs.

5.0 Locating Sample Plot

Each team will be allocated with a Global Positioning System (GPS), which will be used in locating the exact location of the plot. However the GPS reception may become patchy when working under dense canopy cover. Where this occurs it is required for the team to find the sample point with compass and tape from the last reading of the GPS. The GPS will give the bearing and distance to the sample point. It is very important that the measuring tape is kept horizontal throughout this process to avoid excessive error.

6.0 Establishing a sample plot

The establishment of the sampling unit starts with the marking of the sampling unit centre (i.e. the centre of the Central subplot). These co-ordinates will be given to each field team before departing for the field and entered into the GPS. Once the exact point has been located in the field a wooden stake with flagging tape tied to it should be driven into the ground at this point. This point is the basis for measuring the distance to the other subplot centers. Importantly no sample plot boundaries need to be demarcated and no adjustment of the subplot size due to slope is required.

Where the centre of the subplot is positioned directly on a tree than it is required that the centre of that plot is shifted to the left by 1.0m.

6.1 Establishment of Subplots

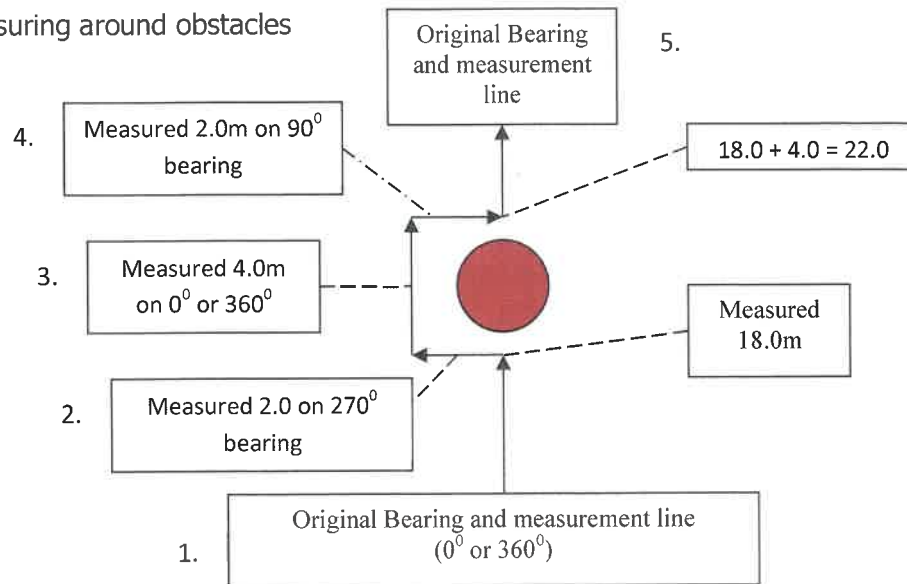
After locating the centre of the Central plot (sampling unit centre), the Central plot is to be measured. Once completed a horizontal distance of 40m is to be measured on the 0° or 360° bearing (i.e. North). It is important to maintain this distance horizontally, which will require measuring short distances and using back bearings. Measuring 40m on a 0° or 360° bearing will locate the centre of the North subplot. Measure and record each subplot before locating the next subplot centre point. Repeat this procedure for each subplot, remembering that the distance to each of the subplot centers is from the centre of the Central subplot or otherwise known as the centre of the sampling unit.

6.2 Obstacles and Offsetting

Measuring to the sampling unit centre or subplot centres may be problematic where large trees obstruct the site and measurement line. When this occurs the following procedure is to be followed (see also Figure 1):

1. Measure to a point before the tree where the measurement reading is a whole number (e.g 18.0m not 18.3m)
2. Take a bearing at right angles to the current bearing (e.g. current bearing is 0° or 360° than right angle bearing to the left will be 270° or 90° to the right) Measure a horizontal distance with the tape on this bearing to sufficiently move around the tree
3. From this point take the original bearing again and measure a distance past the tree (e.g. 4.0m)
4. From this point take a right angle bearing that will return you to the original bearing and measurement line (this should be the opposite bearing to the first bearing). Measure the same distance that was measured at with the first bearing
5. Return to measuring the distance to the plot centre taking into account the distance to move around the tree (i.e $18.0\text{m} + 4.0\text{m}$)

Figure 1. Measuring around obstacles



6.3 Deciding on Boarder Line Trees

Boarder line trees are trees that are located on the boarder of the measurement circle. Measuring boarder line trees that are not actually in the plot can cause large errors in estimates. The following should be adhered to when dealing with boarder line trees:

1. If more than half of the tree is outside the circles boundary than it is **not included** in measurements (see Figure 2)
2. If half the tree or more is inside the circle boundary than it is **included** in measurements (see Figure 2)
3. A tree that leans from the inside of the circle to the outside of the circle boundary must be checked for:
 - a. If at the 1.3m point the tree is inside the circle boundary than it is **included** in measurements (see Figure 3)

- b. If at the 1.3m point the tree is outside the circle boundary it is **not included** in measurements (see Figure 4)
- 4. A tree that leans from the outside of the circle boundary to the inside of the circle must be checked for:
 - a. If at the 1.3m point the tree is inside the circle boundary than it is **included** in measurements (see Figure 5)
 - b. If at the 1.3m point the tree is outside the circle boundary it is **not included** in measurements (see Figure 6)

Figure 2. Deciding on boarder line trees

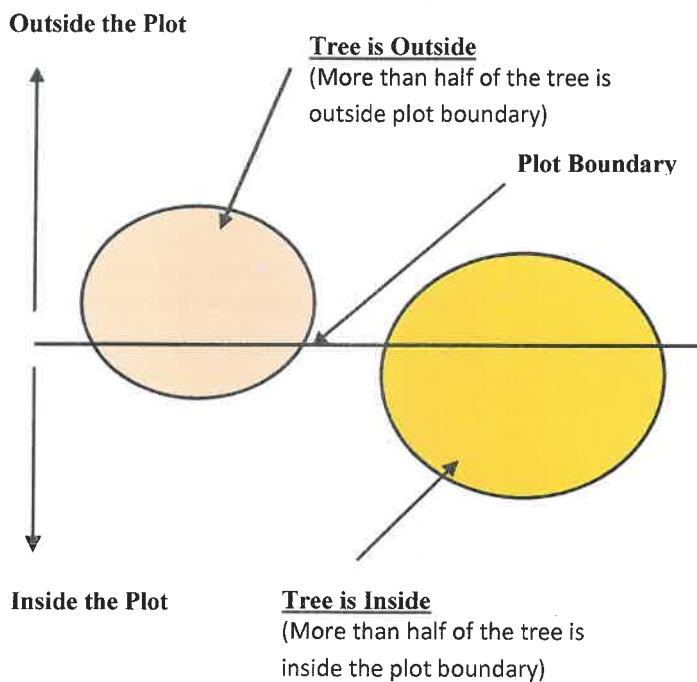


Figure 3. Tree leaning outside the circle Boundary but **included** in measurements

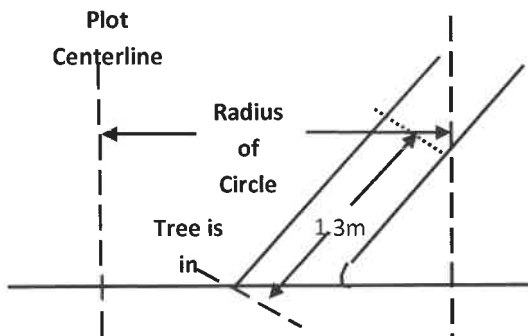


Figure 4. Tree leaning outside the circle boundary and **not included** in measurements

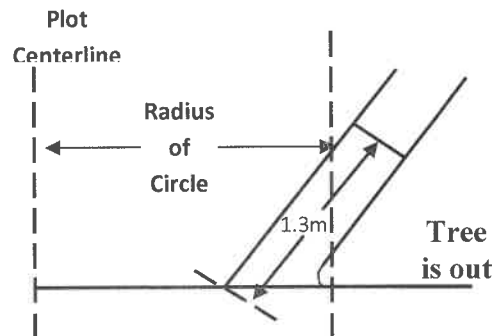


Figure 5. Tree leaning into the circle and **included** in measurements

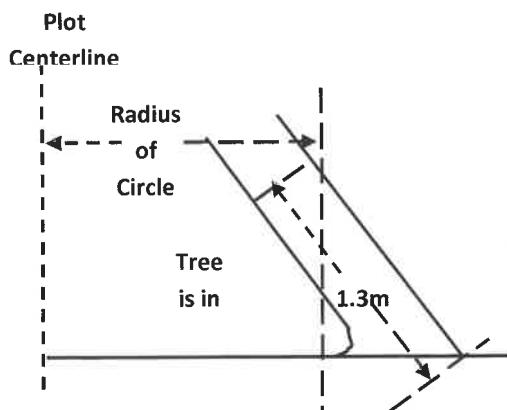
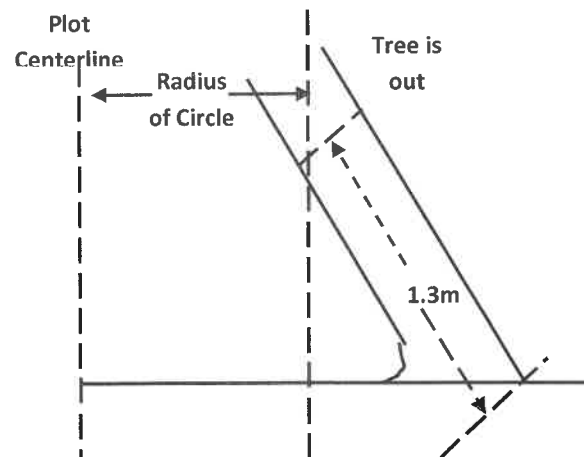


Figure 6. Tree leaning into the circle but **not included** in measurements



7.0 Selection of Sample trees

The selection of sample trees is set by the following criteria:

10m² circle (radius = 1.78 m): Tree regeneration > 1.3 m high and DBH < 5.0 cm

100m² circle (radius = 5.64 m): Tree regeneration with DBH from 5.0 cm to < 20 cm, bamboo and indicator plants

400m² circle (radius = 11.28 m): Trees with DBH 20 cm and above

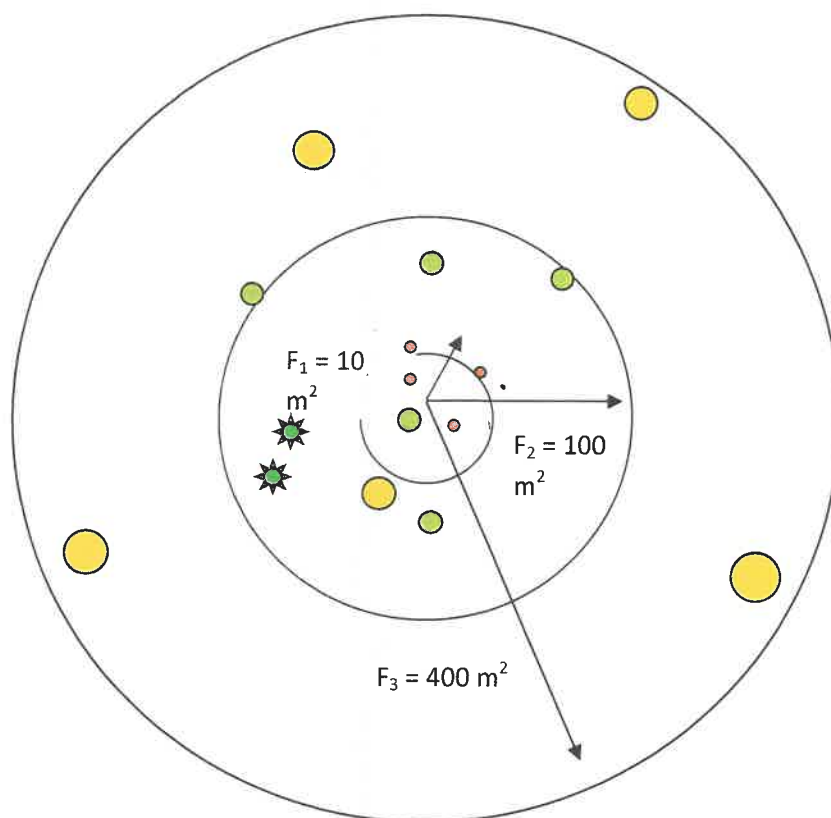
Therefore within the **first circle** (F_1 radius = 1.78m) all tree regeneration that is greater than 5cm at diameter at breast height (DBH) and taller than 1.3m is recorded (see Figure 8).

The **second circle** (F_2 radius = 5.64m) will record DBH of all trees greater than 5cm but less than 20cm DBH. Importantly this circle will also record information on bamboo (species and number of stems) and other indicator plants like ferns (see Figure 8).

The **third and final circle** (F_3 radius = 11.28m) will record the DBH of all trees greater than 20cm DBH (see Figure 8).

Height values will also be measured for all trees with a DBH of 35cm or greater. Height measurement protocol is outlined in section 3.3 – Measuring Height.

Figure 7. Layout of sampling units for 1st circle(F_1), 2nd circle (F_2) and 3rd circle(F_3).



8.0 Measurement Protocol

8.1 Measuring tree diameter

The below instructions are to be followed when measuring diameter:

- The diameter at breast height (DBH) is defined as 1.3m above ground level, (see Figure 9) and is recorded in centimetres (cm) to one decimal place (e.g. 23.4cm)
- Diameter can only be measured with a diameter tape or callipers.
- Trees on slopes are to be measured on the uphill side (see Figure 10)
- In the case where the bole is abnormally formed at breast height, two measurements are to be taken – one below and one above. These measurements are to be taken where the bole returns to its original shape. The two measurements taken will be averaged to define the diameter of the tree (see Figure 11)
- When a fork occurs, the height of the fork will decide the measurement taken. If the fork occurs above 1.3m then the tree is treated as one tree and only one measurement is taken (see Figure 12). Where the fork occurs below 1.3m the tree is treated as two separate trees and each fork is measured and recorded individually (See Figure 13).
- A leaning tree is measured at 1.3m parallel to the trees direction of lean (See Figure 14).
- Climbers and loose bark are to be removed from the measurement area before measuring.

Figure 8. Diameter at Breast Height

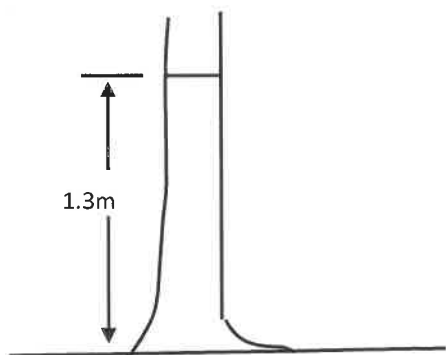


Figure 9. DBH measurement on sloping ground

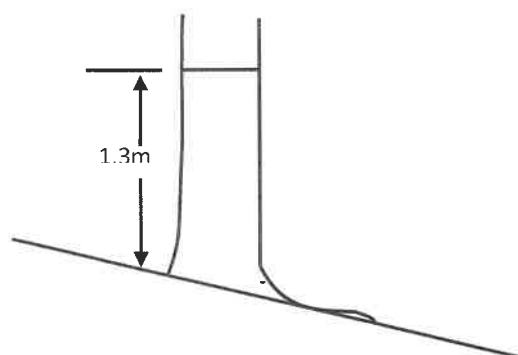


Figure 10. DBH measurement of abnormal tree

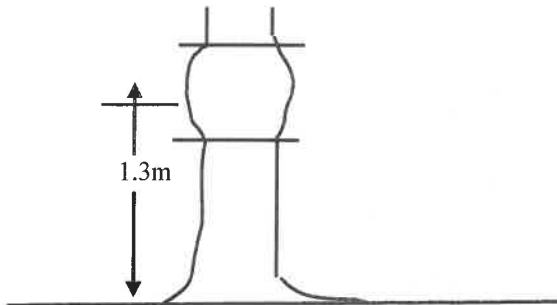


Figure 11. DBH measurement of forked tree above 1.3m

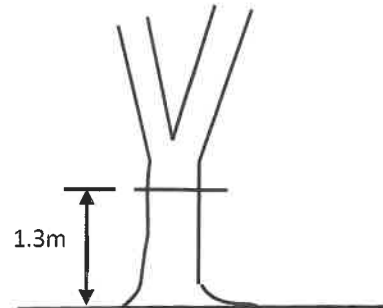


Figure 12. DBH measurement of forked tree below 1.3m

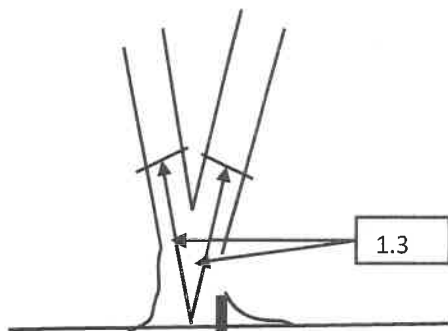


Figure 13. DBH measurement of a leaning tree

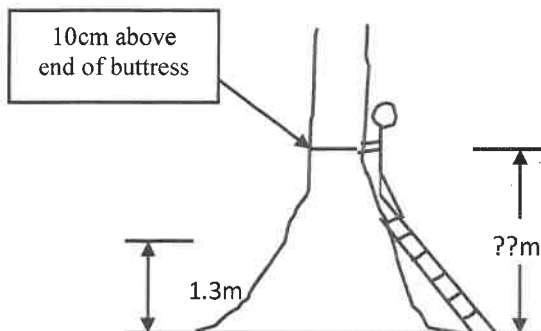
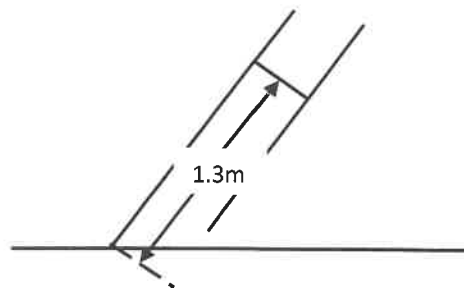


Figure 14. DBH measurement of a buttressed tree

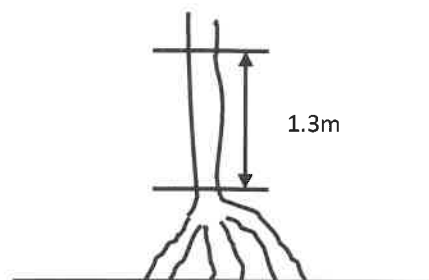


Figure 15. DBH measurement of a tree with aerial roots

Attention: The exact measurement height of 1.3m has to be observed strictly where applicable. Therefore it is essential for the team to carry a stick that is 1.3m in length.

It is essential for the person measuring the tree to clearly call out the measurement and for the recorder to call back clearly to the measurer the information that is being recorded. This simple procedure eliminates a common source of error in measurements.

8.2 Measuring Diameter of Buttressed Trees

From time to time trees that are buttressed will be encountered. DBH **will not be** measured at 1.3m but rather 10cm above the end of the buttress (see Figure 15 above). This will require the operator to climb the tree where possible to get above the buttress if conditions are safe enough to do so. **Don't climb the tree if it is unsafe!** Construct a bush ladder if the tree can't be climbed, but at all times the operators safety is more important.

8.3 Measuring tree height

Only merchantable height will be measured in the NFI 2005 – 2007. The reason being that objective is to assess merchantable volumes and that top height of tree is difficult to assess in dense canopies and adds little value compared to the time it takes to pin point the top.

All heights will be measured by clinometer. As a standard measurement technique all trees that require height measurement will be measured in the following way:

- One operator (with clino) with the help of another measures horizontal distance from the base of the tree
- At 10 meters one measurement in percent is taken to the base of the tree. The operator at the tree can help by pushing trees and shrubs out of the site line of the clino and by using a high-visibility vest to indicate the bottom of the tree
- Another measurement in percent is taken at the top of the merchantable height of the tree. Merchantable height is the point at which the main bole of the tree transitions into the crown, or where the first major branch occurs.
- The sum of the two measurements (to the bottom and to the top of the merchantable bole) will be divided by 10 and gives the bole length in meters (e.g. 15% down and 110% up equals 125% or a bole height of 12.5 m).

Knowing the total bole height, it is then easy to estimate the length and corresponding quality of the different sections along the bole.

8.4 *Measuring Slope*

Slope is measured with the clinometer and recorded in degrees on the field-recording sheet for each subplot. The slope measurement should be the angle of the slope between a horizontal line and the line along the ground. Measurement should be done with two people, one taking the measurement from the centre of the subplot and the other standing down or up slope. The two people should be similar in height and the operator should aim the clinometer at the eyes of the other person.

8.5 *Measuring distance*

Distance is measured in meters using a fiberglass tape of 50m length. Normal practise is that the person holding the compass will always hold the zero end of the tape while the other will stand near the peg or tree ensuring that tape is pull tight horizontally before calling out the distance in meters.

The fiberglass tapes is easily stretched or broken when treated carelessly. Avoid jerking the tape, stepping on it, allowing vehicles to pass over it, or bending it around sharp corners. After a day of field work, clean & wipe it dry before putting it away.

8.6 *Assessing tree bole quality*

For each section of the bole the log quality shall be assessed, using the same classes as the NFI 1991 – 1993. The minimum log length to be assessed is 2.5m. The quality classes to be assessed against are:

- A: no sweep, no branches, no visible defects, usable as peeler log
- B: minor sweep, branches, no visible defects, saw log good quality
- C: medium sweep, larger branches, small visible defects, saw logs medium/low quality
- D: pronounced sweep, branches, defects, only use as fire wood or industrial raw material

9.0 Collecting and Recording Data

Data collection should begin with the central subplot before any other subplot center is marked. After the central subplot is measured than the remaining four subplots are measured one at a time. For each subplot one form is to be completed. Therefore at the conclusion of measuring a sampling unit five forms will be filled in.

Figure 8. Illustration of the three measurement circles.

9.1 *Filling in the Field Form*

Field recording sheets have been developed to cater for easy recording of information in the field. One field recording sheets is only required to be completed for each subplot, and therefore five (5) field recording sheets will be completed for each sampling unit. Appendix two illustrates the field recording sheet. All data is to be filled in by the charge hand and should be legible.

9.2 *Information on sample cluster:*

This information is recorded based on the center point of the central plot. Map co-ordinates are to be provided to teams prior to leaving the office, and will be entered into the GPS. The other information can be sourced from the maps provided. This information should be recorded on each field-recording sheet for each subplot measured. Measuring altitude may prove to be difficult where the GPS has poor reception. If possible capture the altitude with the GPS otherwise the altitude from the contour lines on the topographic maps will be used.

9.3 *Plot Recordings:*

The aspect (Slope facing) on which the subplot is located is to be recorded. If the subplot is located on flat ground than 'F' should be recorded. Slope in degrees not as a percentage, is to be recorded. Indicate by circling the appropriate bearing which subplot is being measured.

1. First Circle (r = 1.78m)

The species and the number of trees are tallied and recorded. It is important to note here that no DBH record is required. However DBH is important as it sets the measurement limit. Importantly if the tree-spotter is unfamiliar with the species or is in doubt than an identification code is entered instead of the species name (see section 2.11).

2. Second Circle (r = 5.64m)

The second circle records the DBH of all trees with a DBH between >5cm and <20cm. Diameters are measured and recorded to one decimal place. Tree species name is also to be recorded unless the tree-spotter is unfamiliar with the species or in doubt, in which case the identification code will be entered (see section 2.11).

Bamboo species and the number of poles are counted. Where it becomes difficult to count all bamboo poles, a rough estimate is to be provided. Indicator species are also to be recorded and their quantity recorded within this measurement area.

3. Third Circle (r = 11.28m)

The third circle measures and records species and DBH of all trees equal to and above 20cm to one decimal place. In the instance where the tree-spotter is in doubt or does not know the species an identification code will be entered instead (see section 2.11).

Additionally, all trees with a diameter greater than or equal to 35cm DBH will have the additional measurement of height recorded. As well as height the trees bole quality will be assessed. See section 3.4 – Measuring Quality for the assessment guidelines.

Where it is viewed that the tree can be divided into sections of different quality this is to be recorded. The minimum length to be assessed is 2.5m and there is no maximum length restriction. Place the length of the section in the field recording form and the corresponding quality rating.

9.4 Tree Species Identification

The tree species are identified and recorded in their Fijian names. The encoding of the species according to the tree species code and scientific name is done in the office.

The tree species identification is conducted by the tree-spotter. To achieve the highest possible level of accuracy it is of major importance, that all characteristics (leave, fruit, sap, bark, etc) of the sample tree are inspected thoroughly.

If the species cannot be identified, the teams are required to collect samples of the trees characteristics (usually leaves and wood). The leaves are to be stored in a press or zip lock bag with either a small amount of water or 70% ethanol. The bag should be sealed air tight. Wood and bark should be stored in a separate bag. The collected material will later be dispatched to the herbarium of the University of the South Pacific, where the species are identified.

To reduce the possibilities of incorrect identification the teams should collect samples of leaves and wood, whenever the tree-spotter is in doubt. Each tree that is not identified in the field and samples are taken the following information should be completed and written on the sample bag.

Table 1. Information to be completed when unknown species are encountered.

Sample Cluster No.		Date	
Co-ordinate X		Co ordinate Y	
Subplot Location (N, E, S, W, C)		Circle No. (1, 2, 3)	
Record No. (tree no. within the circle)		Collector	

This information will enable the updating of information collected from the field in the database. When filling in the field recording sheet the word "UNKNOWN" should be recorded in the species field for the tree measured.

9.5 Completion of Field Sampling

On the completion of field sampling the operational plan for that period should be completed. i.e. problems that were encountered during the period, complete odometer readings, report any damage to equipment or personnel and report all expenditure for the period. All completed field recording sheets are to be attached to the operational plan with receipts for any expenditure. Completed Operational Plans are to be given to the Inventory Officer or placed in the in-tray on the Inventory Officers desk.

The team should review all field equipment to ensure it is in a workable condition. The Inventory Officer is to be notified if the vehicle requires a service or repairs. Any damage to the vehicle or other equipment or misplaced equipment is to be reported to the Inventory Officer.

Any accident or injury to field sampling members is to be reported to the Inventory Officer.

Appendix 1: 2005 -2007 NFI Field Form

1. Information on Sample Cluster	Forest Type on Map:
Island:	Province:
District:	Mataqali:
FMG East.....;South.....	Altitude(m):
Date:	Team Leader:

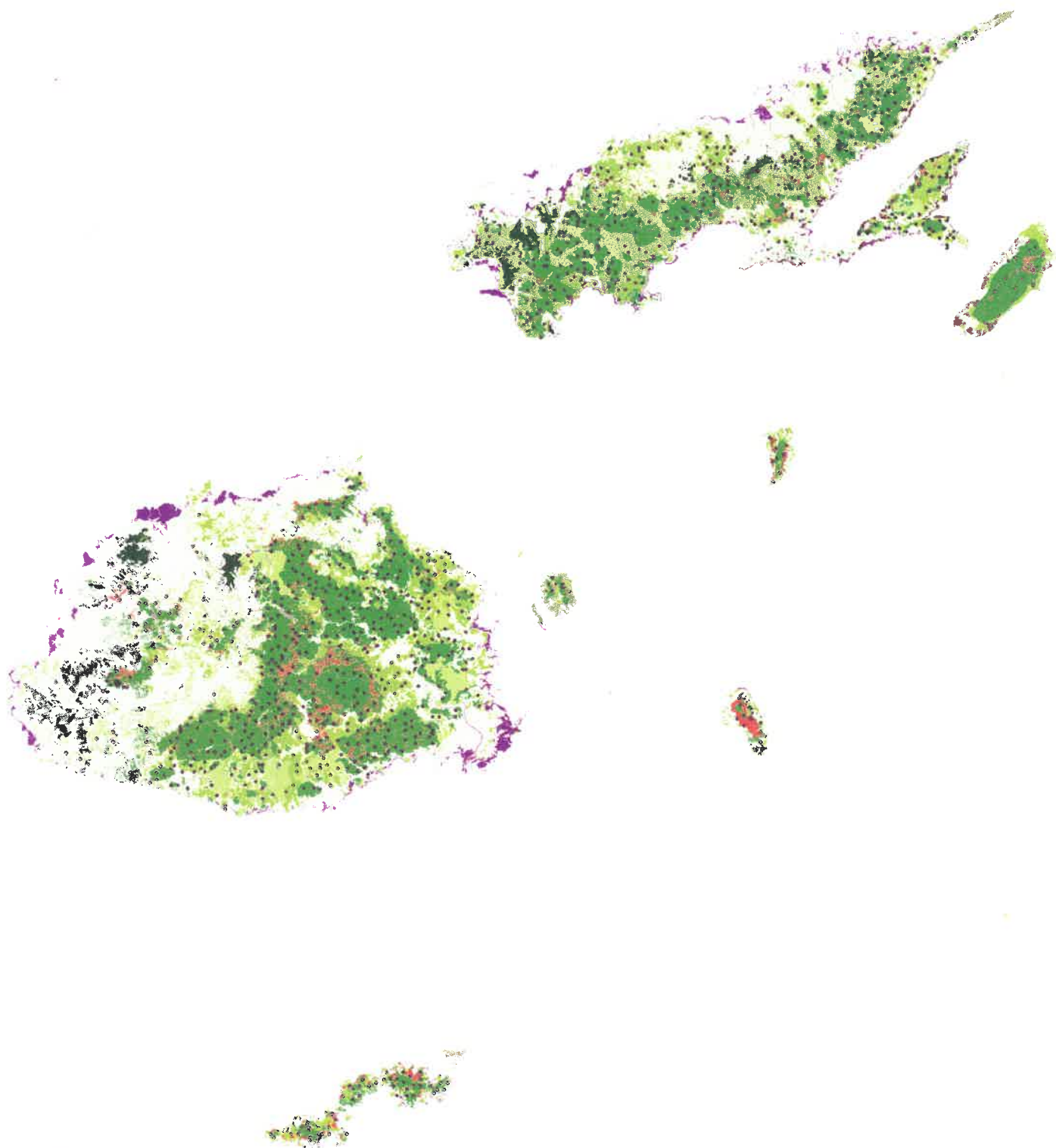
2. Plot Recordings	Plot Location(Circle): N <div style="display: flex; justify-content: space-around; align-items: center;"> W C E </div> S
Slope facing: N S E W	
Slope:degrees	

3. First Circle $r=1.78m$: Tree regeneration $>1.3m$ high and dbh $<5cm$					
Species	Total Number	Species	Total Number	Species	Total Number

4. Second Circle r=5.64m : Tree regeneration dbh 5cm to < 20cm; palms and bamboo					
Tree Species	Dbh[cm]	Tree Species	Dbh[cm]	Tree Species	Dbh[cm]

[illegible]

Appendix 2: 2005 -2007 NFI Plot Distribution



Appendix 3: Equipment List



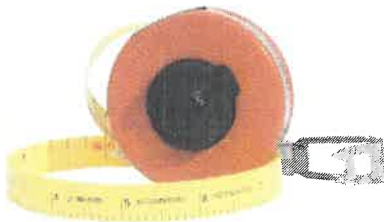
Compass



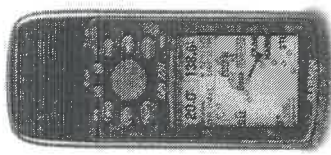
Clinometer



Fibreglass 50m Tape



Diameter Tape



GPS



Aluminium Clip Board



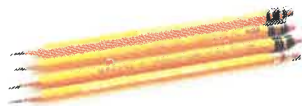
Knife



Flat File



First Aid Kit



Pencil



Calculator



Aluminium Clip Board

**CONTRACT FOR CONSULTING SERVICES – Development of the
National Forest Monitoring System (NFMS) Integration Framework**

(GRANT FINANCED)

CONTRACT No: 45

THIS CONTRACT is entered into this **3rd March** **2020**

By and between

MINISTRY OF FORESTRY

and

MICHAEL GREEN

GR

THIS CONTRACT ("Contract") is entered into this **3rd March** **2020**.

BETWEEN: **Ministry of Forestry** having its principal place of business at **Takayawa Building, Toorak Road, Suva, Fiji** ("Client");

AND: **Michael Green of New Zealand** ("Consultant").

WHEREAS:

- A. The Client wishes to have the Consultant perform the services hereinafter referred to; and
- B. The Consultant is willing to perform these services,

THE PARTIES HEREBY AGREE AS FOLLOWS:

1. **Services** The Consultant shall perform the services and provide the deliverables specified in Annex A, "Terms of Reference" which is made an integral part of this Contract ("**the Services**").
2. **Term** The Consultant shall perform the Services during the period commencing **23 March 2020** until **22 July 2020** or at closing of the project (whichever occurs earlier) or any other period as may be subsequently agreed by the parties in writing.
3. **Payment**
 - A. Ceiling

For Services rendered pursuant to Annex A, the Client shall pay the Consultant an amount not to exceed a ceiling of **USD\$ 25.000**. This amount has been established based on the understanding that it includes all of the Consultant's costs and profits as well as any tax obligation that may be imposed on the Consultant. The payments made under the Contract consist of the Consultant's remuneration as defined in sub-paragraph B below and of the reimbursable expenditures as defined in sub-paragraph C below.
 - B. Remuneration

The Client shall pay the Consultant a fixed price of **US\$25,000**. The contract ceiling is **US\$25,000**, inclusive of all project related expenses and direct taxes (15% withholding tax).
 - D. Payment Conditions

Payment shall be made in **US Dollars** not later than 30 days following submission of invoices via e-mail to the Coordinator

designated in paragraph 4.

Payments shall be made to Consultant's bank account

Bank Name: ANZ New Zealand

Account Name: Environmental Accounting
Service Limited

Account Number: 06-0943-0137686-00

IBAN Not required to transfer money
to New Zealand

Swift Code: ANZBNZ22

**4. Project
Administration**

A. Coordinator

The Client designates *Ilaisa Tulele (Mr.), Project Team Leader, REDD+ Unit*, as the Client's Coordinator; the Coordinator shall be responsible for the coordination of activities under the Contract, for receiving and approving invoices for payment, and for acceptance of the deliverables by the Client.

B. Records and Accounts

The Consultant shall keep, and shall cause its Sub-Consultants to keep, accurate and systematic records and accounts in respect of the Services, which will clearly identify all charges and expenses. The Client reserves the right to audit, or to nominate a reputable accounting firm to audit, the Consultant's records relating to amounts claimed under this Contract during its term and any extension, and for a period of three months thereafter.

**5. Performance
Standard**

The Consultant undertakes to perform the Services with the highest standards of professional and ethical competence and integrity. The Consultant shall promptly replace any employees assigned under this Contract that the Client considers unsatisfactory.

**6. Inspections and
Auditing**

The Consultant shall permit the World Bank ("**Bank**") and/or persons or auditors appointed by the Bank to inspect and/or audit its accounts and records and other documents relating to the submission of the Proposal to provide the Services and performance of the Contract. Any failure to comply with this obligation may constitute a prohibited practice subject to contract termination and/or the imposition of sanctions by the Bank (including without limitation a determination of ineligibility) in accordance with prevailing Bank's sanctions procedures.

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- 7. Confidentiality** The Consultant shall not, during the term of this Contract and within two years after its expiration, disclose any proprietary or confidential information relating to the Services, this Contract or the Client's business or operations without the prior written consent of the Client.
- 8. Ownership of Material** Any studies, reports or other material, graphic, software or otherwise, prepared by the Consultant for the Client under the Contract shall belong to and remain the property of the Client. The Consultant may retain a copy of such documents and software.
- 10. Insurance** The Consultant will be responsible for taking out any appropriate insurance coverage.
- 11. Assignment** The Consultant shall not assign this Contract or Subcontract any portion of it without the Client's prior written consent.
- 12. Law Governing Contract and Language** The Contract shall be governed by the laws of Republic of Fiji, and the language of the Contract shall be English.
- 13. Dispute Resolution** Any dispute arising out of this Contract, which cannot be amicably settled between the parties, shall be referred to adjudication/arbitration in accordance with the laws of the Client's country.
- 14. Termination** The Client may terminate this Contract with at least ten (10) working days, prior written notice after the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause or mutual agreement:
- (a) if the Consultant does not remedy a failure in the performance of its obligations under the Contract within seven (7) working days after being notified, or within any further period as the Client may have subsequently approved in writing;
 - (b) if the Consultant becomes insolvent or bankrupt;
 - (c) if the Consultant, in the judgment of the Client or the Bank, has engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices (as defined in the prevailing Bank's sanctions procedures) in competing for or in performing the Contract; or
 - (d) if either party, in their sole discretion and for any reason whatsoever, decides to terminate this Contract.
- Upon termination of this Contract for any reason described above, the Client shall pay all amounts due and owing and/or earned by the Consultant through to the date of such termination.

On termination or expiry of this Contract, all rights and obligations of the parties shall cease, except:

- (i) rights and obligations that have accrued on or before the date of termination or expiration; and
- (ii) the obligation of confidentiality, but this obligation will cease to apply to any knowledge, information or data which has been made public by the Client or has otherwise entered the public domain other than through a breach of this Contract by the Consultant.

The Consultant shall not at any time during or after the termination of this Contract disclose any information that is deemed confidential by the Client.

15. Fraud and Corruption

It is the World Bank's policy to require that Borrowers (including beneficiaries of the World Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of the World Bank-financed contracts. In pursuance of this policy, the World Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;
- (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- (iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- (v) "obstructive practice" is
 - (aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false

statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the World Bank's inspection and audit rights;

(b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the World Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;

(d) will sanction a firm or an individual at any time, in accordance with prevailing World Bank's sanctions procedures, including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a World Bank-financed contract, and (ii) to be a nominated sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a World Bank-financed contract

16. Representation and Warranty

(a) The Client represents and warrants to the Consultant that: (i) the execution and delivery of this Contract by it, and the performance of its obligations hereunder, are not in violation of, and do not and will not conflict with or constitute a default under, the formation documents of the Client or any terms and provisions of any agreement to which the Client is a party. The Consultant has not made, and will not be required or expected to make, any payment, offer of payment, gift, money or anything of value to any officer, or employee of the Client or any Governmental or regulatory official of the Republic of

Fiji to obtain the business evidenced by this Contract or perform its obligations hereunder.

- (b) The Consultant represents and warrants to the Client that: (i) the execution and delivery of this Contract by it, and the performance of its obligations hereunder, are not in violation of, and do not and will not conflict with or constitute a default under, the formation documents of the Consultant or any terms and provisions of any agreement to which the Consultant is a party; and (ii) this Contract has been duly executed and delivered by the Consultant and is a valid and binding obligation in accordance with its terms.

17. Independent Contractor

The relationship established by this Contract between the Client and the Consultant is that of independent contractor, and nothing in this Contract creates or will be deemed to create a relationship of joint venture, partnership, employer-employee, or agent among the parties, or among either party or the other party's employees. The Consultant has the sole and exclusive right to exercise control over the manner and means of operation of the Consultant's work performed pursuant to this Contract, provided that it is not contrary to professional standards or the terms of this Contract. The Consultant does not have authority to create any obligations for or on behalf of the Client, nor may the Consultant create or enter into any obligations for the Client.

18. Amendment This Contract may only be amended in writing signed by the parties.



19. Force Majeure Either party shall not be liable for any delays or failure to perform its obligations under this Contract if it is due to force majeure.

- (a) For the purpose of this Contract, "force majeure" means any event beyond the control of either party and not involving that party's fault or negligence. Such events may include but are not limited to wars, revolutions, strikes, civil commotions, earthquakes, tempest, fires and floods.
- (b) Unless otherwise agreed in writing each party shall continue to perform its obligations under this Contract as far as is reasonably practicable and shall seek all reasonable alternative means of performance not prevented by the force majeure event.

20. Severability If any provisions of this Contract are determined by law to be illegal, invalid, void or voidable, the legality or validity of the remainder of this Contract shall not be affected and shall continue to be in force and full effect.

AS WITNESSED OUR HAND the day and year above written we agree to the terms and conditions of this contract.

Signed By and Date:
[Client]

  10th March 2020

G.P.N. Baleinabuli
Permanent Secretary for Forestry
For & on behalf of the Government of the Republic of Fiji

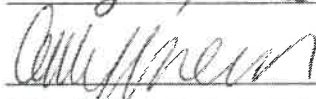
Signed by and Date
[Consultant]


[Signature of Consultant]

Address of Consultant:

50 Charles Court, Hawera
Otago, New Zealand.

In the presence of:
[Witness]


[Signature of Witness & Date]

Address of Witness:

50 Charles Ct Hawera
Otago New Zealand.

Occupation:

Director, EAS
[Departmental Witness]

LIST OF ANNEXES

Annex A: Terms of Reference

National Forest Monitoring System (NFMS) Integration Framework Consultant

Location: Fiji REDD+ Unit, Forestry Department

Duration: 4 months intermittent as required

Expected date of start: 23 March 2020

1. Background

The World Bank, under the Forest Carbon Partnership Facility (FCPF), is assisting Fiji prepare for the implementation of its 5-year Emission Reduction (ER) national programme, scheduled to begin by July 2020. Under the national programme Fiji has pledged to implement emission reduction activities, which include: (a) sustainable forest management practices within the natural forests, which aims to lessen the impact of forest degradation during harvesting; (b) the protection of sites of significant and important terrestrial biodiversity areas, as a means of reducing deforestation; (c) carbon stock enhancement, which includes: (i) the reforestation of logged out areas and grasslands, and (ii) the adoption of “climate-smart” agricultural systems, which involve the introduction of trees into farming activities. These activities are expected to increase and improve the forest carbon sinks and result in the sequestering of 2.5 million tons of greenhouse gases over the 5-year implementation period, which is then monetized through trading with the FCPF. Fiji will be compensated through “result-based” payments for emission reduction work completed.

The REDD+ Unit, with the Ministry of Forestry’s Forest Resource Assessment (FRA) Division, has progressively developed a framework of recording and reporting databases that were developed independent of each other, which include: a) Timber Revenue System (TRS) – automated revenue system for determining timber royalty and scaling fees based on tree species and volume removals from forests; b) Method for generating annual activity data through remote sensing and the classification of satellite images of forest cover changes (2006 – 2019) – for determining changes in forest areas and conversion into other land uses; and c) IPCC compliant methodology for determining forest emission reference level. The inter-phasing of data/information from these systems for the reporting purposes is at present done manually.

An important and integral aspect of the ER national programme is the establishment of a reputable monitoring, reporting and verification (MRV) system, which is capable of measuring annual changes in forest cover and carbon stocks and report on Fiji’s performance over the implementation period. The MRV system will record all implemented ER activities through the upload all collected field data onto the Ministry of Forestry’s database.

To ensure a consistent, efficient and effective reporting of the forest activities and changes in land use, an integrated framework of national forest monitoring system (NFMS) will be developed, which incorporates the existing reporting functions and inter-phases with the associated MRV. The developed NFMS will be: (1) all-encompassing in its reporting capabilities, i.e. whilst meeting the reporting requirements of the FCPF, it will also support the compilation of the 5-yearly Forest Resource Assessment (FRA) Report, Annual TRS, and the

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Ministry of Forestry's international, regional and national obligations; (2) User-friendly, i.e. comprehensible and useable by authorized staff of the ministry.

2. Reporting

The Consultant will report to:

- a) The World Bank and
- b) Program Team Leader, REDD+ Unit, Ministry of Forestry, Fiji.

3. Purpose of the consultancy

The objective of the assignment is to (1) develop an integration framework that links the existing National Forest Monitoring System (NFMS) Database to the Forest Reference Level (FRL) and Emission Reduction methodology and institutionalised into the Ministry of Forestry to meet its national and international REDD+ reporting requirements (2) Documentation of the System, and (3) Standard Operating Procedure (SOP) of which the staff will be trained, which will be submitted to facilitate the completion of the contract agreement.

4. Tasks

In close consultation with the World Bank and Fiji's REDD+ Unit, through the Program Team Leader, the consultant will be required to carry out the following tasks:

- a) Develop an Action Plan and compile and submit an Inception Report, outlining the activities, expected time-line for each activity and expected outputs, prior to travelling into Fiji.
- b) Conduct orientation meetings with the Senior Executives and the Forest Resource Assessment (FRA) Staff of the Ministry of Forestry to present the outline of the consultancy work and the expected findings;
- c) In summary the technical aspects of the consultancy will include:
 - Convert the existing R script calculation tool to calculate the emission level for each monitoring period;
 - Create user friendly interfaces between the R script calculation tool and the NFMS database;
 - Update the FRL methodology document to include the calculations used to generate the Emission Reductions estimates;
 - Develop Standard Operating Procedure (step by step instructions) for running NFMS Integration Tool and generating estimates;
 - Conduct staff training on the running and management of the NFMS Integration Tool.
- d) Submit a final report, which includes the Systems Documentation, Standard Operating Procedures (SOP) and recommendations for the maintenance and improvement to the integrated NFMS.

The Fiji REDD+ Unit will responsible for meeting and logistical arrangements listed above.



5. Time Frame

The time frame of the position will be 4 months from **23 March 2020 to 22 July 2020**. The consultant is expected to spend a maximum of **19 days** in Fiji. Any extension and/or deviation to the contract term will be through the formal notification by both parties.

6. Key Performance Indicators

#	Indicative Activities	Invoice Amount	Indicative Dates
1	Signing of Contractual Agreement		20 th March, 2020
2	Document review and development of action plan and short inception report – <i>facilitate 30% payment of consultancy value;</i>	US\$7,500	13 th April, 2020
	Remote preparation of resources and digital material		14 th April – 12 th June 2020
4	Arrival in Fiji Orientation meeting with team in Fiji		No earlier than 17 th June, 2020 No later than 3 rd July, 2020
5	In-country development of Integrated NFMS work, which includes training of staff and compilation/documentation of Systems Document and Standard Operating Procedures – <i>facilitate 50% payment of consultancy value;</i>	US\$12,500	For duration of no longer than 19 from arrival in Fiji
6	Final presentation and submission of final report – <i>facilitate 20% (final payment) of consultancy value</i>	US\$5,000	15 July 2020

7. Final Report (+ Financial Report):

The Consultant is expected to submit the (final draft) report in the format annexed C. In addition, the consultant is also expected to submit to the Fiji REDD+ Unit a financial report (record), attaching original copies of all receipts & vouchers for expenses incurred under this contract.

8. Remuneration:

The consultant shall be paid fixed price of US\$25,000 This includes professional service fees and all project delivery related expenses

TOTAL COST \$25,000 USD

CONTRACT CEILING: \$25,000 USD

gdi

CONTRACT FOR CONSULTING SERVICES

THIS CONTRACT ("Contract") is entered into this**March 2020**, by and between the **Ministry of Forestry** having its principal place of business at **Takayawa Building, Toorak Road, Suva, Fiji**, and Denis Alder having its principal office located at 9 Stansfield Close Headington Oxford OX3 8TH, UK.

WHEREAS:

A. The Client wishes to have the Consultant perform the services hereinafter referred to, and

B. The Consultant is willing to perform these Services,

NOW THEREFORE THE PARTIES hereby agree as follows:

- 1. Services**
 - (i) The Consultant shall perform the services specified in Annex A, "Terms of Reference and Scope of Services," which is made an integral part of this Contract ("**the Services**").
 - (ii) The Consultant shall provide the personnel listed in Annex B, "Consultant's Personnel," to perform the Services.
 - (iii) The Consultant shall submit to the Client the reports in the form and within the time periods specified in **Annex B**, "Consultant's Reporting Obligations."

- 2. Term**

The Consultant shall perform the Services during the period commencing March, 2020 and continuing through June, 2020 or if later, for four calendar months from the date of signing of this contract by both parties, or any other period as may be subsequently agreed by the parties in writing.

- 3. Payment**
 - A. Ceiling

For the Services rendered pursuant to Annex A, the Client shall pay the Consultant an amount not to exceed **USD 23,500**. This amount has been established based on the understanding that it includes all of the Consultant's costs and profits as well as any tax obligation that may be imposed on the Consultant.

- B. Schedule of Payments

The schedule of payments is specified below:

USD 8,225 (35% of the contract agreement) upon submitting 2006 Forest Inventory data analysis, draft report and all data sets and analytical steps (scripts) and documentation

USD 8,225 (35 % of the contract agreement) upon the receipt of PSP data analysis, draft report, growth models, all data sets, scripts, output tables; and

USD 7,050 (30% of the contract agreement) upon the receipt of the Final reports for both the Inventory and PSP analysis, incorporating any required amendments and updates to deliverable files, tables and scripts

Total: USD 23, 500

C. Payment Conditions

Payment shall be made in USD no later than 30 days following submission by the Consultant of invoices in duplicate to the Coordinator designated in paragraph 4.

Payments shall be made to Consultant's bank account:

Account Name: Denis Alder

IBAN /Account Number: GB83HBUK40353424000250

BIC/SWIFTCODE: HBUKGB4108P

Address of Bank Branch: 65 Cornmarket Street, Oxford, OX1 3HY, UK

Currency: USD

4. Project Administration

A. Coordinator.

The Client designates Ilai Tulele [Program Team Leader REDD+ Unit, Ministry of Forestry] as the Client's Coordinator; the Coordinator will be responsible for the coordination of activities under this Contract, for acceptance and approval of the reports. Any payments made under this contract shall be approved by the Permanent Secretary of the client only.

B. Reports.

The reports listed in Annex B, "Consultant's Reporting Obligations," shall be submitted in the course of the assignment and will constitute the basis for the payments to be made under paragraph 3.

5. Performance Standards

The Consultant undertakes to perform the Services with the highest standards of professional and ethical competence and integrity. The Consultant shall promptly replace any employees assigned under this Contract that the Client considers unsatisfactory.

6. Confidentiality

The Consultant shall not, during the term of this Contract and within two years after its expiration, disclose any proprietary or confidential information relating to the Services, this Contract or the Client's business or operations without the prior written consent of the Client.

7. Ownership of Material

Any studies report or other material, graphic, software or otherwise, prepared by the Consultant for the Client under the Contract shall belong to and remain the property of the Client. The Consultant may retain a copy of such documents and software.

- 8. Consultant Not to be Engaged in Certain Activities** The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, shall be disqualified from providing goods, works or services (other than the Services and any continuation thereof) for any project resulting from or closely related to the Services.
- 9. Insurance** The Consultant will be responsible for taking out any appropriate insurance coverage.
- 10. Assignment** The Consultant shall not assign this Contract or sub-contract any portion of it without the Client's prior written consent.
- 11. Law Governing Contract and Language** The Contract shall be governed by the laws of *Fiji*, and the language of the Contract shall be English.
- 12. Dispute Resolution⁴** Any dispute arising out of the Contract, which cannot be amicably settled between the parties, shall be referred to adjudication/arbitration in accordance with the laws of the Client's country.
- 13. Inspections and Auditing** The Consultant shall permit the Bank and/or persons or auditors appointed by the Bank to inspect and/or audit the Consultant's accounts and records and other documents relating to the performance of the Contract. Any failure to comply with this obligation may constitute a prohibited practice subject to contract termination and/or the imposition of sanctions by the Bank (including without limitation a determination of ineligibility) in accordance with prevailing Bank's sanctions procedures
- 14. Termination** The Client may terminate this Contract with at least ten (10) working days prior written notice to the Consultant after the occurrence of any of the events specified in paragraphs (a) through (c) of this Clause:
- (a) If the Consultant does not remedy a failure in the performance of obligations under the Contract within seven (7) working days after being, or within any further period as the Client may have subsequently approved in writing.
 - (b) If the Consultant, in the judgment of the Client or the Bank, has engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices (as defined in the prevailing Bank's sanctions procedures) in competing for or in performing the Contract: or
 - (c) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.

Upon termination of this Contract for any reason described above, the Client shall pay all amounts due and owing and/or earned by the

⁴ In the case of a Contract entered into with a foreign Consultant, the following provision may be substituted for paragraph 12: "Any dispute, controversy or claim arising out of or relating to this Contract or the breach, termination or invalidity thereof, shall be settled by arbitration in accordance with the UNCITRAL Arbitration Rules as at present in force."

Consultant through to the date of such termination.

The Consultant may terminate this Contract by providing 30 days written notice to the Client.

On termination or expiry of this Contract, all rights and obligations of the parties shall cease, except:

- (i) rights and obligations that have accrued on or before the date of termination or expiration: and
- (ii) the obligation of the confidentiality, but this obligation will cease to apply to any knowledge, information or data which has been made public by the Client or has otherwise entered the public domain other than through a breach of this Contract by the Consultant.

The Consultant shall not at any time during or after the termination of this Contract disclose any information that is deemed confidential by the Client.

15. Fraud and Corruption

It is the Bank's policy to require that Borrowers (including beneficiaries of Bank grants), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts. In pursuance of this policy, the Bank:

- (a) defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party.
 - (ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation.
 - (iii) "collusive practices" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
 - (iv) "coercive practices" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
 - (v) "obstructive practice" is

- (aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or
 - (bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights;
- (b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- (c) will declare misprocurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;
- (d) will sanction a firm or an individual at any time, in accordance with prevailing Bank's sanctions procedures, including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

16. Representation and Warranty

- (a) The Client represents and warrants to the Consultant that: (i) the execution and delivery of this Contract by it, and the performance of its obligations hereunder, are not in violation of, and do not and will not conflict with or constitute a default under, the formation documents of the Clients or any terms and provisions of any agreement to which the client is a party. The Consultant has not made, and will be required or expected to make any payment, offer of payment, gifts, money or anything of value to any officer, or employee of the Client or any Governmental or regulatory official of the Republic of Fiji to obtain the business evidence by this Contract or perform its obligations hereunder.

- (b) The Consultant represents and warrants to the Client that: (i) the execution and delivery of this contract by it, and the performance of its obligations hereunder, are not in violation of, and do not and will not conflict with or constitute a default under, the formation documents of the Consultant or any terms and provisions of any agreement to which the Consultant is a party; and (ii) this Contract has been duly executed and delivered by the Consultant and is a valid and binding obligation in accordance with its terms.

17. Independent Contractor

The relationship established by this Contract between the Client and the Consultant is that of independent contractor, and nothing in this Contract creates or will be deemed to create a relationship of joint venture, partnership, employer-employee, or agent among the parties, or among either party or the other party's employees. The Consultant has the sole and exclusive right to exercise control over the manner and means of operation of the Consultant's work performed pursuant to this Contract, provided that it not contrary to professional standards or the terms and Agreement. The Consultant does not have authority to create any obligations for or on behalf of the Client, nor may the Consultant create or enter into any obligations for the Client.

18. Amendment

This Agreement may only be amended in writing signed by the parties.

19. Force Majeure

Either party shall not be liable for any delays or failure to perform its obligations under Contract if it is due force majeure.

- (a) For the purpose of this Contract "force majeure" means any event beyond the control of either party and not involving that party's fault or negligence. Such events may include but are not limited to wars, revolutions, strikes, civil commotions, earthquakes, tempest, fires and floods.
- (b) Unless otherwise agreed in writing each party shall continue to perform its obligations under this Contract as far as is reasonably practicable and shall seek all reasonable alternative means of performance not prevented by the force majeure event.

20. Severability

If any provision of this Contract are determined by law to be illegal, invalid, void or voidable, the legality or validity of the remainder of this Contract shall not be affected and shall continue to be in force and full effect.

FOR THE CLIENT

Signed by _____
Name: Pene N. Baleinabuli
Permanent Secretary for Ministry for Forestry

Witness

Name:
Designation:
Date:

FOR THE CONSULTANT

Signed by _____
Denis Alder
9 Stansfield Close Headington Oxford OX3 8TH,
UK

Witness

Name:
Designation:
Date:

LIST OF ANNEXES

Annex A: Terms of Reference and Scope of Services

Annex B: Consultant's Reporting Obligations

Annex C: Cost Estimate of Services, List of Personnel and Schedule of Rates

ANNEX A

Term of Reference For Preparing a Report of National Forest Inventory 2006 and Report of Permanent Sample Plot Measurements

1. Background

Fiji is implementing a series of activities as stipulated in the Readiness Preparation Proposal (R-PP) to prepare itself for the REDD+ (Reducing Emissions from Deforestation and Forest Degradation and forest conservation, sustainable management of forests and carbon stock enhancement) mechanism to harness potential benefits of REDD+ implementation in future. It has been envisioned that REDD+ implementation has the prospect to contribute to sustainable forest management including improvement of forest governance.

The Forest Carbon Partnership Facility (FCPF) is supporting Fiji to enable the country to participate in REDD+ processes and to harness benefits of the result-based payments (RBP) for REDD+. In order to implement REDD+, Fiji required to establish measurement, reporting and verification (MRV) within the existing National Forest Monitoring System (NFMS) that provide national estimates of changes in emissions and removals from forest resources that can be reported biennially. Forest resource inventory is an important basis for the design and implementation of NFMS.

In Fiji, three National Forest Inventories (NFIs) were conducted in the past. Assessing timber stock in the forest for logging was the main aim of the inventories. The most recent NFI was conducted in 2006. Analysis of NFI data is necessary to have detailed understanding of the forest dynamics and to serve the needs of forest monitoring system. However, analysis of NFI data was not completed for the NFI conducted in 2006. Therefore, preparation of a report presenting the analysis of NFI 2006 data is a priority.

Permanent sample plots (PSPs) provide data on forest growth and forest dynamics (status, condition, and trends). Fiji has established 84 PSPs in the forest area. The PSP were periodically measured (2010, 2012, 2014, 2016, and 2018) to record changes in the specified stand and tree attributes. All data collected are available in the database established at the Ministry of Forestry. However, analysis of the PSP measurements and estimation of biomass that meets precision and confidence interval requirements were not conducted. Therefore, analysis of the PSP measurement data is essential to understand forest growth dynamics and to support forest management initiatives.

2. Objectives

The objective of this assignment is to analyze the NFI 2006 and PSP measurement data ((2010, 2012, 2014, 2016, and 2018); and to prepare reports with the analysis of NFI and PSP data reflecting the status of Fiji forest resources.

3. Brief description of the NFI and PSP data

3.1 National Forest Inventory

For the NFI 2006, a sampling unit consisting of a cluster with 5 concentric plots was used. Each plot has three concentric circular plots with radius of 11.28 m, 5.64 m, and 1.78 m. The sample plots were not permanently marked so that they cannot be used for repeated measurements. A total of 1023 clusters were assessed. The main forest attributes recorded in the NFI 2006 were forest types (open and closed), forest function, district, province, beat, spatial location of a plot, diameter at the breast height (DBH), and tree commercial height. All trees having DBH ≥ 5 cm were recorded. A standard Operating Procedure of NFI is available at <http://www.forestry.gov.fj/>.

3.2 Permanent Sample Plots

The outermost plot has a size of 50 m x 50 m, DBH [cm], total tree height [m] and species are recorded on all living trees with DBH ≥ 25 cm. Two subplots having size 20 m x 20 m are placed at the east and west corner of the outmost square plot. On the two 20 m x 20 m subplots, DBH [cm], total tree height [m] and species were recorded on all living trees ≥ 5 cm and < 25 cm DBH. The plots are permanently marked so that repeated recordings at successive occasions are possible. A total of 84 PSPs were established in 2010. Five measurements (2010, 2012, 2014, 2016, and 2018) have been done until 2018. The data are recorded in MS Access format.

4. Methodology

Standard Operating Procedures exist for both NFI and PSP measurements. The consultant is expected to review the documents related to NFI and PSP prior to conducting analysis of NFI and PSP measurement data. The consultant is expected to use open source software for conducting statistical analysis of the data.

5. Scope of work and main responsibilities

The consultant will analyze the NFI and PSP data, and prepare reports. The consultant work program will include the following tasks.

Task 1. Analysis of data

The consultant will liaise with the REDD+ Unit and the Ministry of Forestry (MoF) to get access to the data. The consultant should share the data analysis to REDD+ Unit and the Ministry of Forestry to validate the analysis before writing the reports. Checks on data quality needs to performed to detect and correct errors in data.

The statistical analysis of data should cover plot and stratum level descriptive statistics of the inventory, diameter- height relationships, basal area, growing stock, increment, site index and other relevant inventory metrics

Task 2. Result report

The consultant is expected to prepare - Report on the NFI and PSP measurements.

(i) NFI 2006 Data Analysis Report

The reports should contain annexes which explain the software used, scripts used to analyze the data, and equations used to estimate volume and biomass. A detailed description of the methods and estimation procedures should be presented to ensure replication of the results of analysis. The consultant is expected to use open source statistical software as far as possible for the data analysis. The report or analysis should include maps, graphs, tables, and other illustrations to communicate the results of analysis in an effective way and to support the analysis.

The NFI report should include the following analysis;

- Historical background of Fiji's forest
- Description of the previous National Forest Inventories or assessments
- Description of sampling approach, sample frame and sample plot designs of NFI2006
- Description of method used for NFI data collection and sampling design of the NF
- Tree count by diameter classes, merchantable height classes, and tree species
- Forest attributes such as forest cover, basal area, volume, tree counts by strata District, Province, and Division
- Volume and biomass of upland and lowland forests differentiated with data from using Digital Elevation Model (DEM) as well as distinguishing the closed and open forests based on basal area/canopy cover measures.
- The growing stock in terms of volume and biomass should be presented with uncertainty estimates.
- Volume by diameter class, by merchantable height class, and by major tree species
- Gaps in the design and implementation of 2006 NFI recommendations for improving the design of future National Forest Inventory and data collection.

The consultant can consult the NFI 2006 team which is still working under the Ministry of Forestry for greater details if documented information related to NFI is not sufficiently available.

(ii) PSP Data Analysis Report

The PSP report should cover at least the following aspects;

- Background to the PSP Program
- Features of PSP measurements campaigns (2010, 2012, 2014, 2016, 2018) – common and consistent features of PSP measurement campaigns
- Description of sampling approach, sample frame and sample plot designs of PSP

- Data collected and methods used for data collection on PSP at measurement campaigns
- Descriptive statistics of sample plot measurement attributes
- Diameter-height relationships by tree species
- Volume and biomass increments measured at each measurement campaigns
- Gaps in the PSP sample plots framework and gaps in the data of measurement campaigns
- Recommendation to improve the design of PSPs
- Scope for integrating PSP sample frame with the REDD+ requirement

(iii) Capacity building of government Staff and other Stakeholders

The consultant will visit Suva and conduct a training to the government staff and other REDD+ relevant stakeholder on NFI and PSP data analysis and result. This will enable the government staff to produce similar kind of report in the future. The period of training will be a maximum of 5 days. The Ministry of Forestry will bear the cost of the training.

6. Time required

The estimated number of days required to complete the work is 42 days and the contract period is 10 weeks.

7. Deliverables

- Analysis and report on the National Forestry Inventory 2006. The report should be well referenced.
- Analysis and report on the Permanent Sample Plot Measurement. The report should be well referenced.
- Dataset of 2006 NFI used for statistical analysis.
- Datasets of PSP measurement 2010, 2012, 2014, 2016, and 2018 used for statistical analysis.

8. Payment schedule

SN	Deliverable	Payment (%)	Payment (USD)
1	2006 Inventory Analysis: Draft report and all data sets and analytical steps (scripts) and documentation	35%	8,225.14
2	PSP data analysis, draft report, growth models, all data sets, scripts, output tables	35%	8,225.14
3	Final reports for both the Inventory and PSP analysis, incorporating any required amendments and updates to deliverable files, tables and scripts	30%	7,050.12

9. Reporting arrangements

The consultant will report to Fiji REDD+ Unit and addresses to Ilai Tulele (tulele.ilai@live.com) REDD+ Program Leader, Dr. Narendra Chand (narendrachand@gmail.com), and Mr. Viliame Tupua (vtupua@gmail.com).

10. Consultant qualification

The consultant will have the following qualifications.

- Advanced Degree in Forest Inventory, Forest Biometrics, Forest Science, Biology, Natural Resources or equivalent
- More than 5 years of experience in forest inventory and permanent sample plots
- Demonstrated knowledge and experience in forest statistics
- Strong skills on using statistical software packages
- Experience of working in the South Pacific Region specifically having knowledge of the vegetation of the region, previous work experience in the Fiji forestry sector is an advantage.
- Experience of writing such reports is an advantage

Annex B: Consultant's Reporting Obligations

A comprehensive and fully referenced two separate reports (NFI and PSP) including detailed recommendations must be submitted at the end of the assignment. **The following reports or deliverables are mandatory.**

Deliverables	Time
2006 Inventory Analysis: Draft report and all data sets and analytical steps (scripts) and documentation	3 th weeks after the date of signing the contract
PSP data analysis, draft report, growth models, all data sets, scripts, output tables	6 th week after signing the contract
Final reports for both the Inventory and PSP analysis, incorporating any required amendments and updates to deliverable files, tables and scripts	8 th week after signing the contract

The consultant will present the major analysis and results through social media (skype) to the Fijian stakeholders if it deemed necessary. The possible visit for a training workshop would be additional, and arranged as and when required.

All reports should be in English. Both hard copy and soft copies of all reports should be submitted to REDD+ Unit, Ministry of Forestry. Electronic files of the reports should be in an editable format using Microsoft Word. All data (raw, primary and secondary) analyzed during the report writing should be submitted as electronic files editable with Microsoft Excel and R. Electronic files of maps for submission may be in native software format.

Annex C: Cost Estimate of Services, List of Personnel and Schedule of Rates

(1) Remuneration of Staff

Title	Name	Lump sum Payment for the service	Time spent	Total (USD) for this Lump sum Contract
Individual Consultant (Preparing a Report of National Forest Inventory 2006 and Report of Permanent Sample Plot Measurements)	Denis Alder	44 days @USD490/day USD 23,500 (including direct tax) and USD 1,940 VAT Reversal Charges (9%). Hence total USD 23, 500	Service provided during the period (March to 31 st May 2020)	USD 23, 500 including all applicable taxes (Direct and Indirect Tax)
Total contract price for a Lump Sum Contract: USD 23, 500				

Note: The consultant will responsible to pay direct tax and client will pay indirect tax applicable to this contract.

(2) Reimbursable: None

Title	Rate (USD)	Time spent	Total (USD)

Total Negotiated Contract Price: USD 23, 500 [USD twenty-three thousand five hundred including all applicable taxes].

(3) Physical Contingency: 0

The consultant will bear all kinds of direct taxes applicable in Fiji.

TOTAL COST USD 23, 500 _____

Physical Contingency None _____

CONTRACT CEILING USD 23, 500 _____



Expression of Interest

Date of Issue: 18.10.2019

CONSULTING SERVICES: DESIGNING A NATIONAL FOREST INVENTORY AND PERMANENT SAMPLE PLOTS AND CONDUCTING THE NFI

Readiness Fund of the FCPF – Grant No TF019204
Reference No. C.36/Fiji

Prepared for:

**The Republic of Fiji, Ministry of Forestry
REDD+ Unit**

Colo-i-Suva, Suva, Fiji
Tel.: +679-3320667
E-mail: reddplus.fj@gmail.com

Prepared by:



an e-GEOS (ASI / Telespazio) Company

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Universität Hamburg

DER FORSCHUNG | DER LEHRE | DER BILDUNG

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Brochure of University of Hamburg - World Forestry

1. SUBMISSION LETTER



GAF AG
Arnulfstr. 199 • 80634 Munich • Germany

The Fiji REDD+ Unit,
Ministry of Forestry
Attn: Villiame Rabici,
National Coordinator
Colo-i-Suva, Suva
Fiji

Munich, October 18th, 2019

Expression of Interest (EOI) for Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI

Reference No. C36/Fiji

Dear Sir,

We would hereby like to express our strong interest in being considered for an invitation to submit a proposal for the above mentioned assignment. We feel that we are particularly suited for the assignment as we have more than 30 years of experience in the development of institutional and associated technical consulting services for forest management, and more than 10 years of experience in FCPF REDD+ Readiness Program and REDD+ pilot projects in the tropics.

For the purposes of this assignment, GAF AG has associated with the Institute of World Forestry of the University of Hamburg (UHH), contributing their in-depth understanding of the aspects of designing and implementing statistically sound National Forest Monitoring Systems, including data analysis and reporting. We are convinced that both partners are offering the right experience in forest assessment and monitoring in order to successfully implement the assignment.

GAF AG and UHH World Forestry will form a consortium in case of success. GAF AG will act as the lead partner.

The current Forest Reference Level (FRL) quantification of net emissions for Fiji (1,636,804 metric tonnes of CO₂-equivalents per year) resulted in unacceptably high uncertainties with a confidence interval ranging from 953,458 to 2,444,030 tonnes of CO₂-equivalents. This renders significant improvements of the NFI design necessary. The identification and quantification of error sources showed that EO-based land-use change assessment is a major contributor to uncertainties. As the credibility of carbon credits is directly linked with the degree of uncertainties, the development of a tailored NFI system including quality control measures and uncertainty assessments is of uttermost importance. Based on our experience in Fiji, we will include existing surveys (PSP, NFI 2006) to the greatest possible extent and put great emphasis on cost optimization of the NFI concept. Our tailored NFI-approach will substantially reduce the risk that high transaction and implementation costs are associated with the NFMS and that REDD+ MRV becomes a cost trap.

In the following a short introduction to our team is presented. For more detailed information, please refer to the company and UHH World Forestry profiles and references included in this EOI.



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CEO: Dr. Sebastian Carl
Chairman of the supervisory board:
Massimo Comparini

Place of business: Munich
HRB 140 509
Commercial Register Munich
VAT-Nr.: DE 129 357 512

HypoVereinsbank
SWIFT (BIC): HYVEDE33XXX
IBAN:
€ DE06 7002 0270 3890 0903 61
US\$ DE14 7002 0270 0885 0270 16

Commerzbank
SWIFT (BIC): COBADE33
IBAN:

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In regards to the present request for EOI, we want to refer to our recent and ongoing projects that directly demonstrate our wide experience in the development and service provision for Earth Observation based forest monitoring systems in Africa, Asia and Europe (please refer to the attached project references). GAF has worked in a great number of World Bank funded projects worldwide.

GAF has a quality management system according to ISO EN DIN 9001 in place since 1995, and today is certified according to the revised standard ISO EN DIN 9001: 2015 by the European Institute for Certification of Quality Systems. The associated QA/QC procedures will be fully applied in this project.

Further information on GAF is available in the attached documents and from our website, www.gaf.de.

UHH World Forestry serves as an excellent academic institution, and as a hub for interdisciplinary research (forests and environment; Climate, Climate Change and Society), research synthesis, and foresight and knowledge transfer on forest ecosystem services, including forest carbon, worldwide. UHH World Forestry aims at the development of concepts, strategies and economic approaches for the sustainable management of forests. It strives to conduct its research, policy advice, capacity building, and all other activities at a high quality level, aiming at global relevance; and plays an important role in terms of providing excellent information and expert services through its publications and outreach activities, e.g., capacity strengthening, international conferences and experience exchange activities. UHH World Forestry creates adequate enabling environment, i.e., providing facilities, resources and other conditions for work that competent research scientists and experts have been willing to work with the Institute, either at the institute premises or in co-operative arrangements throughout the world.

UHH World Forestry has been actively engaged in the following research, development and demonstration (RD&D) areas:

- **Forest Inventory:** Assessment of condition and development of forest ecosystems by means of remote sensing data and terrestrial inventories
- **Sustainable Forest Management in the Tropics:** Investigations of forest growth, silvicultural treatments to enhance forest growth and to conserve biodiversity, Reduced Impact Logging
- **Forests and Climate:** Research and development in REDD+ (MRV, NFMS, capacity building), adaptation of forests to climate change, and carbon budgets of forests
- **Land Use:** Sustainable forestry within the context of landscape, forest use planning
- **Forest Restoration:** Rehabilitation of degraded forest sites
- **Plantation Forest:** Development of growth models for plantations, investment calculation
- **Tropical Forest Ecosystems:** Structure, function, and dynamics of tropical forest ecosystems
- **Forests and Regional Development:** Dynamic system-modelling of forest ecosystems and managed forests

Over recent years, UHH World Forestry offered its services for the first-rate research and development works in the area of REDD+, international forest policy, climate change mitigation and adaptation, applied silviculture, forest biometrics, spatial statistics, MRV systems and forest information systems, small-scale forestry (community/household based forest management), Forest Law Enforcement Governance and Trade (FLEGT), and international forest monitoring. The key research activities are focused on tropical forest ecosystems in Asia-Pacific, South and Southeast Asia, Southeast Africa and South America.

Current research includes the areas of (relevant to this call): forest resource assessments and monitoring; MRV systems for REDD+; participatory forest biodiversity monitoring systems; adaptation of forests to climate change; forest carbon stocks and dynamics; studies on forest yield and growth, silvicultural methods for the conservation of biological diversity and to increase the growth; improved forest harvesting and reduced impact logging and forest plantations. More information about UHH World Forestry can be obtained from

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Chairman of the supervisory board:
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IBAN:
€ DE06 7002 0270 3890 0803 61
US\$ DE14 7002 0270 0885 0270 16

Commerzbank
SWIFT (BIC): COBADE33
IBAN:

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All phases of the inventory are the subject of training sessions for the local experts. In a consecutive procedure, all working steps from field surveys to evaluations and quality control to reporting are covered. Through on-the-job training, the implementation of the entire inventory process is supported.

As a training organisation, our aim is to provide people with the necessary knowledge and skills to act independently and on their own responsibility. Therefore, we will use the analysis of inventory data and reporting as the ultimate milestone to ensure the sustainable, self-contained execution of the inventory. The evaluation will be carried out by local experts on the basis of the prepared SOPs and will be accompanied by us in word and deed.

From these brief profiles and the further information provided in this EOI, we hope to demonstrate that the project team comprises two strong and complementary partners offering an excellent range of services combined with both thematic and regional/local experience.

The engagement of national experts will enhance the effectiveness of the assignment and contributes to long-term sustainability of the REDD+ MRV in Fiji. Therefore, we have included two national experts in our study team.

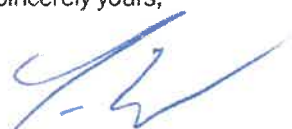
We thank you in advance for the attention you give to the material submitted. Our team would be most honoured to be invited to prepare a technical and financial proposal for the above mentioned assignment.

Should you have any questions or require further clarifications please do not hesitate to contact us. Our contact details are:

GAF AG, Arnulfstr.199, 80634 Munich, GERMANY
 Tel.: +49-89-121528-0, Fax: +49-89-12152879, Email: info@gaf.de

We look forward to hearing from you.

Sincerely yours,



Dr. Sebastian Carl
 CEO

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 80634 Munich
 Germany
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 Fax: +49 89 12152879
 E-mail: info@gaf.de
 www.gaf.de

Dr. Sebastian Carl
 Chairman of the Supervisory Board
 GAF AG

Place of business: Munich
 HRB 149 800
 Commercial Register of the
 District Court of Munich

Identification:
 SWIFT BIC: HYVEDE33XXX
 DE05 7000 0270 0000 0000 0000
 Use SWIFT BIC: HYVEDE33XXX

Identification:
 SWIFT BIC: COBADE33
 BIC

2. PRESENTATION OF THE PROJECT TEAM



2.1. GAF AG

2.1.1 KEY FACTS

Company name:	GAF AG (AG stands for public limited company in German)		
CEO:	Dr. Sebastian CARL		
Supervisory Board:	Massimo Comparini (Chairman), Dr. Peter Volk (Vice Chairman), Letizia Colucci		
Type of Business:	Management and consultancy services; institutional strengthening and know-how transfer, information systems; earth observation data, remote sensing; geo-information products and services; geo-software development		
Founded:	1985		
Turnover:	2018 EUR 28,102,000	2017 EUR 22,477,000	2016 EUR 29,646,000
Staff	220 professionals		
Registration:	HRB 14 05 09, Commercial Register Munich VAT Reg.No.: DE 129 357 512 Affiliated to: e-GEOS S.p.A. a Telespazio/ASI company, Matera, Italy member of Leonardo (Finmeccanica)/Thales Space Alliance		
Company Addresses:	GAF AG (headquarters): Arnulfstrasse 199 80634 Munich, Germany Tel.: +49 89 121528-0, Fax: +49 89 121528-79 E-mail: info@gaf.de , www.gaf.de GAF Branch Neustrelitz: Kalkhorstweg 53 17235 Neustrelitz, Germany Tel.: +49 3981 4883-0, Fax: +49 3981 4883-20		

2.1.2 BUSINESS SYNOPSIS

Geo-data, technology, solutions, products:

GAF offers a comprehensive end-to-end service portfolio: earth observation data, geo-products, integrating space technologies (satellite communication, earth observation and positioning) into real world applications. This includes Software and -systems, technology consulting and institutional strengthening.

Development, sustainability, compliance:

GAF works in the fields of natural resources and raw materials, environment and water, forestry and agriculture, infrastructure and emergency management. We provide sustainable solutions in resources management, inventories, monitoring and planning - based on sound management practice, involving leading experts and know-how transfer expertise.

2.1.3 PRODUCTS & SERVICES

Information Systems

A central pillar of our work is the integration of remotely sensed data, survey data, web services and spatial databases into an integrated GIS environment, with these ranging from stand-alone to enterprise-wide solutions. Specialized and individually tailored application development (GIS, RDBMS, web-solutions) provides the key to the successful system integration, and helps ensure the sustainable and efficient use of information systems.

Management Consulting

GAF management consulting services have earned the company a widely respected reputation. As a partner for project design, management and implementation services in the fields of geo-information, satellite remote sensing and IT consultancy, GAF advises and supports private and public clients worldwide.

Geo-data Store

Suitable and reliable geo-data forms the essential basis for a huge variety of applications. The company can produce tailor-made spatial databases that fulfil specific customer requirements. We provide raw satellite images or off-the-shelf raster and vector data products, available as ready-to-use earth observation imagery, digital elevation models and land cover & land use maps. Our customer service provides all the necessary support in searching for, assessing and selecting geo-data that caters for specific needs.

Data Processing

Efficient and reliable geo-data processing is the backbone of a wide range of services in numerous fields of application. Raster data processing services are available using data from dedicated data providers or from the customer. We offer complete value-adding services, ranging from the procurement of source data to semi-automated image data analysis for specific applications.

24/7/365 Service: Rush Data Access and Rapid Mapping

Since 2012, GAF has been continuously providing a 24/7/365 emergency response service as part of the operational "Emergency Management Service - Rapid Mapping" COPERNICUS Service, in which we generate and supply time-critical information to national civil protection authorities. For its industrial partners, GAF offers services that are tailored to requirements and customised in terms of scope, scale, level of detail and response time. GAF's emergency response service portfolio thus contains a fully operational service for supporting disaster management, ranging from short response time products to long-term damage analyses.

Software Development

Our software development focuses on GIS and image processing tools, customised applications, enterprise-wide GIS solutions and the development of spatial data infrastructures (SDI). In order to meet customer requirements, we apply a wide range of geospatial technologies, programming languages, development frameworks, and database management systems that reflect various IT environments. Compliance with international standards (OGC, ISO, INSPIRE) and quality control procedures are key elements of our solution development process.

Integrated Services

GAF provides innovative and comprehensive services for complex projects and needs by implementing and combining technologies such as satellite communication, satellite navigation, earth observation and geo-information.

2.2. UNIVERSITY OF HAMBURG

2.2.1 KEY FACTS

Name of the organization	University of Hamburg, Institute for World Forestry
Institution	University/Research institution
Legal structure	Public
Department	World Forestry
Full postal address	Leuschnerstr. 91, 21031 Hamburg
Country	Germany
Telephone	+49 40 73962 100
Fax	+49 40 73962 199
Email	weltforst@uni-hamburg.de
Website	https://www.biologie.uni-hamburg.de/en/forschung/oekologie-biologische-ressourcen/weltforstwirtschaft.html
Total staff	21
Year established	1919
Experience in target region	17 years
Experience of activities relevant to this assignment	30 years

2.2.2 BUSINESS SYNOPSIS

Education and training:

UHH World Forestry sees itself as a training organization that imparts the basic knowledge and skills required to independently deal with specialist issues. We have achieved successful capacity building above all in the areas of forest inventories, statistics, REDD+ MRV-systems, and sustainable forest management. We have also published textbooks on forest inventories, which we use for teaching.

Research and development:

UHH World Forestry is active in the field of method development for forest inventories, C-budgeting, inventory optimization and uncertainty analysis. Here we develop scientific basics and applied solutions for practical implementation. A strong focus of our work is the development of combined in-situ/ EO inventory systems, permanent inventories, the development of error budgets for uncertainty analysis and the optimization of inventories from the point of view of cost efficiency. FCPF and IPCC measurement, reporting and verification are also our expertise.

2.2.3 PRODUCTS & SERVICES

Capacity building

We provide capacity building in the fields of forest resource assessments, including field assessments, inventory statistics, data analysis and reporting, implementation of IPCC guidelines for AFOLU, development and implementation of MRV systems, and participatory forest resource assessments.

Research and development

UHH World forestry offers research and development services for applied methods of forest inventories, including targeted combined in-situ/EO inventory concepts, optimization of forest surveys, development and provision of statistical analysis software including database design and quantification of emission and removal factors.

Strategic development

We analyze current assessment systems and provide consultancy for methodological improvements, human capacity development, infrastructural measures, and organizational structures.

Greenhouse gas inventories

We develop concepts for GHG inventories based on FCPF and IPCC specifications and providing operational MRV systems. Different gases and pools are taken into account. In connection with inventory statistical approaches, we were able to develop systems for measurements, reporting and verification for Fiji, among others, as part of the implementation of REDD+.

Nationally Determined Contributions (NDCs)

We support countries in formulating their NDCs. Here we concentrate on the forestry and agricultural sector. Our experience in the establishment and management of forest plantations and the sustainable use of forests helps us to integrate the role of forests as carbon sinks in a targeted role in the NDCs. One example is our contribution to the development of the Low Emission Development Strategy for Fiji.

Carbon offsets along the forest-wood products chain

Emission reductions can be caused not only by forests but also by the energetic and material use of timber. We have developed a system that maps all carbon effects along the forest-wood chain based on life-cycle analyses. We have carried out a holistic analysis of the carbon effects for various German federal states using this approach. For forestry operations, we have developed our own software package that correlates C losses from timber harvesting with emission reductions from the use of wood.

Software development

We have relevant experience in the development of evaluation software for forest inventories. Our software integrates different data sources (e.g. EO, field surveys, questionnaires, DTMs) through statistical approaches. An innovative field of application is the use of neural networks and deep learning approaches. Our software solutions are based on open-source software and thus secure manufacturer-independent applications.

3. LETTER OF ASSOCIATION



Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

Prof. Dr. M. Köhl • UHH • INSTITUT FÜR HOLZWISSENSCHAFTEN
LEUSCHNERSTR. 91 • D-21031 HAMBURG

16.10.2019

Fakultät für Mathematik, Informatik und
Naturwissenschaften

Fachbereich Biologie

Institut für Holwissenschaften-Weltforstwirtschaft

Prof. Dr. Michael Köhl

TO WHOM IT MAY CONCERN

Tel.: 040-73962-100
Fax: 040-73962-199
E-Mail: michael.koehl@uni-hamburg.de

Letter of Association

Project: Designing a National Forest Inventory and Permanent Sample Plots
Reference No. C36/Fiji

I hereby confirm that University of Hamburg –World Forestry has agreed to associate exclusively with

GAF AG, Arnulfstr. 199, 80634 Munich, Germany

to provide consultancy services with respect to the above mentioned tender. University of Hamburg is committed to working together with GAF AG in a consortium in case our joint proposal should be successful. I also confirm that GAF AG will act as the lead firm in this association and will represent the consortium in matters related to the above mentioned tender.

Yours sincerely,

Prof. Dr. Michael Köhl

4. ELIGIBILITY CRITERIA

This Chapter addresses the eligibility criteria as requested in the Call for EOI.

4.1 Registration Certificate

Handelsregister B des Amtsgerichts München	Abteilung B Wiedergabe des aktuellen Registerinhalts Abruf vom 04.09.2019 10:54	Nummer der Firma: HRB 140509
	Seite 1 von 2	

1. Anzahl der bisherigen Eintragungen:

13

2. a) Firma:

GAF AG

b) Sitz, Niederlassung, inländische Geschäftsanschrift, empfangsberechtigte Person, Zweigniederlassungen:

München

Geschäftsanschrift: Arnulfstr. 199, 80634 München

Zweigniederlassung/en unter gleicher Firma mit Zusatz:

Zweigniederlassung Neustrelitz, 17235 Neustrelitz,

Geschäftsanschrift: Kalkhorstweg 53, 17235 Neustrelitz

c) Gegenstand des Unternehmens:

Akquisition, Vertrieb und Analyse von Geo-Informationen und darauf aufbauenden Dienstleistungen. Geo-Informationen sind sämtliche bildhaften und nicht bildhaften Datensätze, die von Erdbeobachtungssatelliten, Flugzeugen, bodengestützten Systemen oder aus sonstigen Materialien wie Karten erhoben werden. Darauf aufbauende Dienstleistungen bestehen aus multidisziplinären geowissenschaftlichen und IT-orientierten Consulting Leistungen, die weltweit erbracht werden, und die Lieferung/Integration von Hard- und Software, Training, sowie institutionelle Beratung umfassen. Neben dem Vertrieb von Informationsprodukten werden anwendungsorientierte Software-Lösungen und Produkte die GIS- Datenbank-, Satellitennavigations-, Kommunikations-, und Internet-Technologien genutzt, entwickelt und vermarktet.

3. Grund- oder Stammkapital:

256.000,00 EUR

4. a) Allgemeine Vertretungsregelung:

Ist nur ein Vorstandsmitglied bestellt, so vertritt es die Gesellschaft allein. Sind mehrere Vorstandsmitglieder bestellt, so wird die Gesellschaft durch zwei Vorstandsmitglieder oder durch ein Vorstandsmitglied gemeinsam mit einem Prokuristen vertreten.

b) Vorstand, Leitungsorgan, geschäftsführende Direktoren, persönlich haftende Gesellschafter, Geschäftsführer, Vertretungsberechtigte und besondere Vertretungsbefugnis:

Vorstand: Dr. Carl, Sebastian Robert, München, *05.04.1966

5. Prokura:

Gesamtprokura gemeinsam mit einem Vorstandsmitglied oder einem anderen Prokuristen:

Bamer, Frithjof, Neustrelitz, *12.12.1971

Dr. Häusler, Thomas, München, *14.10.1956

Lippert, Andreas Joachim, München, *24.09.1968

Handelsregister B des Amtsgerichts München	Abteilung B Wiedergabe des aktuellen Registerinhalts Abruf vom 04.09.2019 10:54	Nummer der Firma: HRB 140509
	Seite 2 von 2	

Dr. Relin, Axel, Kaufbeuren, *27.10.1960
 Dr. Saradeth, Stefan, München
 Zeeb, Joachim Alexander, München, *28.02.1969

6. a) Rechtsform, Beginn, Satzung oder Gesellschaftsvertrag:

Aktiengesellschaft
 Satzung vom 07.09.2001
 Zuletzt geändert durch Beschluss vom 07.08.2014

b) Sonstige Rechtsverhältnisse:

Entstanden durch formwechselnde Umwandlung der "Gesellschaft für angewandte Fernerkundung mbH GAF" mit dem Sitz in München (Amtsgericht München HRB 66356).
 Die Euromap Satellitendaten-Vertriebsgesellschaft mbH mit dem Sitz in Neustrelitz (Amtsgericht Neubrandenburg HRB 4038) ist auf Grund des Verschmelzungsvertrages vom 20.02.2014 mit der Gesellschaft als übernehmendem Rechtsträger verschmolzen.

7. a) Tag der letzten Eintragung:

06.08.2018

4.2 TIN Number and Tax Compliance Certificate



Finanzamt München

Finanzamt München, 80275 München

Firma
GAF AG
Arnulfstr. 199
80634 München

Bitte Identifikationsnummer(n) und Aktenzeichen angeben: 12089 1252-0

Identifikationsnummer

Unser Aktenzeichen

Durchwahl:

Bearbeiter(in):

Zimmer

Datum

143 / 100 / 60357

7190

Frau Baierl

2230

19.07.2019

K72

für Firma GAF AG, Arnulfstr. 199, 80634 München

Bescheinigung

die o.a. Gesellschaft ist beim Finanzamt München unter der ebenfalls o.a. Steuernummer erfasst.

Derzeit bestehen bei der Firma keine Steuerrückstände.

The corporation is not in delay with any taxpaying at all.

Mit freundlichen Grüßen

Dienstsiegel

Baierl



Datenschutzhinweis

Informationen über die Verarbeitung personenbezogener Daten in der Steuerverwaltung und über Ihre Rechte nach der Datenschutz-Grundverordnung sowie über Ihre Ansprechpartner in Datenschutzfragen entnehmen Sie bitte dem allgemeinen Informationsschreiben der Finanzverwaltung. Dieses Informationsschreiben finden Sie unter www.finanzamt.de (unter der Rubrik „Datenschutz“) oder erhalten Sie bei Ihrem Finanzamt.

Hausanschrift
Katharina-von-Bora-Str. 4
80333 München
Telefax:
089 1252 - 7777

Haltestellen:

Kreditinstitut
Sundesbank München
Bayerische Landesbank
HypoVereinsbank München

S-Bahn: Stachus U-Bahn: (U2) Königsplatz
Straßenbahn: (Linien 27, 28) Ottostrasse

BIC
MARKDEF1700
BYLADEMM
HYVEDEMM

E-Mail: poststelle-abteilung3@famiuc.bayern.de
Internet: www.finanzamt-muenchen.de

4.3 VAT Registration Certificate



**Bundeszentralamt
für Steuern**

POST-
ANSCHRIFT Bundeszentralamt für Steuern, 66739 Saarouis

Firma
GAF AG
Arnulfstr. 199
80634 München

HAUSANSCHRIFT Ahornweg 1-3, 66740 Saarouis
BEARBEITET VON Servicegruppe Umsatzsteuer-Kontrollverfahren
St II 701/St I 915
TEL +49 (0) 228 406 1222
FAX +49 (0) 228 406 3801
E-MAIL kontakt-vergabe@bzst.bund.de
INTERNET www.bzst.bund.de

BETREFF Erteilung einer Umsatzsteuer-Identifikationsnummer
BEZUG
ANLAGEN Hinweise zum Umsatzsteuer-Kontrollverfahren
GZ (bei Antwort bitte angeben) St II 701/St I 915 S 7427-c DE129357512
DATUM 07.07.2014

Sehr geehrte Damen und Herren,

die Ihnen zugeteilte Umsatzsteuer-Identifikationsnummer lautet: DE129357512

Sie ist gültig mit Wirkung vom 09.10.1992.

Folgende Daten werden im Rahmen des Bestätigungsverfahrens den zuständigen Behörden der übrigen Mitgliedstaaten zugänglich gemacht:

GAF AG

Arnulfstr. 199
80634 München

Mit freundlichen Grüßen

Bundeszentralamt für Steuern

Dieses Schreiben wurde automatisch erstellt und ist daher ohne Unterschrift gültig.

01EWZ204 12030014

Gleitende Arbeitszeit
Kernzeit:
Mo-Do 08.00 - 15.00 Uhr
Fr 09.00 - 13.00 Uhr

4.4 Certification of no Pending Legal Action Against Company

Bundesamt für Justiz		Bonn, den 10.09.2019
Bundesamt für Justiz, 53094 Bonn GAF AG Arnulfstr. 199 80634 München		Name (Firma)/Business name/Raison sociale ou dénomination: GAF AG Rechtsform/Type of business ownership/Forme juridique: Aktiengesellschaft Registergericht/Register court/Tribunal chargé de la tenue du registre: Amtsgericht München Registernummer/Register number/Numéro d'immatriculation: HRB 140809 Sitz/Location of registered office/Siège social: Arnulfstr. 199, 80634 München Anschrift/Address/Adresse: Arnulfstr. 199, 80634 München
Verarbeitungsdaten: 235404992/277023117/10092019115729000/1/ PAP/KPU/N		
Auskunft aus dem Gewerbezentralregister nach § 150 GewO über GAF AG		
Geschäftsnummer: Verwendungszweck:		
		
Keine Eintragung (No record/Néant)		
Bitte prüfen Sie die Angaben. Sollten Sie Unrichtigkeiten feststellen, teilen Sie diese bitte dem Bundesamt für Justiz möglichst unverzüglich – ggf. telefonisch – mit. Bundesamt für Justiz, Adenauerallee 99-103, 53119 Bonn Telefon: 0228 99410 40, Telefax: 0228 99410 5050 Diese Auskunft wurde automatisch erstellt und ist ohne Unterschrift gültig.		

4.5 Certification that Company is not Insolvent

AMTSGERICHT MÜNCHEN Insolvenzgericht

Amtsgericht München •
Insolvenzgericht • 80325 München



Firma
GAF AG
Arnulfstr. 199
80634 München

☎ - Durchwahl: (089) 5597-2083
☎ - Vermittlung: (089) 5597-06
Telefax: (089) 5597-2777

Datum:
27.03.2019

Auskunft aus dem Insolvenzregister betreffend

Firma
GAF AG
Arnulfstr. 199
80634 München
HRB 140509

- X Es liegt kein Eintrag im Insolvenzregister beim Amtsgericht München vor.
- X Es liegt kein Eintrag gemäß § 26 Abs. 2 InsO (Abweisung mangels Masse) beim Amtsgericht München vor.
- ☐ Derzeit ist kein laufendes Verfahren anhängig, ein eröffnetes Verfahren wurde im Monat/Jahr abgeschlossen.




Seibt, Jsekr.
Urkundsbeamter der Geschäftsstelle



Briefanschrift:
Amtsgericht München • 80325 München
Hausanschrift:
Infantenstr. 5
80797 München
Internet: www.justiz.bayern.de

Wir haben gleitende Arbeitszeit. Am besten erreichen Sie uns während der Kernzeiten
Mo. – Fr. 8.30 – 11.30 Uhr,
Do. 13.00 – 14.30 Uhr.

Bankverbindung:
Landesjustizkasse Bamberg
Konto-Nr. 24919 BLZ 700 500 00
Bayerische Landesbank München

Verkehrsanbindung:
 U2 Haltest.
Josephplatz, anschl.
Bus 53, Haltest. Infantenstr Nord; Tram Linien 20 o. 21, Haltest. Lothstr

4.5 Remark



Prof. Dr. M. Köhl • UH • INSTITUT FÜR HOLZWISSENSCHAFTEN
LEUSCHNERSTR. 91 • D-20101 HAMBURG

19.10.2019

Fakultät für Mathematik, Informatik und
Naturwissenschaften

Fachbereich Biologie

Institut für Holwissenschaften-Weitforstwirtschaft

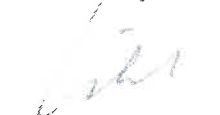
Prof. Dr. Michael Köhl

Tel.: 040-73962-100
Fax: 040-73962-199
E-Mail: michael.koehl@uni-hamburg.de

Project Reference No. C36/Fiji

The University of Hamburg is a non-profit public cooperation represented by Prof. Dr. Dieter Lenzen, Mittelweg 177, 200148 Hamburg, Germany. Referring to the Section 2 (a) (Eligible Criteria) of the call for Expression of Interest (EOI) for Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI (Reference No. C36/Fiji), we state that University of Hamburg is not registered as a company or business. The documents mentioned in eligible criteria Section (2 A) (i.e. Company Registration Certificate, Tax Identification Number, Tax Compliance Certificate, Copy of VAT Registration Certificate, No pending legal action against the Company, and Not insolvent or under bankruptcy proceedings), are therefore not applicable and cannot be issued for a public University.

Yours sincerely,



Prof. Dr. Michael Köhl

5. SELECTED REFERENCES FOR THE PROJECT

Relevant projects carried out by the consortium that best illustrate qualifications for the proposed project and sorted by relevance to this project. Further details of the projects are given on the following pages.

Ref. N°.	Partner	Title of the project	Country	Time Period
1	UHH	Establishment of a Reference Level (FRL) for Forest Land and Development of a System for Monitoring, Reporting and Verifying (MRV) Carbon Emission Reductions from Forests for Fiji's National REDD+ Programme	Fiji	04.2017-02.2019
2	UHH	SFM approaches to foster FLEGT and REDD+ interactions (SAFARI)	Indonesia, Suriname/Guyana	09.2015-12.2018
3	UHH	Biodiversity- and carbon assessment and -monitoring in South Sumatra, Indonesia (BICAMSu)	Indonesia	2015- 2016
4	GAF	Capacity for Copernicus REDD+ and Forest Monitoring Services (REDDCopernicus)	World	01.2019 - 02.2021
5	UHH	Assessment of carbon offsets by forestry and timber utilization in the German Federal state of Rhineland–Palatinate	Germany	10.2017-12.2018
6	GAF	Supporting Developing Countries in Cloud-Based Forest Monitoring for REDD+	World	10.2018 – 11.2019
7	GAF	EOMonDis - EO based Monitoring of Forest Disturbances	World	02.2016 – 07.2019
8	GAF	Ecuador: Provision of Consulting Services for Early Warning System for Deforestation and Fires	Ecuador	07.2018 - 03.2019
9	UHH	Ensuring long-term productivity of lowland tropical rainforests of the Caribbean	Suriname, Guyana, Belize and Trinidad & Tobago	2015-2018
10	GAF	EOWORLD2 – Support to REDD in Latin America	Argentina, Chile	04.2014 - 02.2016
11	GAF	GEOFORAFRI	Central Afr. Rep.; Cameroon	10.2013 - 09.2014
12	GAF	Development of integrated monitoring systems for REDD+ in the SADC region	SADC	01.2012 – 11.2015
13	GAF	REDDAF - Stimulating Forest Monitoring Services REDD	Cameroon; Central African Republic	01.2011 - 12.2013
14	GAF	GMES Service Element Forest Monitoring for REDD+	Republic of Congo, Gabon	12.2009 - 07.2013
15	GAF	GMES Service Element Forest Monitoring Stage 1 and 2	World	03.2003 - 05.2009
16	UHH	Sustainable land management in south-western Madagascar (SuLaMa)	Madagascar	2011- 2016
17	UHH	Report State of European Forests	Europe	01.2017-10.2020

Reference n° 1 (UHH)

Assignment name: Establishment of a Reference Level (FRL) for Forest Land and Development of a System for Monitoring, Reporting and Verifying (MRV) Carbon Emission Reductions from Forests for Fiji's National REDD+ Programme	Approx. value of the contract: EUR 710,000
Country: Fiji	Duration of assignment (months): 23
Name of Client: Ministry of Forestry, Fiji	Total No of staff-months of the assignment:
Address:	Approx. value of the services provided by your firm under the contract:
Start date (month/year): 04/2017 Completion date (month/year): 02/2019	No of professional staff-months provided by associated Consultants:
Name of associated Consultants, if any: Remote Sensing Solutions GmbH, Germany SPC – GSD Geoscience Division (former SOPAC), Fiji Fiji National University, Fiji Intend Geoinformatik GmbH, Kassel, Germany	Name of senior professional staff of your firm involved and functions performed: Prof. Dr. Michael Köhl Dr Prem Raj Neupane Dr Philip Mundhenk Dr Volker Muess
Narrative description of Project: During this assignment a National Forest Monitoring System (NFMS) has been developed and established. One of the major components of the NFMS was to establish a Forest Reference Level (FRL) for forest land and development of a system for Monitoring, Reporting and Verifying (MRV) carbon emission reductions from forests in Fiji. The MRV system utilized the IPCC 2003 GPG and IPCC 2006 updates for quantification of activity data using the approach 3; and Emission Factors (EF) / Removal Factors (RF) that conform to the IPCC tier 2 / 3. The NFMS also cover monitoring of biodiversity and socio-economic indicators in order to satisfy multiple national and international reporting requirements.	
Description of actual services provided by your staff within the assignment: <ul style="list-style-type: none"> - Situational analysis, data revision and final work plan development - Methodology Development for FRL - FRL construction - Methodology development for NFMS and MRV - Implementation of a test inventory - NFMS establishment - Database development - Set of SOPs that cover all work aspects of the consultancy and include the QA / QC measures - Capacity development - Capacity development strategy for MRV, including immediate trainings done in the consultancy implementation, as well as a future development plan - Guidance on the nesting of sub-national MRV and FRL within national MRV and FRL 	

Reference n°2 (UHH)

Assignment name: SFM approaches to foster FLEGT and REDD+ interactions (SAFARI)	Approx. value of the contract: EURO 900,000
Country: Indonesia, Suriname/Guyana	Duration of assignment (months): 40
Name of Client: Federal Ministry of Food and Agriculture, Germany (BMEL) European Forest Institute, Joensuu (EFI)	Total No of staff-months of the assignment: 60
Address: BMEL, Rochusstraße 1, 53123 Bonn, Germany EFI, Yliopistokatu 6B, 80100 Joensuu, Finland	Approx. value of the services provided by your firm under the contract: EUR 544,000
Start date (month/year): 09.2015 Completion date (month/year): 12.2018	No of professional staff-months provided by associated Consultants:
Name of associated Consultants, if any: European Forest Institute (EFI)	Name of senior professional staff of your firm involved and functions performed: Prof. Dr. Michael Köhl Dr Prem Raj Neupane
Narrative description of Project: The overall objective of this project was to identify how a holistic Sustainable Forest Management (SFM) concept interlinks and supports REDD+ and FLEGT initiatives, to analyze their current and possible future impacts, foster their operability on all levels and to demonstrate the multiple benefits of SFM.	
Description of actual services provided by your staff within the assignment:	
Scientific studies and reports: <ul style="list-style-type: none"> - National Forest Information System methodology, standards and applicability to other country cases - Options for integrating reporting requirements for REDD+ and SFM into a National Forest Information System - Standards and requirements of reporting on SFM, NFI, FLEGT and REDD+ - Simulation studies on integration options: lessons from case studies in training sites - Report on lessons learned on impacts from and synergies between REDD+, FLEGT & SFM 	
Scientific publications <ul style="list-style-type: none"> - Neupane, P. R., Wiati, C. B., Angi, E. M., Köhl, M., Butarbutar, T., Reonaldus, Gauli, A. 2019. How REDD+ and FLEGT-VPA processes are contributing towards SFM in Indonesia- the specialists' viewpoint. International Forestry Review (Accepted). - Köhl, M., Neupane, P. R., Mundhenk, P. 2019. REDD+ Measurement, Reporting and Verification – a Cost Trap? Ecological Economics (in press). - Köhl, M., Ehrhart, H.-P., Knauf, M., Neupane, P.R., 2019. A viable indicator approach for evaluating sustainable forest management in terms of carbon emission and removals. Ecological Indicators (in press). 	

Reference n°3 (UHH)

Assignment name: Biodiversity- and carbon assessment and -monitoring in South Sumatra, Indonesia (BICAMSu)	Approx. value of the contract: EUR 90,000
Country: Indonesia Location within country: South Sumatra	Duration of assignment (months): 12
Name of Client: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	Total No of staff-months of the assignment:
Address: Dag-Hammarskjöld-Weg 1 - 5 65760 Eschborn	Approx. value of the services provided by your firm under the contract:
Start date (month/year): 11.2015 Completion date (month/year): 10.2016	No of professional staff-months provided by associated Consultants:
Name of associated Consultants, if any:	Name of senior professional staff of your firm involved and functions performed: Prof. Dr. Michael Köhl Dr Prem Raj Neupane Dr Philip Mundhenk
Narrative description of Project: The main objectives of the BiCaMSu project were to develop a guideline to setup a Biodiversity Information System for, and to design a Participatory Forest Biodiversity Monitoring System (PFBMS) at Forest Management Unit (FMU) level in South Sumatra. The PFBMS assists stakeholders to develop and select highly rewarding/ high-performance criteria and indicators (C&I), and to develop a system to monitor C&I integrating the system into a FMU Forest Management Plan (FMP). The system is a vital component of the FMU FMP within a broader framework of adaptive and responsible forest management.	
Description of actual services provided by your staff within the assignment: Studies and Reports <ul style="list-style-type: none"> - How to setup a Biodiversity Information System (BIS) for South Sumatra- A guideline - Development of forest biodiversity Indicators for a participatory forest biodiversity monitoring system in South Sumatra- A methodological guideline Scientific publications <ul style="list-style-type: none"> • Neupane, P.R., Gauli, A., Mundhenk, M.V., Köhl, M., 2019. Development of participatory forest biodiversity monitoring approach for South Sumatra. Submitted. 	

Reference n°4 (GAF)

Assignment name: Capacity for Copernicus REDD+ and Forest Monitoring Services (REDDCopernicus)	Approx. value of the contract: 2,680,000 EUR equiv. to 2,961,390 US\$
Country: World	Duration of assignment (months): 38.00
Name of Client: European Commission	Total No of staff-months of the assignment: 260.00
Address: Research Executive Agency (REA) Monika Kacik Place Rogier 16 B-1049 Brussels Belgium Email: Monika.KACIK@ec.europa.gov	Approx. value of the services provided by your firm under the contract: 871,000 EUR equiv. to 1,150,000 US\$
Start date (month/year): 01/2019 Completion date (month/year): 02/2022	No of professional staff-months provided by associated Consultants: 173.00
Name of associated Consultants, if any: JRC, SIRS, Wageningen University, VTT	Name of senior professional staff of your firm involved and functions performed: - Project Coordinator: T. Haeusler - Task Manager: S. Gomez
Narrative description of Project: <p>The overall aim of REDDCopernicus focuses heavily on the REDD+ policy process and the proposal for the foundations of a European capacity for an operational Copernicus REDD+ Forest Monitoring Programme. This requires the co-ordination and consolidation of the European Capacity for EO based Forest Monitoring (EO FM) with relevant stakeholders, International Agencies, Research Community and Private Sector. As the Call also required identification of research gaps in forest monitoring for Europe, this is as well included as a component. The overall aim is fulfilled by meeting the following specific objectives:</p> <ol style="list-style-type: none"> 1. To review and synthesise the key Policy drivers and existing work/capacities in Europe related to operational and pre-operational EO FM; this includes also key institutional arrangements pertinent for the implementation of a Copernicus REDD+ and Forest Monitoring Service. 2. To coordinate results and experiences from existing REDD+ and Copernicus programmes for the identification of infrastructural and research gaps for EO FM on different scales (global to local) resulting in the definition of future Research and Development (R&D) Programmes addressing key gaps and priorities and ensuring complementarity and sustainability of existing programmes. 3. To define an end-to-end operational system for Core and Downstream REDD+ Services which includes organisational and technical specifications; an important component are the products and services that can be made processed and/or available via a Copernicus Data and Information Access Service (C-DIAS) Platform. 4. To raise awareness and showcase the European capacities in EO FM as well as related user uptake in countries via learning exercise/studies in developing countries in different geographical regions (Asia, Africa, South America). 5. To disseminate, communicate and exploit the results of the project to a wide stakeholder audience to ensure that the overall impact and uptake of the project is optimised. 6. To recommend a framework for a Copernicus REDD+ Service/programme to establish long-term European 	

Capacity and leadership in this domain.

Description of actual services provided by your staff within the assignment:

The REDDCopernicus Coordination and Support Activities have the aim to coordinate a consolidation of a European Capacity for EO based Forest Monitoring (EO FM) with relevant stakeholders, International Agencies, Research Community and Private Sector and to identify gaps for research and development. The provided services comprise components that combine an understanding of the policy and user requirements as well as the institutional and technical challenges to be solved for successful implementation. In order to cover all aspects, the project work has been designed along five main Tasks: Assessment of Requirements and Capacities, User Engagement and Awareness Raising, Consolidation of CopernicusREDD+ and Forest Monitoring Services and Research and Infrastructure Gaps. As well Project Coordination and Partner Management, Liaison with the Research and Executive Research Agency (REA), Data Management, Human and Technical Resources Management, Quality Management, Quality Assurance and Project Reporting are part of the delivered services.

Reference n°5 (UHH)

Assignment name: Assessment of carbon offsets by forestry and timber utilization in the German Federal state of Rhineland-Palatinate	Approx. value of the contract: EUR 100,000
Country: Germany Location within country: Rhineland-Palatinate	Duration of assignment (months): 15
Name of Client: Ministry of the Environment, Energy, Food and Forestry Rhineland-Palatinate	Total No of staff-months of the assignment: 17 months
Address: Kaiser-Friedrich-Straße 1 55116 Mainz, Germany	Approx. value of the services provided by your firm under the contract: EUR 100,000
Start date (month/year): 10/2017 Completion date (month/year): 12/2018	No of professional staff-months provided by associated Consultants:
Name of associated Consultants, if any:	Name of senior professional staff of your firm involved and functions performed: Dr. Volker Mues Prof. Dr. Michael Köhl
Narrative description of Project: The study quantified the carbon offsets resulting from the storage capacity of forests through forest growth, timber harvesting and the use of harvested wood for energy and material purposes. In addition to the current carbon offsets, the potential carbon offsets were forecast for a period up to 2100 using different scenarios of forest management and wood use.	
Description of actual services provided by your staff within the assignment: <ul style="list-style-type: none"> - Development of a software for the simulation of forest growth under different silvicultural objectives - Development of a software for the simulation of the use of wood under different political objectives - Integration of the data of the German National Forest Inventory into the system - Integration of national wood utilization statistics - Calculation of carbon offsets under different scenarios 	

Reference n°6 (GAF)

Assignment name: Supporting Developing Countries in Cloud-Based Forest Monitoring for REDD+	Approx. value of the contract: 150,000 EUR equiv. to 171,000 US\$
Country: Malawi	Duration of assignment (months): 14.00
Name of Client: ESA ESRIN	Total No of staff-months of the assignment: 7.90
Address:	Approx. value of the services provided by your firm under the contract: 150,000 EUR equiv. to 171,000 US\$
Start date (month/year): 10/2018	No of professional staff-months provided by associated Consultants: 0.00
Completion date (month/year): 11/2019	
Name of associated Consultants, if any:	Name of senior professional staff of your firm involved and functions performed: <ul style="list-style-type: none"> - Project Coordinator: T. Haeusler - Technical Project Management: P. Navratil
Narrative description of Project: <p>The overall goal of the current Project is to enable Stakeholders and Users from developing countries to create sophisticated applications for forest monitoring and assessment within an innovative cloud-based Front Office which unifies the Big Data functionalities of the C-DIAS back storage with already verified processing algorithms for tropical dry forest mapping. The overall goal will be accomplished through a set of specific technical objectives:</p> <ul style="list-style-type: none"> - To provide Users from developing countries with improved access and processing methods for cloudbased forest monitoring, based on Sentinel-2 data; - To promote the utility and capabilities of Sentinel-2 dense time series data stacks for monitoring of tropical dry forests; - To develop a web based Graphical User Interface (GUI) to select, pre-process and classify Sentinel- 2 imagery; - To assure proper User uptake of the value added services through capacity building activities related to testing, validation and training on the developed System. - By achieving the above mentioned objectives, an interface between state-of-the art processing capabilities and Users in developing countries will be developed which brings together data, algorithms and processes within the same system environment. The technical implementation of the Front Office will provide access, processing functionalities and exploitation of Sentinel-2 data via the C-DIAS platform, whereas the preprocessing and mapping tasks will be hosted on the C-DIAS by bringing the algorithms to the data. Thus, the Users will be enabled to select, process and classify EO-derived information on the cloud, based on pre-defined tools for forest monitoring. 	
Description of actual services provided by your staff within the assignment: <p>User Engagement and Technical Implementation: Several technical steps will be performed to achieve the Objectives. Users will be involved and their requirements towards an operational Forest Monitoring System (FMS) will be consolidated. Specific algorithms for forest monitoring were selected, in order to develop cloud-based platform functionalities. As a result, an overall system architecture and its components were defined to fit the technical requirements. Identification of technical frame conditions of the C-DIAS platform and its compatibility with the proposed Front Office. Potential risks assessment which can arise during the project implementation and their respective mitigation measures were undertaken. A web-based GUI was deployed and assembled together with the functional processes on the Front Office platform. The key functionalities are:</p> <ul style="list-style-type: none"> - Definition of an Area of Interest, Sentinel-2 data selection, pre-processing and calculation of Indices (NDVI, time features and others), collection of reference samples, Random Forest Classification, Land Cover Map (output) at 10m spatial resolution. 	

- Capacity Building: Preparation of a User manual designed to facilitate Users in running the algorithms for specific demonstration applications on the cloud without additional technical expertise. Finally, the concept, design and functionalities of the platform were tested during a workshop at the premises of GAF in Munich and will be further validated through a second training workshop which will be organized in Malawi.
- Project Management and Technical Coordination focused on the progress monitoring and successful implementation of the Project. As a result, Deliverable and documentation was generated throughout the whole Project lifespan.

Reference n° 7 (GAF)

Assignment name: EOMonDis - EO based Monitoring of Forest Disturbances	Approx. value of the contract: 2,600,000 EUR equiv. to 2,887,420 US\$
Country: World Location within country: Cameroon, Malawi, Gabon, Vietnam	Duration of assignment (months): 42.00
Name of Client: European Commission	Total No of staff-months of the assignment: 289.10
Address:	Approx. value of the services provided by your firm under the contract: 896,000 EUR equiv. to 1,183,000 US\$
Start date (month/year): 02/2016 Completion date (month/year): 07/2019	No of professional staff-months provided by associated Consultants: 189.10
Name of associated Consultants, if any: Joanneum Research, Product innovation Cesbio, Product innovation SIRS, Service Demonstration, business analysis, TPZ-France, Spatial data infrastructure	Name of senior professional staff of your firm involved and functions performed: Project Coordinator: Dr. Thomas Häusler REDD Business Development: Dr. Sharon Gomez Technical Developments: Dr Gernot Ramminger
Narrative description of Project: <p>The EOMonDis Project aims to improve the operationality of tropical forest products/services in order to better access the funding for the UNFCCC REDD+ policy which is a large market segment for the EO-industry in Europe. Additionally, national forest policy programmes and Zero Deforestation programmes also require forest monitoring systems with assessment of forest/non-forest information using disturbance indicators for deforestation and degradation as well as changes in above ground woody biomass. In order to provide operational forest monitoring services for the humid and dry forests several technical challenges have to be overcome. For example, the occurrence of persistent cloud conditions in tropical regions impact the effective use of optical EO data. Seasonal effects in dry forest ecosystems (leaf-fall) combined with limited availability of multi-seasonal EO data coverages also influence the quality and cost effectiveness of the monitoring systems. These situations will change drastically with the Sentinel constellations which provide the high frequency, high resolution optical and radar data required. Therefore, the overarching goal of EOMonDis is to develop innovative and cost-effective EO-based methods to address the technical challenges for tropical forest monitoring which will also fully utilize the comprehensive information provided by the dense time series of optical and SAR satellite data of Sentinel-1 and 2. The methods developed will be tested on study sites selected to represent the wide range of variety in the tropical biomes, in Malawi, Cameroon, Gabon and Vietnam. Users from these countries will be consulted for consolidation of the service requirements, validation of the services, the customization and improvement of the services to fit into their workflows. Based on a market analysis and service validation by the User a 3year business concept will be developed to ensure that there is income generation after the project completion.</p>	
Description of actual services provided by your staff within the assignment: <ul style="list-style-type: none"> - Management and Coordination of an international Team of Scientists, Operational Service Providers and User Organisations; - User and market requirements assessment; - Technical design of Service Portfolio requirements; - Prototyping of a service platform; - Development of product innovations based on EO data (optical and SAR); - Prototyping, demonstration and accuracy assessment of innovative products; - Implementation of a User Validation; - Customisation of the Service platform and products based on user Feedback; - Development of a sustainable business concept; - Dissemination and Promotion. 	

Reference n°8 (GAF)

Assignment name: Ecuador: Provision of Consulting Services for Early Warning System for Deforestation and Fires	Approx. value of the contract: 691,000 US\$ equiv. to 606,000 EUR
Country: Ecuador Location within country: Continental Ecuador	Duration of assignment (months): 9,00
Name of Client: KFW / Ecuador	Total No of staff-months of the assignment:
Address:	Approx. value of the services provided by your firm under the contract: 0 US\$ equiv. to 0 EUR
Start date (month/year): 07/2018 Completion date (month/year): 03/2019	No of professional staff-months provided by associated Consultants: 0.00
Name of associated Consultants, if any:	Name of senior professional staff of your firm involved and functions performed:
Narrative description of Project: During the course of this project an early warning system was developed to detect changes in forest cover. The system can integrate Landsat, Sentinel-1 and Sentinel-2 data in an established processing chain. The processing chain was built to be hosted on a cloud environment. The main components of the service provision are a) Integral design of the early warning system with a focus on institutional workflows and required technical interfaces, b) Development and implementation of the satellite data processing chains for the early warning system d) Development of the mobile application to collect field data d) Implementation of a pilot early warning system during a two month field pilot, which was conducted in two provinces of Ecuador. The system was evaluated against the user requirements and recommendations for a national early warning system compiled.	
Description of actual services provided by your staff within the assignment: <ul style="list-style-type: none"> • Project Coordination and consultation with the client • Provision of a server infrastructure. • Development, hosting and maintaining of virtual servers • Transfer of configured servers to the premises of the customer • Programming of the early warning module with satellite data analyses • Evaluation and design of process models • Mobile application development • Testing, production and evaluation of the near real time alerts in the field • Human and technical resources management • Consultancy Services and workshops on advanced Earth Observation (EO) applications • Quality management and reporting 	

Reference n°9 (UHH)

Assignment name: Ensuring long-term productivity of lowland tropical rainforests of the Caribbean	Approx. value of the contract: EURO 350,000
Country: Suriname, Guyana, Belize and Trinidad & Tobago	Duration of assignment (months): 36
Name of Client: Food and Agriculture Organization of the United Nations	Total No of staff-months of the assignment: 45
Address: Rome, Italy	Approx. value of the services provided by your firm under the contract: EUR 270,000
Start date (month/year): 01.2015 Completion date (month/year): 12.2018	No of professional staff-months provided by associated Consultants:
Name of associated Consultants, if any:	Name of senior professional staff of your firm involved and functions performed: Prof. Dr. Michael Köhl Dr Philip Mundhenk Mr Sebastian Grafe
Narrative description of Project: The aim of the project was to design and prescribe interventions to improve the productivity of the forests, to assess the existing forest management practices and carbon stock, and to estimate the additional revenue from REDD+ in order to compensate the measures applied to improved forest management.	
Description of actual services provided by your staff within the assignment: <ul style="list-style-type: none"> - Designs and quality control of assessment of permanent plots in Belize, Trinidad, Guyana and Suriname, total area covered: 110 ha - Analysis of the data assessed with respect to growing stock and carbon stock - Time studies of reduced impact logging activities - Design and analysis of post-intervention surveys - Silvicultural guidelines for the sustainable management of tropical natural forests 	

Reference n°10 (GAF)

Assignment name: EOWORLD2 – SUPPORT TO REDD IN LATIN AMERICA	Approx. value of the contract: 100,000 EUR equiv. to 132,000 US\$
Country: Argentina; Chile Location within country: Chile: Isola de Chile; Argentina: Located within Gran Chaco at the border to Paraguay	Duration of assignment (months): 22.50
Name of Client: ESA ESRIN / World Bank	Total No of staff-months of the assignment: 12.50
Address:	Approx. value of the services provided by your firm under the contract: 100,000 EUR equiv. to 132,000 US\$
Start date (month/year): 04/2014 Completion date (month/year): 02/2016	No of professional staff-months provided by associated Consultants: 0.00
Name of associated Consultants, if any:	Name of senior professional staff of your firm involved and functions performed: Project Management: Rainer Fockelmann Production Management: Christopher Sandow, Christina Königbauer
Narrative description of Project: <p>Forests in South and Central America (LAC) account for 21% of the total area of forest in the world and include several important forest ecosystems such as the Amazon, the Chaco forests, the Valdivian forests and mangroves among others. However, these forests are under severe threat by the expansion of both agriculture and infrastructure development. The impact of infrastructure expansion on forests is of special importance nowadays in South America due to the interest of the region in investing in large infrastructure projects, especially roads, as a way to improve communication and stimulate economic growth. Furthermore, deforestation and forest degradation are pressing environmental problems in the LAC region.</p> <p>Serving World Bank, the project demonstrates the use of satellite Earth Observation in the context of infrastructure development monitoring in the LAC region for the development of aligned REDD+ strategies by:</p> <ul style="list-style-type: none"> - Identifying cases where infrastructure development may affect important forested areas. - Assessing and locating areas where deforestation or forest degradation is taking place because of infrastructure development. - Evaluating the direct and indirect impact of infrastructure development on forests, including degradation. - Providing information as a source for an informed forestry dialogue that supports the improvement of national forest policies. 	
Description of actual services provided by your staff within the assignment: <p>For both regions (Argentina and Chile):</p> <ul style="list-style-type: none"> - Recent Land Use/Land Cover Map for 2014 on VHR optical data (RapidEye) with 18 thematic classes - Forest Change Detection Maps between the years 2014, 2007 and 2002 - Statistics and change analysis, focussing on infrastructure encroachment - GIS Information layers - Comprehensive project documentation according to ESA standards 	

Reference n° 11 (GAF)

Assignment name: GEOFORAFRI	Approx. value of the contract: 187,000 EUR equiv. to 247,000 US\$
Country: Central African Republic; Congo, Republic of the Location within country:	Duration of assignment (months): 27.00
Name of Client: République du Congo et République Centrafricaine	Total No of staff-months of the assignment: 2.75
Address: KEY INFORMATION Project Reference No(s): 13-L-3-FR02-03 Contacts: Laetitia Romieu Centre IRD France South laetitia.romieu@ird.fr Phone: +33.4.6741.6259 Fax: +33.4.6741.6136 IMPORTANT DATES: Announced Date July 12, 2013 Express Interest By August 20, 2013	Approx. value of the services provided by your firm under the contract: 148,000 EUR equiv. to 195,000 US\$
Start date (month/year): 10/2013 Completion date (month/year): 09/2014	No of professional staff-months provided by associated Consultants: 1.00
Name of associated Consultants, if any: SIRS	Name of senior professional staff of your firm involved and functions performed: Dr. Rene Siwe (Project Manager) Dr. David Niamien (Remote sensing and imager Interpretation expert)
Narrative description of Project: The French Global Environment Facility (FGEF) has approved to fund the project (2012-2014) – « Capacity building and access to earth observation data for monitoring forests in Africa » (GEOFORAFRI). GEOFORAFRI will be carried out in close collaboration with national administrations in charge of the forests and ongoing regional and national initiatives and its objective is to promote the adoption and methodological and technical control of data from Earth observation satellites to enable countries to monitor the forest cover in accordance with international requirements as proposed in the framework of the Reduction of greenhouse gas (GHG) emissions issued from deforestation and forest degradation (REDD+). As one of the components of GEOFORAFRI, this project aims at building the capacity of a technical expert panel responsible for monitoring vegetation and forest in Togo and the Republic of Congo respectively. Firstly, the project foresaw the procurement and installation of the necessary hardware and software to conduct the training and further ensure through the knowledge transfer that the monitoring of vegetation and forest is operationalized in the two respective countries. Secondly, the training on Remote Sensing will provide the necessary technical, thematic, and procedural knowledge on forest monitoring services ensuring adequate image processing and archiving to strengthen the two countries' capacity related to REDD+.	
Description of actual services provided by your staff within the assignment: <ul style="list-style-type: none"> - Hardware and Software Procurement and Installation Technical and Thematic Capacity Building - Training on Remote Sensing, Satellite Image Interpretation of Processing, GIS, REDD+, MRV Monitoring, LULUCF carbon accounting, - Workshop Facilitation and Creation of Training Manual 	

Reference n° 12 (GAF)

Assignment name: Development of integrated monitoring systems for REDD+ in the SADC region	Approx. value of the contract: 1,238,000 EUR equiv. to 1,609,000 US\$
Country: SADC Location within country:	Duration of assignment (months): 46.00
Name of Client: GIZ	Total No of staff-months of the assignment: 71.00
Address:	Approx. value of the services provided by your firm under the contract: 602,000 EUR equiv. to 783,000 US\$
Start date (month/year): 01/2012 Completion date (month/year): 11/2015	No of professional staff-months provided by associated Consultants: 56.00
Name of associated Consultants, if any: DFS JV Partner (Terrestrial Inventory) GTI = Sub (Image Processing) CP Gross (Freelancer für GA; Training)	Name of senior professional staff of your firm involved and functions performed: Thomas Häusler, Project Manager
Narrative description of Project: <p>The annual destruction of forests in the Southern African Development Community (SADC) region is estimated at about two million hectares. Tanzania, Zambia, the Democratic Republic of Congo and Zimbabwe are among the 10 countries with the worldwide highest net loss of forest between 2000 and 2005. However, in order to estimate credible emissions from forest degradation in the region, currently no reliable data exist. Besides South Africa, none of the SADC countries currently has neither the technical and institutional capacity nor the resources to acquire, monitor, report and verify data on carbon stocks and their changes. Therefore, the project aims to design a SADC regional Monitoring, Reporting and Verification (MRV) system which can be used by the Member States.</p> <p>The four main building blocks of the SADC project are:</p> <ul style="list-style-type: none"> Developing a Regional MRV System Pilot Implementation of the Regional MRV System in (at least three) Pilot Countries MRV Capacity Building in SADC Pilot Countries Support of a MRV Pre-audit 	
Description of actual services provided by your staff within the assignment: <ul style="list-style-type: none"> - Evaluation of existing information sources as well as of institutional needs and capacity related to REDD - Development of a regional Monitoring, Reporting and Verification (MRV) System in accordance with the criteria of the Intergovernmental Panel on Climate Change (IPCC), with particular emphasis on compatibility with the regional MRV approach under development in the COMIFAC member countries - Contribution to the selection of pilot countries (3) and sites (4): Definition of criteria for choosing future pilot countries with partners - Exploitation of remote sensing data (satellite images) for the acquisition of spatially explicit data related to anthropogenic impacts on the carbon balance of SADC forests - Design and realization of terrestrial inventories by statistical sampling of forest carbon stocks per stratum of interest - Assessment of carbon balance based on activity data and emission factors using the "gain - loss" approach - MRV capacity building in SADC countries - Supervision of a pre-audit of the regional MRV by an accredited expert of the United Nations Framework on Climate Change Convention (UNFCCC) 	

Reference n° 13 (GAF)

Assignment name: REDDAF – REDD in Africa Stimulating Forest Monitoring Services REDD	Approx. value of the contract: 3,600,000 EUR equiv. to 4,824,000 US\$
Country: Cameroon; Central African Republic Location within country:	Duration of assignment (months): 36.00
Name of Client: Research Executive Agency - REA	Total No of staff-months of the assignment: 447.00
Address:	Approx. value of the services provided by your firm under the contract: 2,547,000 EUR equiv. to 3,413,000 US\$
Start date (month/year): 01/2011 Completion date (month/year): 12/2013	No of professional staff-months provided by associated Consultants: 339.00
Name of associated Consultants, if any: SIRS MesaConsult University Toulouse (CESBIO) JR University of Bangui (CAR) GTG SARL (Cameroon)	Name of senior professional staff of your firm involved and functions performed: Dr. Thomas Häusler (Project Manager) Dr. Rene Siwe (Assistant Coordinator) Dr. Gernot Ramming (Head of the production team)
Narrative description of Project: <p>The REDDAF project aims to develop pre-operational forest monitoring services in Cameroon and Central African Republic. The REDDAF establishes innovative services based on EO and in-situ measurements which respond to the needs of the users in the Congo Basin Region. The services are related to the Monitoring, Reporting and Verification (MRV) requirements within the new REDD policy process.</p> <p>The main activities proposed are:</p> <p>Country specific user requirements to identify the needs of stakeholders in terms of instituting REDD projects;</p> <p>Carbon stock accounting: research and development of methods for improved EO/ in-situ data applications to estimate areal extent of deforestation and forest degradation as well as carbon stock;</p> <p>Technology Transfer/Capacity Building to the country to ensure that project results, methodologies and lessons learned are provided in a manner to best support the work of national and regional counterparts.</p> <p>The services and products that will be delivered to the user community include forest cover maps and forest cover change maps for 1990-2000 and 2000-2009/10, land use changes based on six IPCC compliant land use classes; degradation maps, biomass maps and the relevant digital datasets.</p>	
Description of actual services provided by your staff within the assignment: <p>The main products of the services were deforestation and degradation products based on multi-temporal high-resolution satellite data. The following products and services will be derived:</p> <ul style="list-style-type: none"> - Forest cover mapping for 1990, 2000 and 2010: forest and non-forest classes - Deforestation Maps (Classes: Deforested Areas, No Data) for the time periods between 1990-2000, 2000 – 2010: forest land and IPCC compliant land use categories - Degradation mapping: intact and non-intact forest classes - In addition to these products and services the REDDAF project will provide basic conceptual training on EO-based forest monitoring to the counterparts in Central African Republic and will build on the previous trainings (in the REDD Cameroon Pilot) for the counterparts in Cameroon. 	

Reference n°14 (GAF)

Assignment name: GMES Service Element Forest Monitoring for REDD+	Approx. value of the contract: 3,200,000 EUR equiv. to 4,448,000 US\$
Country: Gabon; Congo, Republic of the Location within country:	Duration of assignment (months): 53.00
Name of Client: European Space Agency - ESA	Total No of staff-months of the assignment: 180.00
Address: Frank Martin Seifert ESA ESRIN Tel.: +39 06 94 180560 frank.martin.seifert@esa.int	Approx. value of the services provided by your firm under the contract: 1,400,000 EUR equiv. to 1,946,000 US\$
Start date (month/year): 12/2009 Completion date (month/year): 04/2014	No of professional staff-months provided by associated Consultants: 100.00
Name of associated Consultants, if any: VTT SIRS Joanneum Research MesaConsult European Forest Institute IRD CEMAGREF	Name of senior professional staff of your firm involved and functions performed: Dr. Thomas Häusler, Project Coordinator Dr. Sharon Gomez, Project Manager
Narrative description of Project: <p>The GSE FM REDD Pilot Projects in Cameroon and Bolivia provided a substantial basis for the further development of REDD projects. This led to ESA supporting from December 2009 the GSE FM REDD expansion to additional countries in the Congo region - Gabon and the Republic of Congo. The GSE FM REDD services focuses especially on developing Forest Monitoring components of UNFCCC national REDD Pilot Projects. Thus a GSE FM REDD Service Portfolio has been developed which encompasses the following:</p> <ul style="list-style-type: none"> - Stakeholder and institutional Analysis to identify the needs of stakeholders in terms of specific working practices and decision making cycles as well as the technical specifications for reporting - Reference scenarios/Estimating deforestation: remote sensing analysis to provide forest area maps and forest cover change maps applicable for a national REDD scenario. The application of spatial information on deforestation over a historical period provides the country with baseline projections of emissions caused by deforestation and degradation and reference scenarios - Technology Transfer/Capacity Building to the country to ensure that project results, methodologies and lessons learned are provided in a manner to best support the work of national and regional counterparts. 	
Description of actual services provided by your staff within the assignment: <p>The main products of the services are the deforestation and degradation products based on multi-temporal high-resolution satellite data. The following products and services are provided:</p> <ul style="list-style-type: none"> - Forest cover mapping for 1990, 2000 and 2010: forest and non-forest classes - Deforestation Maps (Classes: Deforested Areas, No Data) for the time periods between 1990-2000, 2000 – 2010: forest land and IPCC compliant land use categories - Degradation mapping: intact and non-intact forest classes - Capacity building via training workshops, fieldwork etc. 	

Reference n° 15 (GAF)

Assignment name: GMES Service Element Forest Monitoring Stage 1 and 2	Approx. value of the contract: 8,170,000 EUR equiv. to 10,784,000 US\$
Country: Austria; Denmark; French Guiana; Germany; United Kingdom; Greece; Indonesia; Italy; Latvia; Luxembourg; Paraguay; Poland; Russia; Spain; Sweden; Switzerland; Netherlands; Uganda; Portugal; Finland; France; Belgium; Bolivia; Bulgaria; Cameroon; Uruguay; EU Location within country:	Duration of assignment (months): 75.00
Name of Client: ESA ESRIN	Total No of staff-months of the assignment: 640.00
Address: Dr. Espen Volden Via Galileo Galilei 00044 Frascati, Italia 0039-06 941 80-624 Espen.Volden@esa.int;	Approx. value of the services provided by your firm under the contract: 3,645,000 EUR equiv. to 4,811,000 US\$
Start date (month/year): 03/2003 Completion date (month/year): 05/2009	No of professional staff-months provided by associated Consultants: 350.00
Name of associated Consultants, if any: More than 50 Partners (see www.gmes-forest.info)	Name of senior professional staff of your firm involved and functions performed: Dr. Thomas Häusler (Senior Forestry Expert); Project Manager
Narrative description of Project: <p>GAF AG as the Prime has been managing the European Space Agency (ESA) supported GMES Service Element for Forest Monitoring (GSE FM) since 2003-2009. The GSE FM has as the main objective to develop global operational forest monitoring services that can deliver forest resource information for practical forest and land use management operations. The key policies that the GSE FM currently provides information on are the United Nations Framework Convention on Climate Change (UNFCCC) and Kyoto Protocol (KP), the UN Convention on Biological Diversity (UNCBD), the Ministerial Conference on the Protection of Forests in Europe (MCPFE) and related Criteria & Indicator processes, the United Nations Forum on Forests and National Forest Programmes. To support the implementation of these policy segments, the GSE FM offers a range of products and user oriented services that stretch from highly accurate land use/land use change information, yearly carbon balance estimates and the compilation of forest disturbance data such as forest fires and wind throw but also information products for practical forest and land use management operations. The portfolio includes at continental to local scale level the following services:</p> <ul style="list-style-type: none"> - At Pan-European Scale: PAN European Forest Monitoring Service - At National Scale: Support to National UNFCCC and Kyoto Protocol Reporting on Land Use Land Use Change and Forestry (LULUCF) Activities - At National and Sub-national Scales <ul style="list-style-type: none"> • Forest Information Up-date • Support to Environmental Monitoring • Detection and Post-monitoring of Natural and Human Induced Forest Disturbances - At Local Scale <ul style="list-style-type: none"> • Support to Management and Reporting Obligations of LULUCF Clean Development Mechanism (CDM) Projects 	
Description of actual services provided by your staff within the assignment: <ul style="list-style-type: none"> - Overall management of a service network comprising of Service providers, user organisations, System developer, research organisations and expert consultants. 	

- Developing and implementing Training and Promotion, User Requirement Assessments and Service Utility Assessments
- Designing and managing the entire service portfolio, providing framework of validation, standards and quality assurance for service implementation
- Managing the various service deliveries of regional service providers
- Networking within the consortium and external partners

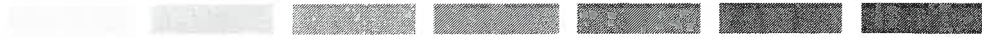
Reference n° 16 (UHH)

Assignment name: Sustainable land management in southwest Madagascar (SULAMA 2011 - 2016)	Approx. value of the contract: EUR 1300000
Country: Madagascar Location within country: Mahafaly Plateau, South-western Madagascar	Duration of assignment (months): 72
Name of Client: Federal Ministry of Education and Research (BMBF), Germany	Total No of staff-months of the assignment:
Address: Kapelle-Ufer 1, Berlin, Germany	Approx. value of the services provided by your firm under the contract:
Start date (month/year): 01.2011 Completion date (month/year): 12.2016	No of professional staff-months provided by associated Consultants:
Name of associated Consultants, if any: <ul style="list-style-type: none"> • University Hamburg, Zoologisches Institut • Umweltstiftung WWF Deutschland & Madagaskar • Universität Kassel • Ernst-Moritz-Arndt-University Greifswald • Philipps-Universität Marburg • Brandenburgische Technische Universität, Cottbus-Senftenberg • Georg-August-Universität Göttingen 	Name of senior professional staff of your firm involved and functions performed: Prof. Dr. Michael Köhl Mr Daniel Kübler Mr Konstantin Olschofsky
Narrative description of Project: <p>SuLaMa was a participatory research project on sustainable land management on the Mahafaly Plateau in southwestern Madagascar, one of the driest and poorest regions of the island. The focus of the first project phase was on the analysis of land management in order to understand the relationships and interactions between the local population and the state of the ecosystem. The results of the first phase were used to develop and evaluate different strategies to avoid unsustainable land use practices in the context of a growing population and climate change.</p>	
Description of actual services provided by your staff within the assignment: <p>In the project, the World Forestry experts analysed the composition of the forest, the use of wood, non-timber products and other services and the evolution of biomass and carbon stocks in the forest over time to quantify the potential of the forest to provide ecosystem services and functions. The outcome allowed developing approaches to sustainable timber production and use of non-timber products and the estimation of potential of enrichment plantations. The experts developed an agent-based model that simulates the impacts of different land use and climate change scenarios on forests and other types of land cover, thus enabling the identification of alternatives for sustainable land management.</p>	

Reference n°17 (UHH)

Assignment name: Report State of European Forests	Approx. value of the contract: EUR 150,000
Country: 27 European countries Location within country: Europe	Duration of assignment (months): 24
Name of Client: German Federal Ministry of Food and Agriculture UN-FAO/ECE Forestry Europe	Total No of staff-months of the assignment: 24
Address: Rochusstrasse 5 Bonn, Germany	Approx. value of the services provided by your firm under the contract: EUR 100,000
Start date (month/year): 1.2017 Completion date (month/year): 10.2020	No of professional staff-months provided by associated Consultants:
Name of associated Consultants, if any:	Name of senior professional staff of your firm involved and functions performed: Prof. Dr. Michael Köhl
Narrative description of Project: The report "State of European Forests" is jointly published by the UNECE/FAO and Forestry Europe. It presents qualitative and quantitative indicators for sustainable forest management and provides an assessment of the sustainability of European forests with respect to forest resources, forest health and vitality, forest production, forest biodiversity, forest protection and socio-economic aspects.	
Description of actual services provided by your staff within the assignment: <ul style="list-style-type: none"> - Verification of data provided by the countries - Analysis of current state and trends for 35 quantitative indicators - Coordination of the report - Writing contributions on individual indicators - Presentation of the report to the Ministerial Conference 	

5. SELECTED STAFF WITH EXPERIENCE RELEVANT TO THE PROJECT



The Project Team will select project staff from a large suite of experts. Selected proposed experts with relevant experience are shown below:

Name	Nationality	Education	Prof. exp./yrs	Company/ Institution	Yrs with comp	Specific experience	Countries experience
HÄUSLER, Thomas (Team leader- Forestry Expert)	German	PhD Forestry Assessor of the Forest Service (State License for Administrative Tasks) M.Sc. Forestry	33	GAF AG	31	<ul style="list-style-type: none"> REDD+ policy process, Development of regional and national forest monitoring strategies/systems in developing countries (REDD+MRV) Institutional strengthening and capacity building, Project planning and management Remote sensing and GIS, Environment, forest- and land use/cover mapping Analysis of satellite data and aerial photo Forest inventories, Capacity assessment and development Head of Forest and Climate Change Department at GAF 	Cameroon, Malawi, Botswana, Tunisia, Pakistan, Tanzania, Zimbabwe, Ghana, Malaysia, Indonesia, RSA, COMIFAC Countries, SADC Member States
GOMEZ, Sharon (Forestry Expert)	Sri Lankan	PhD Remote Sensing/GIS, ecological surveying M.Sc. Remote Sensing/GIS, Land Use/Vegetation Mapping	23	GAF AG	13	<ul style="list-style-type: none"> REDD+ policy process, Development of regional and national forest monitoring strategies/systems in developing countries (REDD+MRV) Climate Change and Resilience Project planning and management Remote sensing and GIS Environment, land use/cover mapping, analysis of satellite data and aerial photo Stakeholder assessment and capacity development 	South Africa, Cameroon, Republic of Congo, Ethiopia, Gabon, Namibia, Zimbabwe, Mozambique, Botswana, Zambia, Malawi, COMIFAC Countries, SADC Member States
ENSSLE, Fabian (GIS/Remote Sensing Expert)	German	M.Sc. Forestry	10	GAF AG	3	<ul style="list-style-type: none"> Climate Change mitigation and adaptation and the Reduction of Emissions from Deforestation and Degradation (REDD+) in developing countries Earth Observation (EO) data processing and method development Coordination of technical developments within the Forestry Unit Technical Assistance (TA) Capacity building and training GIS applications Research and Development (R&D) 	Fiji, Dem. Rep. Kongo, Cameroon, Malawi, Ecuador, Columbia
NAVRATIL, Peter	German	M.Sc. Geography	15	GAF AG	1	<ul style="list-style-type: none"> Establishment of FREL and FRL Environmental Remote Sensing (Multispectral, RADAR, LiDAR) & GIS LU and LUC mapping 	Fiji, Indonesia, Malawi, Vietnam, Cambodia, Myanmar, Georgia, Azerbaijan, Uzbekistan

(GIS/Remote Sensing Expert)	German	PhD Biology M.Sc. Environmental Resource Management Dipl. Forestry	15	GAF AG	1	<ul style="list-style-type: none"> Carbon monitoring & accounting Capacity building (Remote Sensing, Uncertainty assessment, GHG Emission Assessment) Forestry, forest mensuration, carbon accounting Forest carbon inventory & statistical analysis Assessment of forest AGB with LiDAR Remote sensing based upscaling of forest carbon inventory Accuracy assessment and validation 	Fiji, Indonesia, Malaysia, Liberia, Ethiopia, Georgia, Azerbaijan, Armenia, Kenya, Mozambique
BALLHORN, Uwe (GIS/Remote Sensing Expert)							
KOEHL, Michael (Team leader - Forestry Expert)	German	Professor PhD	30	UHH: Germany / GAF associate		<ul style="list-style-type: none"> Terrestrial inventory methods Survey statistics National Forest Inventory Forest Concession Based Forest Inventory National Forest Monitoring System for REDD+ Construction of FRL/FREL for REDD+ Quantitative methods International forest policy Sustainable forest management Climate, forest and land-use International forest resource monitoring Green economy and bioenergy 	EU, USA, Fiji, Viet Nam, Indonesia, India, Nepal, Suriname, Guyana, Belize and Trinidad, Tobago, Brazil, Madagascar, Kyrgyzstan, Zimbabwe, Ghana, Brazil, Nicaragua
NEUPANE, Prem (Forest Biometrician, Forestry expert)	Nepalese	PhD in Forestry	25	UHH: Germany		<ul style="list-style-type: none"> International forest policy processes including REDD+, Forest Law Forest Law Enforcement, Governance and Trade (FLEGT), Forest Certification, and C&I for SFM Development of regional and national forest/biodiversity monitoring strategies/systems in developing countries National/District Forest Inventory, Community based forest inventory PSP assessment Economics of natural forest and plantation management International forest and climate change reporting requirements (Inventory reporting, FRA, GHG-I) Small-scale (community and household-based) forestry National Forest Monitoring System (NFMS) for REDD+ including construction of FRL/FREL REDD+ safeguards including forest biodiversity monitoring 	Fiji, Viet Nam, Indonesia, Australia, India, Nepal, Germany, UK, Costa Rica, Suriname, Guyana

						<ul style="list-style-type: none"> National Forest Information System (Data Base) Guidance on the nesting of sub-national MRV and FRL within national MRV and FRL Development of Capacity Development Strategy for REDD+ Development of Short-term and long-term capacity development plan for REDD+ Jurisdictional REDD+ Implementation (JRI) Sustainable tropical forestry, forest governance Applied Silviculture 	
MUNDHENK, Philipp (Statistician)	German	PhD in Forestry	13	UHH, Germany		<ul style="list-style-type: none"> Forest mensuration Terrestrial Laser Scanning Remote sensing Forest inventory design and implementation PSP establishment Forest Report Assessment/NFI Reporting Survey methodology and sampling statistics NFMS for REDD+ Construction of FRL/FREL for REDD+ Guidance on the nesting of sub-national MRV and FRL within national MRV and FRL Tropical forestry Growth and yield modelling Planning and analysis of observational studies and experiments in (tropical) forests Data management and database Software development 	Fiji, Viet Nam, Indonesia, Nepal, Sri Lanka, Malawi Germany, Norway, Suriname, Guyana, Belize, Trinidad & Tobago, Mexico, USA, Canada, Senegal
TABUKOVU, Maika (Forestry expert-national)	Fijian	M.Sc. in Forestry		Consultant		<ul style="list-style-type: none"> NFMS for REDD+ Forest management: forest inventory, silviculture, forest harvesting International trade of wood products, timber market and value-chain Human resource development Forest product based entrepreneurship International work experience on forestry and forest planning sector 	Fiji, Viet Nam, New Zealand

6. ANNEXES

A. GAF Quality Management Certificate

B. Brochure of World Forestry, University of Hamburg

ANNEX A GAF AG Quality Management Certificate

CERTIFICATE



The
European Institute for the Certification of Management Systems and Personnel
An Institute of the Steinbeis Foundation for Economic Promotion

hereby certifies that the company

GAFAG

an e-GEOS (ASI / Telespazio) Company

GAF AG
Arnulfstraße 199
80634 München
Germany

has adopted a

Quality Management System

for the scope of application

**Geo-Data, Satellite Data, Application Software, Data Processing and Analysis,
Information Systems, Project Execution, Management Consulting**

which meets the following international standard:

ISO 9001:2015

(identical with DIN EN ISO 9001:2015 and EN ISO 9001:2015)

The demonstration was provided by a certification audit, Report No. 60050110.
The condition for maintaining the certification is the execution of annual surveillance audits.

Registration No.: QM 25 0110
Valid from: 12.07.2017
Valid until: 11.07.2020
Date of change: 26.06.2018

Jürgen G. Kerner
Certification committee

Bernd Kentner
Expert group

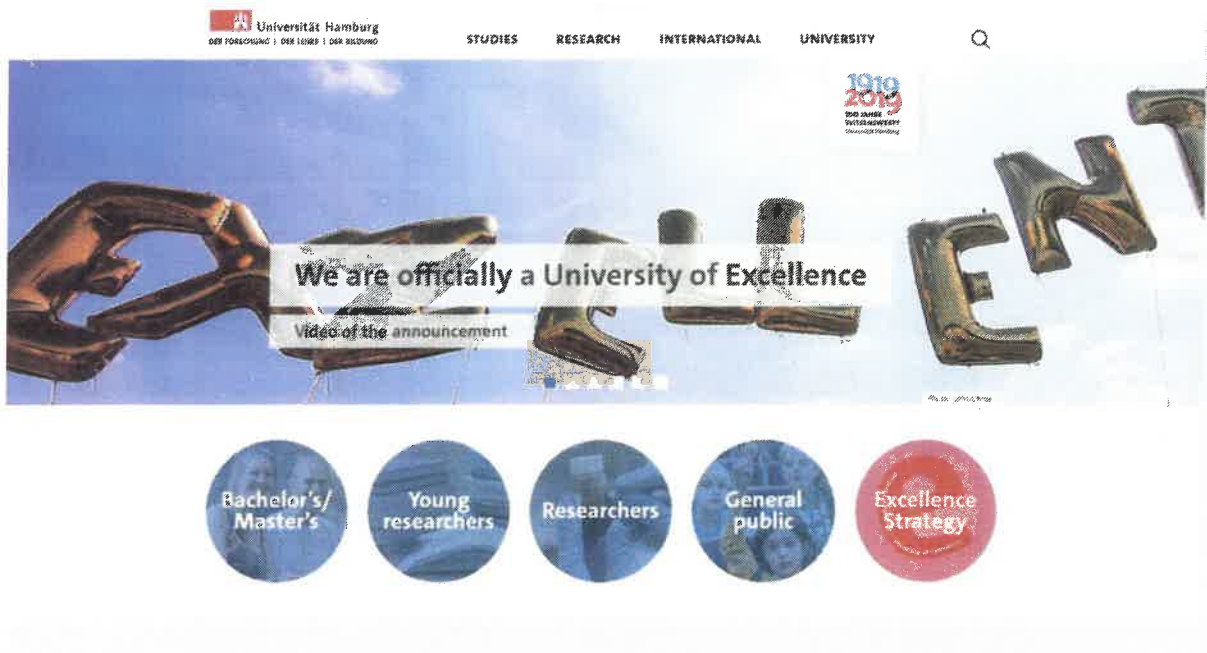


EQ ZERT is accredited by the German Association for Accreditation as a certification body
for quality management systems in accordance with Certificate No. D-ZM-11200-01-00.
This certificate is property of EQ ZERT, Karlstraße 3, D-89073 Ulm



ANNEX B Brochure of World Forestry, University of Hamburg

University of Hamburg, Germany: Officially a University of Excellence



<https://www.uni-hamburg.de/en.html>

Institute of World Forestry: an excellent academic institution, and as a hub for interdisciplinary research at University of Hamburg



<https://www.biologie.uni-hamburg.de/en/forschung/oekologie-biologische-ressourcen/weltforstwirtschaft.html>

Research at UHH World Forestry

We endeavour to ensure in our research areas a high scientific standard as well as a permanent national and international leadership.

We develop environmental and resource-friendly concepts for the management of natural and semi-natural forest ecosystems as well for the rehabilitation of degraded forest sites. Furthermore we consider the growing demand for raw materials and ecosystem services, the conservation of the biological diversity and the impacts of climate change.

Our research areas:

Sustainable forest management (Nachhaltige Waldbewirtschaftung)

Our research deals with concepts and strategies for sustainable forest management worldwide with special consideration of political, economic, social and cultural framework conditions.

Worldwide, the forested area is decreasing and especially in the tropics, this is done through the transformation into other forms of land use and the application of non-sustainable forest management. The result of such practices is the degradation or even devastation of forests, which at least in part lose their potential for carbon sequestration and storage. This also reduces the potential for storing carbon in wood products and thus for substituting fossil fuels and reducing CO₂ emissions.

For the restoration of degraded forests and the sustainable development of secondary forests, we develop or improve forestry systems on an ecological basis. In this context, the supply of non-timber products and the possibilities of forest cultivation are also taken into account in the development of silvicultural concepts.

The impact of forest management on traditional and new management objectives of multifunctional forestry - such as carbon sequestration and storage – are assessed using methods ranging from traditional field studies to scenario analysis.

International Forest Policy (Internationale Waldpolitik)

Since the United Nations Conference on Environment and Development (UNCED) in 1992, climate change, biological diversity and sustainable forest management have been central themes of international environmental and forest policy.

After UNCED, various international and regional conferences, initiatives and processes were launched with the aim of promoting the sustainable use of natural resources. These processes result in a multitude of forest-related international commitments and multilateral agreements. We deal with the interface between science and politics in the national, European and international context.

We advise the respective Liaison Unit of the Ministerial Conference on the Protection of Forests in Europe (FOREST EUROPE), a cooperation of 46 European countries and the European Union. This includes the co-authoring of the report "State of Forests and Sustainable Forest Management in Europe" for the respective ministerial conferences. There is also close cooperation with the United Nations Economic Commission for Europe (UNECE) and the Food and Agriculture Organization of the United Nations (FAO) in the areas of forest monitoring and forest resource recording.

We are assigned to the Project Centre SURF (Supporting the Global Implementation of REDD+ and FLEGT) of the EFI (European Forest Institute).

Another focus of our research is illegal, legal and sustainable logging and products made from it. We deal with the timber trade chain and are involved in the development of CoC certification for timber products within the framework of the International Organization for Organization (ISO) and the German Institute for Standardization (DIN).

Climate, Forests and Land Use (Klima, Wald und Landnutzung)

The unique role of forests for the climate and human well-being is often subordinated to land use changes for acute other needs. In order to reconcile societal demands and natural capacities, we manage and accompany projects and help to develop strategies that allow the simultaneous and sustainable development of society and ecosystems.

Forests, especially in the tropics, play a crucial role in the global climate cycle and as the basis of life for society. They are the largest terrestrial carbon stores, the basis for jobs, wood and wood products, food, and many other ecosystem services and functions.

Due to the constantly increasing demand for land to meet social demands, the preservation of these services can only be guaranteed by integrating forests into a holistic landscape concept.

We manage and accompany projects and help to develop strategies that permit the simultaneous and sustainable development of society and ecosystems.

International Forest Resource Assessment (Internationale Wald-Ressourcen-Erfassung)

In order to be able to manage forests sustainably, whether for the production of wood or the preservation of biodiversity, up-to-date and reliable information about the resource is essential. We develop methods and concepts that enable transparent, cost-efficient and statistically sound recording of forest resources.

In addition, we deal with the following topics:

- Biometrics,
- Sampling theory,
- Remote sensing,
- Spatial statistics, and
- Forest information systems.

A special focus is on the development of methods to develop and improve combined inventory methods (combination of terrestrial and remote sensing data). In this area we work closely with our partners in the tropics and subtropics as well as in temperate and boreal zones.

For more details, please visit: <https://www.biologie.uni-hamburg.de/en/forschung/oekologie-biologische-ressourcen/weltforstwirtschaft/forschungsbereiche.html>

UHH World Forestry contributions to Fiji National REDD+ Readiness

Establishment of a Reference Level (FRL) for forest land and development of a System for Monitoring, Reporting and Verifying (MRV) carbon emission reductions from forests in FIJI (04.2017 – 2.2019)

REDD+ Readiness documents

<http://www.forestry.gov.fj/index.php/redd>

- Situation analysis, available at http://www.forestry.gov.fj/images/REDD/Situation%20analysis_clear.pdf
- Development of methodology for a FRL, available at http://www.forestry.gov.fj/images/REDD/FRL_methodology_final_fiji.pdf
- FRL construction, available at http://www.forestry.gov.fj/images/REDD/Fiji_FRL_December_%202018.pdf
- Methodology development for NFMS and MRV
- Implementation of a test inventory
- NFMS establishment, available at <http://www.forestry.gov.fj/images/REDD/National%20Forest%20Monitoring%20System.pdf>
- Database development
- Quality Assurance / Quality Control procedures (SOPs)
- Guidance on the nesting of sub-national MRV and FRL within national MRV and FRL, available at <http://www.forestry.gov.fj/images/REDD/Guidance%20on%20the%20nesting%20of%20sub-national%20MRV%20and%20FRL%20within%20national%20MRV%20and%20FRL.pdf>
- Capacity building, see at http://www.forestry.gov.fj/images/REDD/Capacity_development_plan_draft1.pdf
- Capacity development strategy for MRV, available at http://www.forestry.gov.fj/images/REDD/Capacity_development_plan_draft1.pdf

Capacity building in Fiji by UHH World Forestry

http://www.forestry.gov.fj/images/REDD/Capacity_development_plan_draft1.pdf

List of capacity building workshop/training provided by the University of Hamburg (April 2017- December 2018)

SN	Nahte of thtraining	Date
1	Training on 'Statistical Design of NFI'	26-27 April, 2017
2	Training on 'Emission factors: data analysis and interpretation'	4 and 7 July, 2017
3	Training on 'Data cleansing: Permanent Sample Plot Programme, Emalu REDD+ Project'	24- 25 July, 2017
4	Workshop/Training on 'Uncertainty assessment of land use change and Quality Assurance (QA) and Quality Control procedures	28- 30 August, 2017

5	Training on 'Database instalment and operation of NFMS Database and Setup and configuration of field Surveys'	25 September- 9 October, 2017
6	Training on 'Forest inventory including designing field data collection protocol and forms'	October, 2017
7	Training on 'Database' (Skype conference)	24 July 2018
8	Training on 'Forest inventory data analysis using R'	5- 13 March, 2018
9	Training on 'Database: Installation of R-Packages' (Skype conference)	30 October, 2018
10	Training on 'Preparation of the database for the FRL scripts, installation and test of R-Packages for the script and Configuration of the web application to start the FRL script' (Skype conference)	11 November, 2018

CONTRACT

Consultant's Services
Lump-Sum

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CONTRACT FOR CONSULTANT'S SERVICES

Lump-Sum

Project Name Fiji Readiness Fund Implementation

Grant No. TF 19204

Contract No. 36

between

Fiji Ministry of Forestry

and

UNIQUE Forestry and Land Use

Dated: 16.02.2020

I. Form of Contract

LUMP-SUM

This CONTRACT (hereinafter called the “Contract”) is made the 16th day of the month of February, 2020, between, on the one hand, Fiji Ministry of Forestry (hereinafter called the “Client”) and, on the other hand, UNQUE Forestry and Land Use (hereinafter called the “Consultant”).

WHEREAS

- (a) the Client has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the “Services”);
- (b) the Consultant, having represented to the Client that it has the required professional skills, expertise and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;
- (c) the Client has received a grant from the International Bank for Reconstruction and Development (IBRD) toward the cost of the Services and intends to apply a portion of the proceeds of this grant to eligible payments under this Contract, it being understood that (i) payments by the Bank will be made only at the request of the Client and upon approval by the Bank; (ii) such payments will be subject, in all respects, to the terms and conditions of the grant agreement, including prohibitions of withdrawal from the grant account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by the decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations; and (iii) no party other than the Client shall derive any rights from the grant agreement or have any claim to the grant proceeds;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:
 - (a) The General Conditions of Contract (including Attachment 1 “Bank Policy – Corrupt and Fraudulent Practices);
 - (b) The Special Conditions of Contract;
 - (c) Appendices:

Appendix A: Terms of Reference

Appendix B: Key Experts

Appendix C: Breakdown of Contract Price

Appendix D: Form of Advance Payments Guarantee

In the event of any inconsistency between the documents, the following order of precedence shall prevail: the Special Conditions of Contract; the General Conditions of Contract, including Attachment 1; Appendix A; Appendix B; Appendix C; Appendix D. Any reference to this Contract shall include, where the context permits, a reference to its Appendices.

2. The mutual rights and obligations of the Client and the Consultant shall be as set forth in the Contract, in particular:
 - (a) the Consultant shall carry out the Services in accordance with the provisions of the Contract; and
 - (b) the Client shall make payments to the Consultant in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of Fiji Ministry of Forestry

G.P.N Baleinabuli
Permanent Secretary

For and on behalf of UNIQUE Forestry and Land Use

Dr. Timm Tennigkeit
Managing Director
UNIQUE

II. General Conditions of Contract

A. GENERAL PROVISIONS

1. Definitions

1.1. Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

- (a) “Applicable Guidelines” means Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011.
- (b) “Applicable Law” means the laws and any other instruments having the force of law in the Client’s country, or in such other country as may be specified in the **Special Conditions of Contract (SCC)**, as they may be issued and in force from time to time.
- (c) “Bank” means the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).
- (d) “Borrower” means the Government, Government agency or other entity that signs the financing agreement with the Bank.
- (e) “Client” means the implementing agency that signs the Contract for the Services with the Selected Consultant.
- (f) “Consultant” means a legally-established professional consulting firm or entity selected by the Client to provide the Services under the signed Contract.
- (g) “Contract” means the legally binding written agreement signed between the Client and the Consultant and which includes all the attached documents listed in its paragraph 1 of the Form of Contract (the General Conditions (GCC), the Special Conditions (SCC), and the Appendices).
- (h) “Day” means a working day unless indicated otherwise.
- (i) “Effective Date” means the date on which this Contract comes into force and effect pursuant to Clause GCC 11.
- (j) “Experts” means, collectively, Key Experts, Non-Key Experts, or any other personnel of the Consultant, Sub-consultant or JV member(s) assigned by the Consultant to perform the Services or any part thereof under the Contract.

- (k) “Foreign Currency” means any currency other than the currency of the Client’s country.
- (l) “GCC” means these General Conditions of Contract.
- (m) “Government” means the government of the Client’s country.
- (n) “Joint Venture (JV)” means an association with or without a legal personality distinct from that of its members, of more than one entity where one member has the authority to conduct all businesses for and on behalf of any and all the members of the JV, and where the members of the JV are jointly and severally liable to the Client for the performance of the Contract.
- (o) “Key Expert(s)” means an individual professional whose skills, qualifications, knowledge and experience are critical to the performance of the Services under the Contract and whose Curricula Vitae (CV) was taken into account in the technical evaluation of the Consultant’s proposal.
- (p) “Local Currency” means the currency of the Client’s country.
- (q) “Non-Key Expert(s)” means an individual professional provided by the Consultant or its Sub-consultant to perform the Services or any part thereof under the Contract.
- (r) “Party” means the Client or the Consultant, as the case may be, and “Parties” means both of them.
- (s) “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented but not over-written.
- (t) “Services” means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A hereto.
- (u) “Sub-consultants” means an entity to whom/which the Consultant subcontracts any part of the Services while remaining solely liable for the execution of the Contract.
- (v) “Third Party” means any person or entity other than the Government, the Client, the Consultant or a Sub-consultant.

2. Relationship between the Parties

2.1. Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the Client and the Consultant. The Consultant, subject to this Contract, has complete charge of the Experts and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

- 3. Law Governing Contract** 3.1. This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.
- 4. Language** 4.1. This Contract has been executed in the language specified in the **SCC**, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.
- 5. Headings** 5.1. The headings shall not limit, alter or affect the meaning of this Contract.
- 6. Communications** 6.1. Any communication required or permitted to be given or made pursuant to this Contract shall be in writing in the language specified in Clause GCC 4. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the **SCC**.
- 6.2. A Party may change its address for notice hereunder by giving the other Party any communication of such change to the address specified in the **SCC**.
- 7. Location** 7.1. The Services shall be performed at such locations as are specified in **Appendix A** hereto and, where the location of a particular task is not so specified, at such locations, whether in the Government's country or elsewhere, as the Client may approve.
- 8. Authority of Member in Charge** 8.1. In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the **SCC** to act on their behalf in exercising all the Consultant's rights and obligations towards the Client under this Contract, including without limitation the receiving of instructions and payments from the Client.
- 9. Authorized Representatives** 9.1. Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Client or the Consultant may be taken or executed by the officials specified in the **SCC**.
- 10. Corrupt and Fraudulent Practices** 10.1. The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in **Attachment 1** to the GCC.
- a. Commissions and Fees** 10.2. The Client requires the Consultant to disclose any commissions, gratuities or fees that may have been paid or are to be paid to agents or any other party with respect to the selection process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or

fee. Failure to disclose such commissions, gratuities or fees may result in termination of the Contract and/or sanctions by the Bank.

B. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

- 11. Effectiveness of Contract** 11.1. This Contract shall come into force and effect on the date (the “Effective Date”) of the Client’s notice to the Consultant instructing the Consultant to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the SCC have been met.
- 12. Termination of Contract for Failure to Become Effective** 12.1. If this Contract has not become effective within such time period after the date of Contract signature as specified in the SCC, either Party may, by not less than twenty two (22) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.
- 13. Commencement of Services** 13.1. The Consultant shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the SCC.
- 14. Expiration of Contract** 14.1. Unless terminated earlier pursuant to Clause GCC 19 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the SCC.
- 15. Entire Agreement** 15.1. This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.
- 16. Modifications or Variations** 16.1. Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party.
- 16.2. In cases of substantial modifications or variations, the prior written consent of the Bank is required.
- 17. Force Majeure**
- a. Definition** 17.1. For the purposes of this Contract, “Force Majeure” means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and makes a Party’s performance of its obligations hereunder impossible or so impractical as reasonably to

be considered impossible under the circumstances, and subject to those requirements, includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action confiscation or any other action by Government agencies.

17.2. Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Experts, Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder.

17.3. Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

b. No Breach of Contract

17.4. The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.

c. Measures to be Taken

17.5. A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

17.6. A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) calendar days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

17.7. Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

17.8. During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the Client, shall either:

- (a) demobilize, in which case the Consultant shall be reimbursed for additional costs they reasonably and

necessarily incurred, and, if required by the Client, in reactivating the Services; or

- (b) continue with the Services to the extent reasonably possible, in which case the Consultant shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.

17.9. In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clauses GCC 44 & 45.

18. Suspension

18.1. The Client may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultant to remedy such failure within a period not exceeding thirty (30) calendar days after receipt by the Consultant of such notice of suspension.

19. Termination

19.1. This Contract may be terminated by either Party as per provisions set up below:

a. By the Client

19.1.1. The Client may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause. In such an occurrence the Client shall give at least thirty (30) calendar days' written notice of termination to the Consultant in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e); and at least five (5) calendar days' written notice in case of the event referred to in (f):

- (a) If the Consultant fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause GCC 18;
- (b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;
- (c) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GCC 45.1;

- (d) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;
- (e) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;
- (f) If the Consultant fails to confirm availability of Key Experts as required in Clause GCC 13.

19.1.2. Furthermore, if the Client determines that the Consultant has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Client may, after giving fourteen (14) calendar days written notice to the Consultant, terminate the Consultant's employment under the Contract.

b. By the Consultant

19.1.3. The Consultant may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Client, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

- (a) If the Client fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GCC 45.1 within forty-five (45) calendar days after receiving written notice from the Consultant that such payment is overdue.
- (b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.
- (c) If the Client fails to comply with any final decision reached as a result of arbitration pursuant to Clause GCC 45.1.
- (d) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the Client of the Consultant's notice specifying such breach.

c. Cessation of Rights and Obligations

19.1.4. Upon termination of this Contract pursuant to Clauses GCC 12 or GCC 19 hereof, or upon expiration of this Contract pursuant to Clause GCC 14, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in

Clause GCC 22, (iii) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GCC 25, and (iv) any right which a Party may have under the Applicable Law.

d. Cessation of Services

19.1.5. Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GCC 19a or GCC 19b, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Client, the Consultant shall proceed as provided, respectively, by Clauses GCC 27 or GCC 28.

e. Payment upon Termination

19.1.6. Upon termination of this Contract, the Client shall make the following payments to the Consultant:

- (a) payment for Services satisfactorily performed prior to the effective date of termination; and
- (b) in the case of termination pursuant to paragraphs (d) and (e) of Clause GCC 19.1.1, reimbursement of any reasonable cost incidental to the prompt and orderly termination of this Contract, including the cost of the return travel of the Experts.

C. OBLIGATIONS OF THE CONSULTANT

20. General

a. Standard of Performance

20.1 The Consultant shall perform the Services and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with the third parties.

20.2. The Consultant shall employ and provide such qualified and experienced Experts and Sub-consultants as are required to carry out the Services.

20.3. The Consultant may subcontract part of the Services to an extent and with such Key Experts and Sub-consultants as may be

approved in advance by the Client. Notwithstanding such approval, the Consultant shall retain full responsibility for the Services.

**b. Law
Applicable to
Services**

20.4. The Consultant shall perform the Services in accordance with the Contract and the Applicable Law and shall take all practicable steps to ensure that any of its Experts and Sub-consultants, comply with the Applicable Law.

20.5. Throughout the execution of the Contract, the Consultant shall comply with the import of goods and services prohibitions in the Client's country when

- (a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or
- (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

20.6. The Client shall notify the Consultant in writing of relevant local customs, and the Consultant shall, after such notification, respect such customs.

**21. Conflict of
Interests**

21.1. The Consultant shall hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.

**a. Consultant
Not to Benefit
from
Commissions,
Discounts, etc.**

21.1.1 The payment of the Consultant pursuant to GCC F (Clauses GCC 38 through 42) shall constitute the Consultant's only payment in connection with this Contract and, subject to Clause GCC 21.1.3, the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-consultants, as well as the Experts and agents of either of them, similarly shall not receive any such additional payment.

21.1.2 Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the Client on the procurement of goods, works or services, the Consultant shall comply with the Bank's Applicable Guidelines, and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the

account of the Client.

b. Consultant and Affiliates Not to Engage in Certain Activities

21.1.3 The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-consultants and any entity affiliated with such Sub-consultants, shall be disqualified from providing goods, works or non-consulting services resulting from or directly related to the Consultant's Services for the preparation or implementation of the project, unless otherwise indicated in the SCC.

c. Prohibition of Conflicting Activities

21.1.4 The Consultant shall not engage, and shall cause its Experts as well as its Sub-consultants not to engage, either directly or indirectly, in any business or professional activities that would conflict with the activities assigned to them under this Contract.

d. Strict Duty to Disclose Conflicting Activities

21.1.5 The Consultant has an obligation and shall ensure that its Experts and Sub-consultants shall have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Client, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.

22. Confidentiality

22.1 Except with the prior written consent of the Client, the Consultant and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Experts make public the recommendations formulated in the course of, or as a result of, the Services.

23. Liability of the Consultant

23.1 Subject to additional provisions, if any, set forth in the SCC, the Consultant's liability under this Contract shall be provided by the Applicable Law.

24. Insurance to be Taken out by the Consultant

24.1 The Consultant (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at its (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Client, insurance against the risks, and for the coverage specified in the SCC, and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid. The Consultant shall ensure that such insurance is in place prior to commencing the Services as stated in Clause GCC 13.

**25. Accounting,
Inspection and
Auditing**

25.1 The Consultant shall keep, and shall make all reasonable efforts to cause its Sub-consultants to keep, accurate and systematic accounts and records in respect of the Services and in such form and detail as will clearly identify relevant time changes and costs.

25.2 The Consultant shall permit and shall cause its Sub-consultants to permit, the Bank and/or persons appointed by the Bank to inspect the Site and/or all accounts and records relating to the performance of the Contract and the submission of the Proposal to provide the Services, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Consultant's attention is drawn to Clause GCC 10 which provides, inter alia, that acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under this Clause GCC25.2 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Bank's prevailing sanctions procedures.)

**26. Reporting
Obligations**

26.1 The Consultant shall submit to the Client the reports and documents specified in **Appendix A**, in the form, in the numbers and within the time periods set forth in the said Appendix.

**27. Proprietary Rights
of the Client in
Reports and
Records**

27.1 Unless otherwise indicated in the **SCC**, all reports and relevant data and information such as maps, diagrams, plans, databases, other documents and software, supporting records or material compiled or prepared by the Consultant for the Client in the course of the Services shall be confidential and become and remain the absolute property of the Client. The Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultant may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to this Contract without prior written approval of the Client.

27.2 If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of the plans, drawings, specifications, designs, databases, other documents and software, the Consultant shall obtain the Client's prior written approval to such agreements, and the Client shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned. Other restrictions about the future use of these documents and software, if any, shall be specified in the **SCC**.

**28. Equipment,
Vehicles and
Materials**

28.1 Equipment, vehicles and materials made available to the Consultant by the Client, or purchased by the Consultant wholly or partly with funds provided by the Client, shall be the property of the Client and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the

Client an inventory of such equipment, vehicles and materials and shall dispose of such equipment, vehicles and materials in accordance with the Client's instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the Client in writing, shall insure them at the expense of the Client in an amount equal to their full replacement value.

28.2 Any equipment or materials brought by the Consultant or its Experts into the Client's country for the use either for the project or personal use shall remain the property of the Consultant or the Experts concerned, as applicable.

D. CONSULTANT'S EXPERTS AND SUB-CONSULTANTS

29. Description of Key Experts 29.1 The title, agreed job description, minimum qualification and estimated period of engagement to carry out the Services of each of the Consultant's Key Experts are described in **Appendix B**.

30. Replacement of Key Experts 30.1 Except as the Client may otherwise agree in writing, no changes shall be made in the Key Experts.

30.2 Notwithstanding the above, the substitution of Key Experts during Contract execution may be considered only based on the Consultant's written request and due to circumstances outside the reasonable control of the Consultant, including but not limited to death or medical incapacity. In such case, the Consultant shall forthwith provide as a replacement, a person of equivalent or better qualifications and experience, and at the same rate of remuneration.

31. Removal of Experts or Sub-consultants 31.1 If the Client finds that any of the Experts or Sub-consultant has committed serious misconduct or has been charged with having committed a criminal action, or shall the Client determine that Consultant's Expert or Sub-consultant have engaged in corrupt, fraudulent, collusive, coercive or obstructive practice while performing the Services, the Consultant shall, at the Client's written request, provide a replacement.

31.2 In the event that any of Key Experts, Non-Key Experts or Sub-consultants is found by the Client to be incompetent or incapable in discharging assigned duties, the Client, specifying the grounds therefore, may request the Consultant to provide a replacement.

31.3 Any replacement of the removed Experts or Sub-consultants shall possess better qualifications and experience and shall be acceptable to the Client.

31.4 The Consultant shall bear all costs arising out of or incidental

to any removal and/or replacement of such Experts.

E. OBLIGATIONS OF THE CLIENT

32. Assistance and Exemptions

32.1 Unless otherwise specified in the SCC, the Client shall use its best efforts to:

- (a) Assist the Consultant with obtaining work permits and such other documents as shall be necessary to enable the Consultant to perform the Services.
- (b) Assist the Consultant with promptly obtaining, for the Experts and, if appropriate, their eligible dependents, all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in the Client's country while carrying out the Services under the Contract.
- (c) Facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Experts and their eligible dependents.
- (c) Issue to officials, agents and representatives of the Government all such instructions and information as may be necessary or appropriate for the prompt and effective implementation of the Services.
- (d) Assist the Consultant and the Experts and any Sub-consultants employed by the Consultant for the Services with obtaining exemption from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity in the Client's country according to the applicable law in the Client's country.
- (e) Assist the Consultant, any Sub-consultants and the Experts of either of them with obtaining the privilege, pursuant to the applicable law in the Client's country, of bringing into the Client's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Experts and of withdrawing any such amounts as may be earned therein by the Experts in the execution of the Services.
- (f) Provide to the Consultant any such other assistance as may be specified in the SCC.

33. Access to Project Site

33.1 The Client warrants that the Consultant shall have, free of charge, unimpeded access to the project site in respect of which access is required for the performance of the Services. The Client will be responsible for any damage to the project site or any property

thereon resulting from such access and will indemnify the Consultant and each of the experts in respect of liability for any such damage, unless such damage is caused by the willful default or negligence of the Consultant or any Sub-consultants or the Experts of either of them.

34. Change in the Applicable Law Related to Taxes and Duties

34.1 If, after the date of this Contract, there is any change in the applicable law in the Client's country with respect to taxes and duties which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the Contract price amount specified in Clause GCC 38.1

35. Services, Facilities and Property of the Client

35.1 The Client shall make available to the Consultant and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described in the Terms of Reference (**Appendix A**) at the times and in the manner specified in said **Appendix A**.

36. Counterpart Personnel

36.1 The Client shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the Client with the Consultant's advice, if specified in **Appendix A**.

36.2 Professional and support counterpart personnel, excluding Client's liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the Client shall not unreasonably refuse to act upon such request.

37. Payment Obligation

37.1 In consideration of the Services performed by the Consultant under this Contract, the Client shall make such payments to the Consultant for the deliverables specified in **Appendix A** and in such manner as is provided by GCC F below.

F. PAYMENTS TO THE CONSULTANT

38. Contract Price

38.1 The Contract price is fixed and is set forth in the SCC. The Contract price breakdown is provided in **Appendix C**.

38.2 Any change to the Contract price specified in Clause 38.1 can be made only if the Parties have agreed to the revised scope of

Services pursuant to Clause GCC 16 and have amended in writing the Terms of Reference in **Appendix A**.

39. Taxes and Duties

39.1 The Consultant, Sub-consultants and Experts are responsible for meeting any and all tax liabilities arising out of the Contract unless it is stated otherwise in the **SCC**.

39.2 As an exception to the above and as stated in the **SCC**, all local identifiable indirect taxes (itemized and finalized at Contract negotiations) are reimbursed to the Consultant or are paid by the Client on behalf of the Consultant.

40. Currency of Payment

40.1 Any payment under this Contract shall be made in the currency(ies) of the Contract.

41. Mode of Billing and Payment

41.1 The total payments under this Contract shall not exceed the Contract price set forth in Clause GCC 38.1.

41.2 The payments under this Contract shall be made in lump-sum installments against deliverables specified in **Appendix A**. The payments will be made according to the payment schedule stated in the **SCC**.

41.2.1 Advance payment: Unless otherwise indicated in the **SCC**, an advance payment shall be made against an advance payment bank guarantee acceptable to the Client in an amount (or amounts) and in a currency (or currencies) specified in the **SCC**. Such guarantee (i) is to remain effective until the advance payment has been fully set off, and (ii) is to be in the form set forth in **Appendix D**, or in such other form as the Client shall have approved in writing. The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the **SCC** until said advance payments have been fully set off.

41.2.2 The Lump-Sum Installment Payments. The Client shall pay the Consultant within sixty (60) days after the receipt by the Client of the deliverable(s) and the cover invoice for the related lump-sum installment payment. The payment can be withheld if the Client does not approve the submitted deliverable(s) as satisfactory in which case the Client shall provide comments to the Consultant within the same sixty (60) days period. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated.

41.2.3 The Final Payment. The final payment under this Clause shall be made only after the final report have been submitted by the Consultant and approved as satisfactory by the

Client. The Services shall then be deemed completed and finally accepted by the Client. The last lump-sum installment shall be deemed approved for payment by the Client within ninety (90) calendar days after receipt of the final report by the Client unless the Client, within such ninety (90) calendar day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. 41.2.4 All payments under this Contract shall be made to the accounts of the Consultant specified in the SCC.

41.2.4 With the exception of the final payment under 41.2.3 above, payments do not constitute acceptance of the whole Services nor relieve the Consultant of any obligations hereunder.

42. Interest on Delayed Payments

42.1 If the Client had delayed payments beyond fifteen (15) days after the due date stated in Clause GCC 41.2.2, interest shall be paid to the Consultant on any amount due by, not paid on, such due date for each day of delay at the annual rate stated in the SCC.

G. FAIRNESS AND GOOD FAITH

43. Good Faith

43.1 The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

H. SETTLEMENT OF DISPUTES

44. Amicable Settlement

44.1 The Parties shall seek to resolve any dispute amicably by mutual consultation.

44.2 If either Party objects to any action or inaction of the other Party, the objecting Party may file a written Notice of Dispute to the other Party providing in detail the basis of the dispute. The Party receiving the Notice of Dispute will consider it and respond in writing within fourteen (14) days after receipt. If that Party fails to respond within fourteen (14) days, or the dispute cannot be amicably settled within fourteen (14) days following the response of that Party, Clause GCC 45.1 shall apply.

45. Dispute Resolution

45.1 Any dispute between the Parties arising under or related to this Contract that cannot be settled amicably may be referred to by either Party to the adjudication/arbitration in accordance with the provisions specified in the SCC.

II. General Conditions

Attachment 1: Bank's Policy – Corrupt and Fraudulent Practices

(the text in this Attachment 1 shall not be modified)

Guidelines for Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“Fraud and Corruption

1.23 It is the Bank's policy to require that Borrowers (including beneficiaries of Bank loans), consultants, and their agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers, and any personnel thereof, observe the highest standard of ethics during the selection and execution of Bank-financed contracts [footnote: In this context, any action taken by a consultant or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, to influence the selection process or contract execution for undue advantage is improper.]. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

- (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party¹;
- (ii) “fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation²;
- (iii) “collusive practices” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party³;
- (iv) “coercive practices” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party⁴;

¹ For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the selection process or contract execution. In this context “public official” includes World Bank staff and employees of other organizations taking or reviewing selection decisions.

² For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the selection process or contract execution; and the “act or omission” is intended to influence the selection process or contract execution.

³ For the purpose of this sub-paragraph, “parties” refers to participants in the procurement or selection process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish prices at artificial, non-competitive levels, or are privy to each other's bid prices or other conditions.

- (v) “obstructive practice” is
- (aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or
 - (bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights;
- (b) will reject a proposal for award if it determines that the consultant recommended for award or any of its personnel, or its agents, or its sub-consultants, sub-contractors, services providers, suppliers, and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
- (c) will declare mis-procurement and cancel the portion of the Loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the Loan were engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the selection process or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner they knew of the practices;
- (d) will sanction a firm or an individual at any time, in accordance with prevailing Bank’s sanctions procedures⁵, including by publicly declaring such firm or an ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract, and (ii) to be a nominated⁶ sub-consultant, supplier, or service provider of an otherwise eligible firm being awarded a Bank-financed contract.

⁴ For the purpose of this sub-paragraph, “party” refers to a participant in the selection process or contract execution.

⁵ A firm or an individual may be declared ineligible to be awarded a Bank-financed contract upon (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including inter alia: cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application of the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceedings. See footnote 12 and paragraph 8 of Appendix 1 of these Guidelines.

⁶ A nominated sub-consultant, supplier, or service provider is one which has been either (i) included by the consultant in its proposal because it brings specific and critical experience and know-how that are accounted for in the technical evaluation of the consultant’s proposal for the particular services; or (ii) appointed by the Borrower.

III. Special Conditions of Contract

[Notes in brackets are for guidance purposes only and should be deleted in the final text of the signed contract]

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(b) and 3.1	The Contract shall be construed in accordance with the law of the Republic of Fiji.
4.1	The language is English.
6.1 and 6.2	<p>The addresses are:</p> <p>Client : Ministry of Forestry for and on behalf of the Government of the Republic of Fiji Attention : Semi Dranibaka ; REDD+ Unit Facsimile : E-mail (where permitted): semi.dranibaka@gmail.com</p> <p>Consultant : UNIQUE Forestry & Land Use</p> <p>Attention : Matthias Seebauer Facsimile : E-mail (where permitted) : Matthias.Seebauer@unique-landuse.de</p>
8.1	<p>The Lead Member on behalf of the JV is</p> <p>N / A</p>
9.1	<p>The Authorized Representatives are:</p> <p>For the Client: Mr Semi Dranibaka</p> <p>For the Consultant: Matthias Seebauer</p>
12.1	<p>Termination of Contract for Failure to Become Effective:</p> <p>The time period shall be 2 months</p>
13.1	<p>Commencement of Services:</p> <p>The first day of the consultancy shall be insert date</p>

	Confirmation of Key Experts' availability to start the Assignment shall be submitted to the Client in writing as a written statement signed by each Key Expert.
14.1	Expiration of Contract: The time period shall be eight months .
21 b.	The Client reserves the right to determine on a case-by-case basis whether the Consultant should be disqualified from providing goods, works or non-consulting services due to a conflict of a nature described in Clause GCC 21.1.3

23.1	No additional provisions.
24.1	<p>The insurance coverage against the risks shall be as follows:</p> <p>Professional liability insurance, with a minimum coverage of US\$ 799,000.</p>
38.1	<p>The Contract price is: Two Hundred and Thirty-Eight thousand, Eight hundred and ten dollars (USD), (USD\$ 238,810) inclusive of local direct taxes (15% withholding tax).</p> <p>“The amount of value added taxes is 21,492.90 Twenty one thousand and four hundred and ninety two dollar and ninety cents (USD \$ 21,492.90) which shall be paid by the Client for the Consultant.”</p>
39.1 and 39.2	<p>The Client warrants that the Client shall pay on behalf of the Consultant, the Sub-consultants and the Experts any indirect taxes, duties, fees, levies and other impositions imposed, under the applicable law in the Client’s country, on the Consultant, the Sub-consultants and the Experts in respect of:</p> <ul style="list-style-type: none"> (a) any payments whatsoever made to the Consultant, Sub-consultants and the Experts (other than nationals or permanent residents of the Client’s country), in connection with the carrying out of the Services; (b) any equipment, materials and supplies brought into the Client’s country by the Consultant or Sub-consultants for the purpose of carrying out the Services and which, after having been brought into such territories, will be subsequently withdrawn by them; (c) any equipment imported for the purpose of carrying out the Services and paid for out of funds provided by the Client and which is treated as property of the Client; (d) any property brought into the Client’s country by the Consultant, any Sub-consultants or the Experts (other than nationals or permanent residents of the Client’s country), or the eligible dependents of such experts for their personal use and which will subsequently be withdrawn by them upon their respective departure from the Client’s country, provided that: <ul style="list-style-type: none"> (i) the Consultant, Sub-consultants and experts shall follow the usual customs procedures of the Client’s country in importing property into the Client’s country; and (ii) if the Consultant, Sub-consultants or Experts do not withdraw but dispose of any property in the Client’s country

	<p>upon which customs duties and taxes have been exempted, the Consultant, Sub-consultants or Experts, as the case may be, (a) shall bear such customs duties and taxes in conformity with the regulations of the Client's country, or (b) shall reimburse them to the Client if they were paid by the Client at the time the property in question was brought into the Client's country.</p>																								
41.2	<p>The payment schedule:</p> <table><tr><th>Payment</th><th>% of total</th><th>Amount</th><th>Deliverable</th></tr><tr><td></td><td></td><td>USD</td><td></td></tr><tr><td>1</td><td>10</td><td>23,881</td><td>Situational analysis and work plan report</td></tr><tr><td>2</td><td>30</td><td>71, 643</td><td>Report on the Design of NFI and PSP & SOP on NFI and PSP</td></tr><tr><td>3</td><td>30</td><td>71, 643</td><td>Execution of NFI</td></tr><tr><td>4</td><td>30</td><td>71, 643</td><td>Reports on the NFI</td></tr></table> <p>Upon validation of each deliverable by National REDD+ Steering Committee:</p>	Payment	% of total	Amount	Deliverable			USD		1	10	23,881	Situational analysis and work plan report	2	30	71, 643	Report on the Design of NFI and PSP & SOP on NFI and PSP	3	30	71, 643	Execution of NFI	4	30	71, 643	Reports on the NFI
Payment	% of total	Amount	Deliverable																						
		USD																							
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3	30	71, 643	Execution of NFI																						
4	30	71, 643	Reports on the NFI																						
41.2.1	<p>The following provisions shall apply to the advance payment and the advance bank payment guarantee:</p> <p>The Contractor does not request an advance payment.</p>																								
41.2.4	<p>The accounts are:</p> <p>for foreign currency: Account Name : IBAN /Account Number: BIC/SWIFTCODE: Address of Bank Branch:</p> <p>for local currency: <i>same as foreign currency</i></p>																								
45.1	<p>Disputes shall be settled by arbitration in accordance with the following provisions:</p> <p>1. <u>Arbitrator(s) and Arbitration.</u> Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three (3) arbitrators pursuant to the provisions of the Arbitration Act 1965.</p>																								

	<p>2. <u>Miscellaneous</u>. In any arbitration proceeding hereunder:</p> <p>(a) proceedings shall, unless otherwise agreed by the Parties, be held in Suva, Fiji;</p> <p>(b) the English language shall be the official language for all purposes; and</p> <p>(c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.</p>
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IV. Appendices

APPENDIX A – TERMS OF REFERENCE

Designing a National Forest Inventory and Permanent Sample Plots and support for the field component of the NFI

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a. Background

Fiji is implementing a series of activities as stipulated in the Readiness Preparation Proposal (R-PP) in support of REDD+ (Reducing Emissions from Deforestation and Forest Degradation and forest conservation, sustainable management of forests and carbon stock enhancement) readiness that enables REDD+ implementation and generate carbon and non-carbon benefits besides promoting sustainable forest management and improved forest governance. The REDD+ readiness helps Fiji to operationalize the National Forest Monitoring System and to report progress on mitigation actions in forest resources management under the United Nations Framework Convention on Climate Change (UNFCCC) and the sustainable development goal related to climate change (SDG 13).

The Forest Carbon Partnership Facility (FCPF) is supporting Fiji to enable the country to participate in REDD+ processes and to harness benefits of the result-based payments (RBP) for REDD+. As part of the readiness, Fiji has developed Forest Reference Level (FRL) for the ER program covering the three islands of Viti Levu, Vanua Levu and Tavauni; and initiated the design of National Forest Monitoring System.

To improve the biomass estimation of Fiji forests, there is a need to conduct a National Forest Inventory. In Fiji, three National Forest Inventories were conducted in the past. Assessing timber in the forest for logging was the main focus of the inventories. With the advent of the REDD+ mechanism, a new NFI is essential to support the implementation and monitoring of REDD+ and supply the information on the management of Fiji forest resources to meet national development priorities and to meet the reporting requirements of international conventions and processes related to forests and environment.

The permanent sample plots (PSP) network of Fiji established in 2010 to monitor timber growth in Fiji. The plots are measured at two year intervals. The last measurements of the PSPs were conducted in 2016. Field crews are continuously measuring these PSPs. The systematic sample grid of the PSP program covers only forest of the three largest islands Viti Levu, Vanua Levu and Taveuni. The management and measurements of PSPs were found to have significant gaps limiting their contribution in the unbiased estimation of biomass and growth of forest resources of Fiji. As part of the design of NFI, it is necessary to review the

PSP design and the possible integration of PSP framework into the NFI so as to facilitate PSP to form integral part of the NFI going forward.

The University of Hamburg (UoH) consultant report suggested to conduct a review of the design of 2006 NFI and the PSP network in preparation for the new design of a multifunctional NFI for Fiji. Taking into account the recommendations of the UoH consultant report, the consultant should provide a design for a multifunctional NFI.

1. Previous National Forest Inventories and the Status of Permanent Sample Plots

• 2.1 National Forest Inventory

Three NFIs were conducted in Fiji, and the latest one was carried out in 2006. All three NFIs were focused on the availability of commercial timber in Fiji's natural forests. They were not based on permanent sample plots so the data have limited use in a carbon context. Nonetheless a Standard Operation Procedures (SOP) for 2006 NFI is available which details the tree attributes measured in the 2006 NFI. The tree attributes measured are tree diameter > 5 cm, merchantable tree height, and slope of the plot, GPS locations, tree bole quality, and species name. Likewise, information on litter and deadwood biomass pools were not collected in the NFI 2006. Management Service Division has established a database of the measurement of NFI 2006. The consultant will review the methodology of past NFIs and Standard Operating Procedure (SOP)⁷ and take suitable elements into consideration for the design of the new NFI.

• 2.2 Permanent Sample Plots

Permanent sample plots (PSP) are essential for assessing forest growth and forest dynamics. Fiji has established 84 PSP in the forest area. It is not known if the PSP network is adequate to obtain a robust estimate of carbon stock change and forest growth dynamics. The PSPs are periodically measured (2010, 2012, 2014, 2016, with the latest round commenced in 2018) assessed to record changes in the specified stand and tree attributes. Diameter at Breast Height (DBH), merchantable height, top height species, regeneration are measured in first three years of data collection; litter and deadwood is also recorded in the last two years of data collection.

2. Objectives

The general objectives of this assignment are to:

analyse the data collected from the 2006 NFI and to produce an NFI summary report suitable for submission to the Secretary General on behalf of the Ministry of Forestry.

augment the design of Fiji's PSP network to create an operational NFI with improved the accuracy and precision of collected forest data to assist in meeting Fiji's international reporting commitments.

The objective of this assignment are to: develop sampling design of a NFI with based on permanent sample plots (sampling intensity, plot design) and ideally incorporating the sampling framework of PSP, prepare a Response Design (plot configuration, plot size, plot shape, and number of plots), and develop a measurement protocol. The consultant should train the Ministry of Forestry field crews to collect the data as described in the measurement protocol. The consultant should also include the design and documentation of a QA/QC process and train Ministry of Forestry field crews in this specific task.

The main tasks include:

1. Review of data collected from past forest inventories including an assessment of the confidence intervals of the data and use this to inform the new PSP design.
2. Development of a Ministry of Forestry report detailing the analysis of NFI 2006 data.
3. Preparation of the design of a National Forest Inventory based on permanent sampling plots including the description of stratification, sampling approach, sample frame and sampling unit in consultation with the Forest Resource Assessment and Conservation Division of the Ministry of Forestry and other stakeholders for validation in a national consultation workshop.
4. Recommendation and documentation in a field manual on the parameters to be measured including tree parameters and carbon pools to be considered for measurement.

5. Conduct training of the inventory crews, prior to start of the inventory field work, on the tasks related to forest measurements following the standard operating procedures of forest inventory and quality assurance and quality control procedures to be followed in the national forest inventory. The training should be conducted in collaboration with the Inventory Section of the Forest Resource Assessment and Conservation Division.
6. Support inventory teams in the conduct of field work and in layout of sample plots and technically back-stop in conducting and checking measurements. Liasion with local communities and daily supervision of the field works will be done by the Inventory Officer of the Ministry of Forestry.
7. Analysis of forest inventory data to estimate the forest resources and generation of emission and removal factor data shall be undertaken in close collaboration with the staff of Inventory Section of the Forest Department so that the capacity of the Inventory Section can be strengthened to facilitate data collection and analysis in the future.
8. Preparation of appropriate documentation to support field crew instruction.
9. Estimation of the uncertainty associated with the emission and removal factor data with ± 10 percent precision and 90 percent confidence interval.

3. Work Program and Outputs

This section describes the tasks to be undertaken under each section of the assignment.

SN	Task	Output / deliverable	Timeline
1	Situation Analysis and final work plan development	Report: A situation analysis of existing relevant forest data, gaps and alternative options for the way forward. The report also includes a final work plan for the consultancy. The report should be validated and agreed by the National REDD+ Steering Committee.	2 weeks
2	Design National Forest Inventory and Permanent Sample Plots	Report: The inventory design report should contain entire details of NFI sampling design, response design and estimation design (the estimators). The estimator needs to be compatible with both sampling and response design. The report should include SOPs including QA/QC procedures for sampling and response design. The report should include a work plan for conducting the field work.	4 weeks
3	Train field crew in field data collection SOP	The field crew staff are trained in the field in the data collection methods, prior to the teams leaving to complete the field data collection.	4 weeks
4	Train and support field crew in QA/QC of measured plots	A dedicated field team is trained in QA/QC methods to assess the precision and accuracy of the field measurements	4 weeks
5	Develop Ministry of Forestry report on 2006 NFI data collected	Assess and summaries the data collected during the last NFI round and develop a report on behalf of the Ministry of Forestry.	8 weeks

4. Details of the deliverables

a. Situation Analysis (D1)

The consultant should review previous assessments of PSP and NFI programs and draft a situational analysis report that contains a detail work plan for designing and execution of an NFI based on permanent sample plots.

b. Report on the design of National Forest Inventory and PSP, Standard Operating Procedures for NFI and PSP (D2)

The report should include all three basic design elements of sampling: sampling design, response design, and estimation design. All REDD+ relevant stakeholders should be consulted and informed about the PSP design or redesign. The report should clearly specify the reasons for the selected design. Data on periodical measurements of the PSP of years 2010, 2012, 2014, 2016, and 2018 are available. Hence consultant is advised to analyze the data while designing or redesigning the PSP. Consultations with relevant stakeholders is essential in the designing process. This report should be accompanied by appropriate operational manuals/standard operating procedures for an operational repeatable NFI design.

c. Execution of National Forest Inventory (D3)

Training of field crews in the plot data collection procedures, expectations of precision and accuracy, and QA/QC procedures. The field crews should be supported throughout the field data collection campaign with regular communication and integration of data collected on a continuous basis to assess the target levels of precision and accuracy.

d. Report on NFI 2006 (D4)

The inventory Report relating to the NFI 2006 should cover the details of the stratification, sampling approach, sample frame and sampling unit, measurements taken, and forest resulting forest characteristics.

5. Study Team

The study team will be comprised of international and national experts. The Team Leader is expected to have a thorough understanding of National Forest Inventories in tropical forest and more than ten years of experience in the related field specifically in REDD+ and Climate Change, Forestry and Natural Resource Management (NRM). The team leader will be responsible for coordinating the overall process and for ensuring that all specific tasks of the ToR are being addressed satisfactorily in the report, while other members will help the team leader in specific activities. Other team members are also expected to have a clear understanding and at least 5 years of experience in the related field.

Key Expert	Minimum Qualification	Additional skills that will be an advantage
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Key Expert	Minimum Qualification	Additional skills that will be an advantage
Team Leader-Forestry Expert	a. At least Master's in Forestry or equivalent b. With a minimum 10 and preferably 15 years of relevant experience and a good understanding of climate change, forestry, and REDD+ issues. c. Previous engagement in similar assignment is an advantage.	1. Involved in the National Forest Inventory. 2. Forest Monitoring System 3. Experience of working in the South Pacific region
Forest Biometrician	4. Master's degree in Forest Biometrics or related subject 5. At least eight years of working experience in the field of forest inventory or a related field	6. Experience of working in the South Pacific region
Statistician	7. Master's degree in statistics or related subject 8. At least five years of experience working in the forestry sector	9. Experience of designing forest inventory at a national level 10. Permanent Sample Plots establishment and/or measurement 11. Experience of working in the South Pacific region
GIS/ Remote Sensing Expert	12. At least Bachelor in Remote Sensing/ Geographical Information System 13. Experience of working in the application of RS/GIS in the forestry sector	14. Experience of working in designing a National Forest Inventory is an advantage 15. Experience of working in the South Pacific region

The Ministry of Forestry will allocate sufficient human resources to conduct the field work.

6. Work plan

The team is expected to prepare a situation analysis accompanied by a detailed work plan that shall guide the process. This work plan will describe how the assignment will be carried out, including work schedule, a methodology to be used related to each specific task, information collection and analysis, and reporting. Based on the work plan, a detailed plan of study will be discussed and finalized jointly by the study team and the REDD+ Unit.

7. Qualification/experiences and competency of the consulting firm or consortium of consulting firms

The consulting firm or consortium of consulting firms to be involved in this assignment should demonstrate the ability to carry out this assignment with sufficient experience in leading multi-disciplinary team. The firm has to have the proven capability of studying and producing consistently high-quality reports and proven experience of capacity development required for the assignment. The consulting firm or consortium of consulting firms has to demonstrate proven expertise in the following areas:

Designing and execution of Forest Inventory and Permanent Sample Plots at National or Sub National level.

8. Duration of work

This study is anticipated to be completed by 14th June 2020 and is to begin by 20th October 2019.

i. Eligibility criteria

This study opportunity is opened to both national and international firms. Service providers must be duly registered for the last three years and be able to produce up to date tax clearance certificates.

ii. Deliverables

The consultants will submit a Situational Analysis report within the 2 week contract commencement describing the consultants' plan of actions. This report should be accompanied by a work/schedule to ensure that the final submission will be made on time. The Situation Analysis report must be approved by the REDD+ Steering Committee to proceed with further work.

Draft copies of all reports should be submitted to the client within seven months of commencement of the contract agreement. Following the final review of the submitted draft documents by the client and the ensuing communication, the consultant shall prepare and submit three final hard copies and an electronic copy of the required documents to the REDD+ Unit Ministry of Forestry.

iii. Payment Schedule

Output	Payment (%)
Situational Analysis Report including work plan (D1)	10%

Report on the design of National Forest Inventory and PSP, Standard Operating Procedures for NFI and PSP (D2)	30%
Execution of National Forest Inventory (D3)	30%
Report on the National Forest Inventory (D4)	30%

All reports must be acceptable to the clients to be eligible for the payments. REDD+ Unit will bear the costs for the national validation workshops and national RSC meeting consultations.

iv. Client's input to the Consultant

The REDD+ Unit and the Ministry of Forestry, Fiji will supervise and oversee the contract and help to implement the study by providing feedback and coordination with other government agencies and stakeholders where necessary. The ministry will bear the cost of instruments used for the NFI, allowance and logistic for crew members, however the consultants will provide training to the crew members. Also, the consultants provide QA/QC training to forestry officials that will be responsible for supervising and quality-checking.

The REDD+ Unit will facilitate with the consulting team to arrange consultation meetings with the relevant stakeholders and the REDD+ Steering Committee members for their comments and feedbacks at different stages of this study.

APPENDIX B - KEY EXPERTS
TEAM COMPOSITION, ASSIGNMENT AND INPUTS AND CVS

N0°	Name	Expert's input (in person/month) per each Deliverable (listed in TECH-5)							Total time-input		
		Position		D-1	D-2	D-3	D-4	Home	(in Months) Field		Total
Key Experts											
K-1	Matthias Seebauer	Team Leader-Forestry Expert	Home	0.18	0.23	0.32	0.36	1.09			1.77
			Field	0.00	0.68	0.00	0.00		0.68		
K-2	Metodi Panev	Forest Biometrician	Home	0.36	0.91	0.91	0.73	2.91			4.14
			Field	0.00	0.45	0.55	0.23		1.23		
K-3	Dr. Kyle Holland	Statistician	Home	0.09	0.18	0.00	0.18	0.45			0.45
			Field	0.00	0.00	0.00	0.00		0.00		
K-4	Prashant Kadgi	GIS/ Remote Sensing Expert	Home	0.00	0.00	0.68	0.00	0.68			0.68
			Field	0.00	0.00	0.00	0.00		0.00		
						Subtotal		5.14	1.91	7.05	
Non-Key Experts											
N-1	Alexandar Pinkwart	Non-Key Expert 1	Home	0.86	1.09	0.91		2.86			4.45
			Field	0.00	1.59	0.00			1.59		
N-2	Pool of other Non-Key Experts	Non-Key Expert 2	Home	0.00	0.00	0.00		0.00			0
			Field	0.00	0.00	0.00			0.00		
					Sub-total			2.86	1.59	4.45	
					Total			8.00	3.50	11.50	

APPENDIX C – BREAKDOWN OF CONTRACT PRICE

No.	Name	Position (as in TECH-6)	Person-month Remuneration rate	Time input in person month (from TECH-6)	USD	FJD
Key Experts						
K-1	Matthias Seebauer	Team Leader-Forestry Expert	[Home] 20,900	1.09	37,050	80,610
			[Field]	0.68		
K-2	Metodi Panev	Forest Biometrician	[Home] 17,600	2.91	72,800	158,392
			[Field]	1.23		
K-3	Dr. Kyle Holland	Statistician	[Home] 20,900	0.45	9,500	20,669
			[Field]	0.00		
K-4	Prashant Kadgi	GIS/ Remote Sensing Expert	[Home] 17,600	0.68	12,000	26,109
			[Field]	0.00		
Non-key experts						
N-1	Alexandar Pinkwart	Non-Key Expert 1	[Home] 13,200	2.86	58,800	127,932
			[Field]	1.59		
N-2	Pool of other Non-Key Experts	Non-Key Expert 2	[Home] 13,200	0.00	0	0
			[Field]	0.00		
Total costs					190,150	413,713

N°	Type of reimbursable expenses	Unit	Unit Cost	Quantity	USD	FJD
1	International per diem **	Day	180	42	7,560	16,448
2	Per diem national	Day	180	50	9,000	19,581
3	International flights incl VISA and local travel	Trip	2,600	9	23,400	50,912
4	Local flight	Trip	0	0	0	0
5	In-country transport	Carrent vehicle	0	0	0	0
6	Reporting & Printing	Lump sum	2,500	1	2,500	5,439
7	Workshop Organization	Lump sum	200	6	1,200	2,611
8	Contingencies	Lump sum	5,000	1	5,000	10,879
Total costs					48,660	105,871

SUMMARY OF COSTS

Item	Costs	
	USD	FJD
Proposed Costs in accordance with Clause 16.4 of the Data Sheet		
Costs of the Financial Proposal		
Including:		
(1) Remuneration	190,150	413,713
(2) Reimbursables	48,660	105,871
Total Cost of the Financial Proposal:	238,810	519,584
Indirect Local Tax Estimates		
(i) VAT reversal Charges (9%)		
(ii) {e.g., income tax on non-resident experts}	21,492.90	
Total Estimate for Indirect Local Tax:	260, 302.90	567,460.33

Footnote: Payments will be made in the currency(ies) expressed above (Reference to ITC 16.4).

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To:
Ministry of Forests
REDD+ Unit
Fiji

Managing Director:
Dr. Timm Tennigkeit
Dr. Bernd Wippel

Local Court Freiburg HRB 7584
UNIQUE forestry and land use GmbH

Freiburg, 29.11.2019

Power of Attorney

Dear Sirs,

This is to confirm that Dr. Timm Tennigkeit is authorized to sign the technical as well as financial proposal due to his position as the Managing Director of UNIQUE forestry and land use.

As piece of evidence, please find the Commercial Registry Certificate attached.

Yours sincerely,



Signature (of Consultant's authorized representative)

Dr. Timm Tennigkeit

Managing Director

UNIQUE forestry and land use GmbH

Schnewlinstraße 10, 79098 Freiburg, Germany

+49 761 - 20 85 34 - 0 (Phone)

+49 761 - 20 85 34 - 10

tim.tennigkeit@unique-landuse.de

Commercial Registry B of the local court of Freiburg i.Br.	Division B Representation of the current content of the registry Retrieval 10.10.2019 07:53	Number of company: HRB 7584
	Page 1 of 2	

1. Number of previous registries:

6

2. a) Company:

UNIQUE forestry and land use GmbH

b) Headquarters, subsidiary, domestic business address, authorized person, branch offices:

Freiburg im Breisgau

Business address: Schnewlinstr. 10, 79098 Freiburg im Breisgau

c) Object of the company:

The consultation and project development in the forestry, timber and agricultural sector.

3. Share and charter capital:

160,000.00 EUR

4. a) General representation regulation:

In case there is only one managing director appointed, he is the only representative. In case there are several managing directors appointed, two managing directors act together or one managing director acts together with an authorized officer. It is possible to grant individual power of representation. The managing directors can be exempted from the limitations according to §181 BGB.

b) Executive board, management body, managing directors, personally liable shareholders, managing director, authorized representatives and legal powers of representation:

Holding the sole power representation with the authority to conclude legal transactions for its own account or as a representative of a third party on behalf of the company:

Managing director: Dr. Tennigkeit, Timm, Au, *07.07.1969

Managing director: Dr. Wippel, Bernd Dieter, Freiburg im Breisgau, *26.04.1962

5. General commercial power of representation:

Individual power of representation:

Dr. rer. nat. Csapek, Germar, Titisee-Neustadt, *11.06.1965

Dr. Statz, Jochen, Kirchzarten, *31.08.1966

Dr. rer. nat. Weinreich, Axel, Staufen, *03.06.1960

6. a) Legal form, commencement, company statutes or articles of association:

Private limited liability company

Articles of association from 22.07.2005

Last amended by decision from 14.09.2011

Commercial Registry B of the local court of Freiburg i.Br.	Division B Representation of the current content of the registry Retrieval 10.10.2019 07:53	Number of company: HRB 7584
	Page 1 of 2	

b) Other legal relationships:

7. a) Date of the last entry:

15.01.2016

Membership in Professional Associations and Publications:

American Society for Photogrammetry and Remote Sensing, International Environmetrics Society, Institute of Mathematical Statistics

Language Skills (indicate only languages in which you can work):

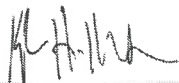
English

Expert's contact information: kholland@ecopartnersllc.com, +1-415-634-4650 x101

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available, as and when necessary, to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank.

Kyle Holland



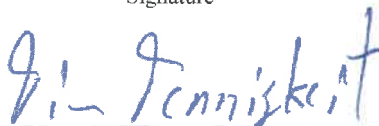
17/10/2018

Name of Expert

Signature

Date

Dr. Timm Tennigkeit



17/10/2018

Name of authorized

Representative of the Consultant

(the same who signs the Proposal)

Signature

Date

Perspectives on Forest Industry and Real Estate Investment (2008) University of California, Berkeley
 Managing Your Forest for Multiple Benefits (2006 and 2007)..... Woodland Workshop Series, Minnesota
 Results From the 2002 Statewide BMP Monitoring Program (2003)..... Timber Producers' Association, Wisconsin

Statistical Specializations

Probability sampling methods for forest biomass estimation.
 Methods for forest stand and individual tree growth and yield modeling.
 Feature space classification methods for hyper-dimensional datasets.
 Bayesian methods for hierarchical and Markov field models.
 Experimental design.

Computing Specializations

Statistical classification algorithms for land use and change detection in satellite imagery.
 Radiometric, topographic and spatial correction algorithms for the preprocessing of multi-spectral satellite imagery such as LANDSAT and MODIS.
 Algorithms for maximum likelihood, expectation maximization, Gibbs sampling, MAP estimation of Markov random fields and generative classification.
 Likelihood, interpolation, equalization and re-sampling algorithms for image mosaicking.
 Object oriented design for parallel computing, TCP/IP communication, image processing, data storage, access and management.
 Fluency in the following languages: C, C++, C#, Java, IDL, VB, PHP, R, S+, SQL, Perl and AS.

Publications

- Holland, K. and Biging, G. *In review*. Space-time modeling of trajectory parameters from discrete-return lidar point data. *ASPRS X(X):X – X*.
- Holland, K. and Jones, D. *In review*. The effects of silviculture on carbon sequestration in *Sequoia sempervirens*. *Western Journal of Applied Forestry X(X):X – X*.
- Holland, K. and Biging, G. *In review*. Automated lidar fusion using object space transformations and focal planes. *International Journal of Remote Sensing X(X): X – X*.
- Zhong, L., Hawkins, T., Holland, K., Gong, P. and Biging, G. 2009. Determination of crop types using multi-temporal MODIS images. *California Agricultural* 63(4): 220-224.
- Holland, K. 2004. *The 2003 BMP Monitoring Rempport, Wisconsin's Forestry Best Management Practices for Water Quality*. Wisconsin Department of Natural Resources, Madison, WI.
- Holland, K., Breunig, B. and Gasser, D. 2003. *Wisconsin's Forestry Best Management Practices for Water Quality: The 2002 Statewide BMP Monitoring Report*. Wisconsin Department of Natural Resources, Madison, WI.
- Holland, K. 2003. Wisconsin's Forestry Best Management Practices for Water Quality Program. *Woodland Management XXIV(3):32 – 33*.
- Holland, K. 2003. Practical solutions for protecting water quality: water bars. *Woodland Management XXIV(3):31 – 32*.

Presentations

- Feature Extraction from Mobile Data (2011).....University of California, Berkeley
- Cylindrical Analysis (2011).....University of California, Berkeley
- Feature Extraction from Mobile Data (2011).....ILMF 11, New Orleans
- Geospatial Supercomputing (2010).....GIS Day, Berkeley
- Geospatial Supercomputing (2010).....Geospatial Innovation Facility, Berkeley
- Feature Extraction using Discriminant Machine Learning (2010).....ILMF 10, Denver
- The Climate, Community and Biodiversity Standards (2009).....Sysflor, Curitiba, Brazil
- The Chicago Climate Exchange (2009).....Sysflor, Curitiba, Brazil
- Lidar Fusion Using Object Space Transformations and Focal Planes (2009)ASPRS National Conference, Baltimore
- Discriminant Classification of Lidar Fusion Data (2009).....University of California, Berkeley
- The Automated Production of True Ortho-Imagery from Lidar (2008).....Geospatial Innovation Facility, Berkeley

Yurok Sustainable Forest Project Phase II, California.....	ARB
Yurok Sustainable Forest Project Phase I, California.....	CAR, ARB
Methodology for Wetland Creation (VM0024)	VCS
Chulu Hills REDD Project, Kenya	VCS, CCB
Lower Zambezi REDD Project, Zambia.....	VCS, CCB
Anthroctect Choco Darien Project, Colombia	VCS, CCB
Wildlife Works REDD Methodology (VM0009)	VCS
Wildlife Works/ERA Mai Ndombe REDD+ Project, DRC.....	VCS, CCB
Wildlife Works Kasigau REDD Project, Phase I, Kenya	VCS
Wildlife Works Kasigau REDD Project, Phase II, Kenya	VCS
Numerous Undisclosed Projects	ARC, VCS, CCB
Numerous Feasibility Studies (IFM and REDD), Africa, Americas and South Pacific	VCS, CCB

Professional Awards

JNR REDD Expert, Verified Carbon Standard
 AFOLU Expert for IFM and REDD, Verified Carbon Standard
 Forest and Urban Forest Lead Verifier, Climate Action Reserve
 Lead Verifier, The Climate Registry
 Lead Verifier, The California Climate Action Registry
 California Registered Professional Forester (#2951)
 Massachusetts Licensed Forester (#412)
 Certified Forester, Society of American Foresters (#3770)
 Tree Farm Inspector, American Tree Farm System
 Approved Plan Preparer, Minnesota Department of Natural Resources
 Approved Plan Preparer, Wisconsin Department of Natural Resources

Academic Awards

Outstanding Teaching Award, UC Berkeley
 Supercomputing Partnership, NVIDIA Corporation
 Scholarship of Remote Sensing, American Society for Photogrammetry and Remote Sensing
 Departmental Fellowship, University of California, Berkeley
 L. Mather Academic Scholarship, University of Minnesota, Twin Cities
 Charles W. Stickney Academic Scholarship, University of Minnesota, Twin Cities
 William R. Miles Academic Scholarship, University of Minnesota, Twin Cities

Memberships

Society of American Foresters, Institute of Mathematical Statistics, American Society for Photogrammetry and Remote Sensing, International Environmetrics Society, Xi Sigma Pi, American Tree Farm System.

Revision to VMD0015 Methodology Module	Lead Auditor, VCS
E+Co Gold Standard Improved Cook Stove, Tanzania.....	Expert, CDM
Terra Global REDD Methodology	Lead Auditor/Expert, VCS
The Face Foundation B.V. IFM Methodology	Lead Auditor/Expert, VCS
North Carolina Avoided Conversion Project, North Carolina.....	Lead Auditor, CAR
Cherry Lake IFM Project, California	Auditor, CAR
Stirling IFM Project, California	Auditor, CAR
Buck Mountain IFM Project, California.....	Auditor, CAR
The World Bank ARR Methodology	Lead Auditor, VCS
Kasigau Corridor REDD Project, Kenya	Lead Auditor, CCB
J.D. Irving Woodlands LCC, Maine.....	Auditor, FSC
Madre de Dios Amazon REDD Project, Peru.....	Lead Auditor, CCB
Duratex Managed Forest Project, Bauru, Brazil	Lead Auditor, CCX
April Salome REDD Project, Papua New Guinea	Lead Auditor, CCB
Ecotrust IFM Methodology.....	Lead Auditor/Expert, VCS
REDD Forests Project, Tasmania, Australia.....	Auditor, CCB
Marais des Cygnes IFM Project, Kansas	Auditor, CCB
RPH Ranch IFM Project, California	Auditor, CAR
COFUSA Managed Forest Project, Uruguay	Technical Reviewer, CCX
Red River IFM Project, Louisiana	Technical Reviewer, CCB
Prairie Pothole IFM Project, North Dakota	Technical Reviewer, CCB

Development Experience

Fundaeco REDD+ Project, Guatemala	VCS, CCB
TFG Wyoming Forest Carbon Project, West Virginia	ARB
Warm Springs Forest Carbon Project, Oregon	ARB
Glasscock Forest Carbon Project, Mississippi	ARB
Mai Ndombe Jurisdictional Nested REDD Program, DRC	VCS, Carbon Fund
Carmen del Darien REDD+ Project, Colombia.....	VCS, CCB
Sivirú, Usaragá, Pizarro y Pilizá REDD+ Project, Colombia	VCS, CCB
Bajo Calima y Bahía Málaga, Colombia.....	VCS, CCB
Acapa – Bajo Mira y Frontera, Colombia	VCS, CCB
Cajambre REDD+ Project, Colombia	VCS, CCB
Concosta REDD+ Project, Colombia	VCS, CCB
Mutata REDD+ Project, Colombia.....	VCS, CCB
Rio Pepe REDD+ Project, Colombia	VCS, CCB
Ecotrust Moss Creek Forest Carbon Project, Oregon	VCS
Equator Sacramento Canyon Forest Project, California.....	ARB
Jadora Isangi REDD+ Project, DRC	VCS, CCB
Chemonics BIOREDD+ Projects, Colombia.....	VCS, CCB
Compatible Lands Camp Shelby, Mississippi	ARB

Kyle A. Holland

Managing Director, ecoPartners

Ph.D. Biometrics and Remote Sensing

ecoPartners

2930 Shattuck Ave, Suite 305

Berkeley, CA 94705

kholland [at] ecopartnersllc.com

+1 (415) 634-4650

Research Interests

Forest carbon measurement and modeling from remotely-sensed data; statistical methods for forest assessment; statistical object recognition and classification from remotely-sensed data; modeling of individual tree growth and yield over spatial-temporal domains.

Education

Ph.D. Biometrics and Remote Sensing (2012)..... University of California, Berkeley
M.A. Statistics (2011) University of California, Berkeley
M.S. Forest Biometrics (2009) University of California, Berkeley
Forest Engineering (2002)University of Idaho, Moscow
B.S. Forest Resource Management (2002)University of Minnesota, Twin Cities

Employment

2011 – present.....Auditor, Det Norske Veritas
2010 – present Managing Director, ecoPartners
2007 – 2012 Departmental Fellow, University of California, Berkeley
2009 – 2011 Auditor, Scientific Certification Systems
2005 – 2007..... Forester/Forestry Supervisor, Potlatch Corporation
2004 – 2005..... Forester/Forestry Coordinator, Maryland Department of Natural Resources
2003 – 2004..... Public Policy Associate, Trust for Public Land, Washington, DC
2002 – 2004.....Forester/Project Leader, Wisconsin Department of Natural Resources
2001 – 2002..... Forest Biometrics Technician, Potlatch Corporation
2000..... Forester, Minnesota Department of Natural Resources

Audit Experience

Biofilica Jari/Amapa REDD+ Project, Brazil..... Lead Auditor, VCS, CCB
Ecosystem Services APDML REDD Project, BrazilLead Auditor, VCS
Ecosystem Services RMDLT REDD Project, Brazil.....Lead Auditor, VCS
Blue Source Pungo River Project, North Carolina..... Lead Auditor, ARB, CAR
Blue Source Noles North Project, North Carolina..... Lead Auditor, ARB, CAR
Blue Source Noles South Project, North Carolina..... Lead Auditor, ARB, CAR
The Nature Conservancy Rio Bravo REDD Project, Belize.....Lead Auditor, VCS

CURRICULUM VITAE (CV)

Position Title and No.	K-3: Statistician
Name of Expert:	Dr. Kyle Holland
Date of Birth:	17/04/1980
Country of Citizenship/Residence	United States of America

Education:

School, college and/or University Attended	Degree/certificate or other specialized education obtained	Date Obtained
University of California, Berkley	Ph.D. Biometrics and Remote Sensing	2012
University of California, Berkley	M.A. Statistics	2011
University of California, Berkley	M.S. Forest Biometrics	2009
University of Idaho, Moscow	M.S. Forest Engineering	2002
University of Minnesota, Twin Cities	B.S. Forest Resource Management	2000

Employment Record relevant to the Assignment

Period	Employing organization and your title/position. Contact info for references	Country	Summary of activities performed relevant to the Assignment
2010 - present	<p>Ecological Carbon Offset Partners, LLC Managing Director</p> <p>Reference contact information: Greg Minnick, Chemonics, gminnick@chemonics.com, +1-202-955-3356 Joseph Garcia-Falmer, InfiniteEARTH, joseph@infinite-earth.com, +852-</p>	United States of America	REDD+ project development, forest carbon inventory design and analysis, carbon quantification and accounting, forest reference levels/forest reference emissions levels, land use/land change analysis

CURRICULUM VITAE (CV)

K-3: Statistician

Dr. Kyle Holland

(E) Approved. We must also ensure to train staff to either lead or support the conduct of future NFI's.

PS

Ufs CF

Ufs EDRD

RE: NFI Design Consultancy

Sir,

The evaluation committee has met and evaluated the bids for the above consultancy.

Committee Members		
1	Alfred Anothony	Fiji Procurement Office
1	Semi Dranibaka	Ministry of Forestry
2	Ilaisa Tulele	REDD+ Unit
3	Viliame Rabici	REDD+ Unit
Ministry of Industry and Trade did not send a representative.		

Supplier	Rating
Unique Forestry & Land Use - Germany	1
GAF AG - Germany	2
Green Owl Development - Germany	3
Samuela Lagataki - Fiji	4

As per attached minutes of the meeting, the committee is recommending Unique Forestry & Land Use for the consultancy.

This is to request your endorsement on the committee's recommendation and to proceed with requesting a Financial and Technical Proposal from Unique Forestry & Land Use.

Vinaka.

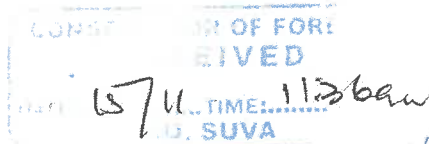
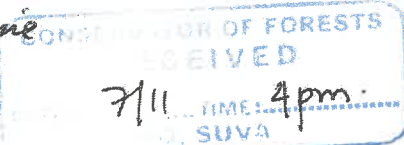
RECEIVED

Date 15/11/19 10:23 AM
Permanent Secretary's Office

Viliame Rabici

(REDD+ NC)

31/10/2019



(C) DCS
Here this met
the consultancy committee
of OMRS?

(B) CF
Evaluation has
been undertaken by
the Evaluation
Panel as per
rating results.
For your approval

EDRD
06/11

(D) CF
The consultancies for
specific deliverables
don't go through
OMRS, only for positions
for which persons
will be employed on part-time
basis.

13/11

(F) Aggie
Make final
to Tulele.
Duela

They are also
undertaking NFI
work in Vanuatu so
supported.
CF 11/11/19.

Technical Evaluation Committee Summary

Item	Response
Agency:	Ministry of Forestry
Scope of procurement:	Design of a National Forest Inventory and Permanent Sample Plots and conducting training of NFI field staff
Contract term:	3 months
Estimated cost :	\$ 60,000

Minutes of meeting for Design a National Forest Inventory and Permanent Sample Plots and conducting training of NFI field staff for REDD+ Unit, Ministry of Forestry held at level M conference room on 30th October, 2019.

1.0 Background

- 1.1 The TEC noted that this procurement relates to the contracting of a consultant to design the National Forest Inventory and Permanent Sample Plots.

2.0 Requirements

- 2.1 The Agency reconfirmed that in summary, the agency's requirement is to procure a consultant that can design an NFI that addresses the gaps of the 2006 NFI is a priority for Fiji to fulfil the national and international obligations. The design of a new NFI should be based on sound statistical and sampling approaches and this assignment should result in unbiased estimation of the forest biomass resources of Fiji.

2.2 Contract dates

The following were noted by the TEC members:

- Contract to start by November, 2019.
- The initial term will be 3 months

3.0 Technical Evaluation Committee panel

- 3.1 The TEC members are:

Role	Name	Organisation
Chair of evaluation panel:	Viliame Rabici	REDD+ Unit
FPO Representative	Alfred Anthony	Fiji Procurement Office
Agency representative	Semi Dranibaka	Ministry of Forestry
Technical advisor	Ilaisa Tulele	REDD+ Unit

4.0 Evaluation methodology

4.1 The TEC members noted and agreed the following:

- THAT the evaluation model to be used is scores to be given according to qualification on the set criteria.

Evaluation criteria and Scoring Criteria

A. Eligibility Criteria					
	S.No.	Eligibility Criteria	Requirement	Compliance	Remarks
	1	Registration certificate of the consulting firm/s	Mandatory	Yes/No	Pass/Fail
	2	Value Added Tax (VAT) Registration.	In case of international company, submit at the time of signing contract		Pass/Fail [In case of National Company, VAT registration is mandatory]
	3	In case of Joint Venture "Joint Venture, or intended joint venture or sub-contracting Agreement"	Mandatory	Yes/No	Pass/Fail
	4	Conflict of Interest as per 1.9 paragraph of the World Bank's Guidelines for Selection and Employment of Consultants -Jan 2011	Mandatory	Yes/No	Pass/fail
B. Ranking Criteria					
RANKING CRITERIA					
	S. No.	Criteria/Sub-criteria	Weight	Points	
	1	General Experiences	10%	10	
	a.	Number of Projects Completed			
	i.	2 project completed	40%	4	
	ii.	2 to 4 projects completed	70%	7	
	iii.	>4 projects completed	100%	10	
	2	Specific/Similar/Relevant Experiences	50%	50.00	
	a.	Number of projects completed in which design of forest inventory based on permanent sample plots were conducted.	20%	20	
	i.	1 project completed	40%	8	

ii.	2 project completed	70%	14
iii.	3 project completed	80%	16
iv.	4 project completed	100%	20
b.	Number of projects completed in which biomass survey / assessments were conducted & results reported.	20%	20.00
i.	1 project completed	40%	8
ii.	2 projects completed	70%	14
iii.	>2 projects completed	100%	20
c.	Number of projects completed in which training (capacity building) of staff in inventory methodology, mensuration, use of latest technology (GPS, GIS) & data entry	15%	15
i.	1-2 project completed	40%	6.00
ii.	>2 projects completed	100%	15.00
d.	Number of projects completed in which the generation of the emission & removal factor data was conducted.	10%	10
i.	1-2 project completed	50%	5
ii.	>2 projects completed	100%	10
3	Organizational setup of the consulting firm	40%	40
a.	Office set up and managerial organization of the firm	25%	10
	Fully fledged organization with Administration & Corporate Divisions (100%)		
	Absent (10%)		
b.	General qualifications and number of key staff	65%	26
i	Leadership Position - Masters Degree & Above	23%	6
	Masters Degree in Forestry Science & Above (100%)		
	Bachelors Degree in Forestry Science (30%)		
	Diploma in Forestry or Related Sciences (10%)		
ii	GIS Remote Sensing Specialist	38%	10
	Part of Team (100%)		
	Absent (10%)		
ii	Forest Biometrician	38%	10
	Part of Team (100%)		
	Absent (10%)		
c.	Annual Turnover in USD (best TWO years of last THREE years)	10%	4
i.	< 0.015 million	0%	0
ii.	0.02 to 0.04 million	20%	1
iii.	0.04 to 0.06 million	40%	2
iv.	0.06 to 0.08 million	60%	2
v.	> 0.08 million	100%	4

Total (1 + 2 + 3)**100%****100**

5.0 Administrative Requirements evaluation

5.1 Bids received

The TEC noted and accepted the following bids and the administrative requirements were assessed accordingly:

Supplier	Address
Green Owl Development	Germany
Unique Forestry & Land Use Germany	Germany
GAF AG	Germany
Samuela Lagataki	Fiji

10.0 Overall Assessment

10.1 The TEC noted the following overall points:

Supplier	Points Scoring	Overall Ranking	Commentary (summary)
Green Owl Development	66.25	3	
Unique Forestry & Land Use Germany	90.75	1	
GAF AG	87	2	
Samuela Lagataki	28.75	4	

11.0 Recommendation

The TEC agreed to recommend Unique Forestry & Land Use Germany for this contract.

The basis for this decision is:

Qualitative


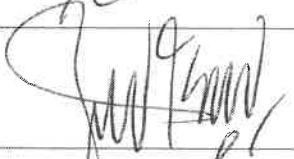
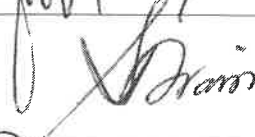

High level of technical expertise and the years of experience in the carrying out forest inventory in a wide range of regions.

12.0 TEC Endorsement

We confirm the following:

- the evaluation is in order and

- no conflict of interest was identified

Full name	Signature	Date
Viliame Rabici		01/11/19.
Ilaisa Tulele		01/11/19
Semi Dranibaka		
Alfred Anthony		05/11/19.

Summary of Scores for the Evaluation of Expressions of Interest (EOI) for "Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI"

Summary of

Scores		Applicant		Criteria	Evaluators/marks				Total	Avg.	Avg. Score
					Semi Granibaka	Alfred Anthony	Vilame Rubici	Ilaia Tulele			
Green Owl Development	1. General Experiences										
	a. Number of Projects Completed			20	10		10	40	10		
	2. Specific/Similar/Relevant Experiences										
	2. a) Number of projects completed in which design of forest inventory based on permanent sample plots were conducted.			10	10	10	30	60	30		
	2. b) Number of projects completed in which biomass survey / assessments were conducted & results reported.			14	8	0	20	42	10.5		
	2. c) Number of projects completed in which training (capacity building) of staff in inventory methodology, mensuration, use of latest technology (GPS, GIS) & data entry conducted.			10	10	10	10	40	10		
	2. d) Number of projects completed in which the generation of the			10	5	0	5	20	5		66.25
	3. Organizational setup of the consulting firm										
	3. a) Office set up and managerial organization of the firm			10	0	0	1	11	3		
	3. b) i) General qualifications and number of key staff; Leadership Position - Masters Degree & Above.			6	6	6	6	24	6		
Unique Forestry & Land Use Germany	3. b) ii) General qualifications and number of key staff; GIS Remote Sensing Specialist			10	10	10	10	40	10		
	3. b) iii) General qualifications and number of key staff; Forest Biometrician			0	0	1	1	2	0.5		
	3. c) Annual Turnover in USD (best TWO years of last THREE years)			0	0	4	2	6	2		
	Total			80	59	51	75	265	66.25		
	1. General Experiences			10	10	10	10	40	10		
	2. Specific/Similar/Relevant Experiences										
	2. a) Number of projects completed in which design of forest inventory based on permanent sample plots were conducted.			10	8	10	10	38	9.5		
	2. b) Number of projects completed in which biomass survey / assessments were conducted & results reported.			14	0	20	20	54	13.5		
	2. c) Number of projects completed in which training (capacity building) of staff in inventory methodology, mensuration, use of latest technology (GPS, GIS) & data entry conducted.			10	10	10	10	40	10		
	2. d) Number of projects completed in which the generation of the			10	5	10	10	35	8.75		
GAFAG, Germany	3. Organizational setup of the consulting firm										
	3. a) Office set up and managerial organization of the firm			10	10	10	10	40	10		
	3. b) i) General qualifications and number of key staff; Leadership Position - Masters Degree & Above.			6	6	6	6	24	6		
	3. b) ii) General qualifications and number of key staff; GIS Remote Sensing Specialist			10	10	10	10	40	10		
	3. b) iii) General qualifications and number of key staff; Forest Biometrician			10	10	10	10	40	10		
	3. c) Annual Turnover in USD (best TWO years of last THREE years)			4	0	4	4	12	3		
	Total			94	69	100	100	363	90.75		
	1. General Experiences			10	10	10	10	40	10		
	2. Specific/Similar/Relevant Experiences										
	2. a) Number of projects completed in which design of forest inventory based on permanent sample plots were conducted.			10	8	4	10	32	8		
Mr. Samuels Logstaki	2. b) Number of projects completed in which biomass survey / assessments were conducted & results reported.			14	20	20	20	74	18.5		
	2. c) Number of projects completed in which training (capacity building) of staff in inventory methodology, mensuration, use of latest technology (GPS, GIS) & data entry conducted.			10	4	10	10	34	8.5		
	2. d) Number of projects completed in which the generation of the			10	5	10	10	35	8.75		
	3. Organizational setup of the consulting firm										
	3. a) Office set up and managerial organization of the firm			10	10	10	10	40	10		
	3. b) i) General qualifications and number of key staff; Leadership Position - Masters Degree & Above.			6	6	6	6	24	6		
	3. b) ii) General qualifications and number of key staff; GIS Remote Sensing Specialist			10	10	10	10	40	10		
	3. b) iii) General qualifications and number of key staff; Forest Biometrician			5	10	1	1	17	4.25		
	3. c) Annual Turnover in USD (best TWO years of last THREE years)			4	0	4	4	12	3		
	Total			89	83	85	91	348	87		
1. General Experiences			7	7	7	10	31	7.75			
2. Specific/Similar/Relevant Experiences											
2. a) Number of projects completed in which design of forest inventory based on permanent sample plots were conducted.			8	8	7	10	33	8.25			
2. b) Number of projects completed in which biomass survey / assessments were conducted & results reported.			0	0	0	0	0	0			
2. c) Number of projects completed in which training (capacity building) of staff in inventory methodology, mensuration, use of latest technology (GPS, GIS) & data entry conducted.			4	0	4	4	12	3			
2. d) Number of projects completed in which the generation of the			0	0	5	5	10	2.5			
3. Organizational setup of the consulting firm											
3. a) Office set up and managerial organization of the firm			0	0	1	1	2	1			
3. b) i) General qualifications and number of key staff; Leadership Position - Masters Degree & Above.			2	0	2	1	5	1.25			
3. b) ii) General qualifications and number of key staff; GIS Remote Sensing Specialist			0	0	1	1	2	0.5			
3. b) iii) General qualifications and number of key staff; Forest Biometrician			0	0	1	1	2	0.5			
3. c) Annual Turnover in USD (best TWO years of last THREE years)			0	0	0	2	2	1			
Total			21	15	36	43	115	28.75			
Name of Evaluators											
1. Ilaia Tulele, Program Leader, REDD+ Unit											
2. Vilame Rubici, REDD+ National Coordinator											
3. Semi Orani, Executive Director Research & Development, Ministry of Forestry											
4. Alfred Anthony, Senior Procurement Officer, Fiji Procurement Office											

Evaluation Criteria for Expressions of Interest (EOI) for "Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI"

A. Eligibility Criteria

S.No.	Eligibility Criteria	Requirement	Compliance	Remarks	APPLICANTS			
					Green Owl Development	Unique Forestry & Land Use Germany	GAFAG Germany	Mr. Samuela Lagataki
1	Registration certificate of the consulting firm/s	Mandatory	Yes/No	Pass/Fail				
2	Value Added Tax (VAT) Registration	In case of international company, submit at the time of signing contract		Pass/Fail (In case of National Company, VAT registration is mandatory)				
3	In case of Joint Venture "Joint Venture, or intended joint venture or sub-contracting Agreement"	Mandatory	Yes/No	Pass/Fail				
4	Conflict of Interest as per 1.9 paragraph of the World Bank's Guidelines for Selection and Employment of Consultants Jan 2011	Mandatory	Yes/No	Pass/fail				

B. Ranking Criteria

RANKING CRITERIA				APPLICANTS			
S. No.	Criteria/Sub-criteria	Weight	Points	Green Owl Development	Unique Forestry & Land Use Germany	GAFAG Germany	Mr. Samuela Lagataki
1	General Experiences	10%	10				
a.	Number of Projects Completed						
i.	2 project completed	40%	4				
ii.	2 to 4 projects completed	70%	7				
iii.	>4 projects completed	100%	10	10	10	10	10
2	Specific/Similar/Relevant Experiences	50%	50.00				
a.	Number of projects completed in which design of forest inventory based on permanent sample plots were conducted.	20%	10				
i.	1 project completed	40%	4				
ii.	2 project completed	70%	7				
iii.	3 project completed	80%	8				
iv.	4 project completed	100%	10	10	10	10	10
b.	Number of projects completed in which biomass survey / assessments were conducted & results reported.	40%	20.00				
i.	1 project completed	40%	8				8
ii.	2 projects completed	70%	14				
iii.	>2 projects completed	100%	20	20	20	20	
c.	Number of projects completed in which training (capacity building) of staff in inventory methodology, mensuration, use of latest technology (GPS, GIS) & data entry	20%	10				
i.	1-2 project completed	40%	4.00				4
ii.	>2 projects completed	100%	10.00	10	10	10	
d.	Number of projects completed in which the generation of the emission & removal factor data was conducted.	20%	10				
i.	1-2 project completed	50%	5	5	10	10	5
ii.	>2 projects completed	100%	10				
3	Organizational setup of the consulting firm	40%	40				
a.	Office setup and managerial organization of the firm	25%	10				
	Fully fledged organization with Administration & Corporate Divisions (100%)			1	10	10	1
	Absent (10%)						
b.	General qualifications and number of key staff	65%	26				
i.	Leadership Position - Masters Degree & Above	23%	6	6	6	6	1
	Masters Degree in Forestry Science & Above (100%)						
	Bachelors Degree in Forestry Science (30%)						
	Diploma in Forestry or Related Sciences (10%)						
ii.	GIS Remote Sensing Specialist	38%	10	10	10	10	1
	Part of Team (100%)						
	Absent (10%)						
iii.	Forest Biometrics	38%	10	1	10	1	1
	Part of Team (100%)						
	Absent (10%)						
d.	Annual Turnover in USD (best TWO years of last THREE years)	10%	4				
i.	< 0.015 million	0%	0				
ii.	0.02 to 0.04 million	20%	1				
iii.	0.04 to 0.06 million	50%	2	2		4	2
iv.	0.06 to 0.08 million	80%	3		4		
v.	> 0.08 million	100%	4				
Total (1 + 2 + 3)		100%	100	74	4	26	43

The Minimum Pass Mark is 60 points

Maximum three consulting firms will be shortlisted on the merit basis.

Name of Evaluator

Signature:

Date:

NAME: TOLLE
30/10/19

Evaluation Criteria for Expressions of Interest (EOI) for "Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI"

A. Eligibility Criteria					APPLICANTS			
S.No.	Eligibility Criteria	Requirement	Compliance	Remarks	Green Owl Development	Unique Forestry & Land Use Germany	GAFAG, Germany	Mr. Samuela Lagataki
1	Registration certificate of the consulting firms	Mandatory	Yes/No	Pass/Fail				
2	Value Added Tax (VAT) Registration	In case of international company, submit at the time of signing contract		Pass/Fail (in case of National Company, VAT registration is mandatory)				
3	In case of Joint Venture "Joint Venture, or intended joint venture or sub-contracting Agreement"	Mandatory	Yes/No	Pass/Fail				
4	Conflict of interest as per 1.9 paragraph of the World Bank's Guidelines for Selection and Employment of Consultants - Jan 2011	Mandatory	Yes/No	Pass/Fail				

B. Ranking Criteria

RANKING CRITERIA				APPLICANTS			
S. No.	Criteria/Sub-criteria	Weight	Points	Green Owl Development	Unique Forestry & Land Use Germany	GAFAG, Germany	Mr. Samuela Lagataki
1	General Experiences	10%	10				
a.	Number of Projects Completed						
i.	2 project completed	40%	4				
ii.	2 to 4 projects completed	70%	7				
iii.	>4 projects completed	100%	10	10	10	10	7
2	Specific/Similar/Relevant Experiences	50%	50.00				
a.	Number of projects completed in which design of forest inventory based on permanent sample plots were conducted.	20%	10				
i.	1 project completed	40%	4				
ii.	2 project completed	70%	7				
iii.	3 project completed	80%	8				
iv.	4 project completed	100%	10	10	10	10	8
b.	Number of projects completed in which biomass survey / assessments were conducted & results reported.	40%	20.00				
i.	1 project completed	40%	8				
ii.	2 projects completed	70%	14	14	14	14	
iii.	>2 projects completed	100%	20				
c.	Number of projects completed in which training (capacity building) of staff in inventory methodology, measurement, use of latest technology (GPS, GIS) & data entry	20%	10				
i.	1-2 project completed	40%	4.00				
ii.	>2 projects completed	100%	10.00	10	10	10	4
d.	Number of projects completed in which the generation of the emission & removal factor data was conducted.	20%	10				
i.	1-2 project completed	50%	5				
ii.	>2 projects completed	100%	10	10	10	10	
3	Organizational setup of the consulting firm	40%	40				
a.	Office set up and managerial organization of the firm	25%	10	10	10	10	
	Fully fledged organization with Administration & Corporate Divisions (100%)						
	Absent (10%)						
b.	General qualifications and number of key staff	65%	26	26	26	26	
i.	Leadership Position - Masters Degree & Above	24%	6	6	6	6	
	Masters Degree in Forestry Science & Above (100%)						
	Bachelors Degree in Forestry Science (30%)						2
	Diplome in Forestry or Related Sciences (10%)						
ii.	GIS Remote Sensing Specialist	18%	10	10	10	10	
	Part of Team (100%)						
	Absent (10%)						
iii.	Forest Biomatrician	38%	10		10	5	
	Part of Team (100%)						
	Absent (10%)						
c.	Annual Turnover in USD (last TWO years of last THREE years)	10%	4				
i.	< 0.015 million	0%	0				
ii.	0.02 to 0.04 million	20%	1				
iii.	0.04 to 0.06 million	50%	2				
iv.	0.06 to 0.08 million	80%	3				
v.	> 0.08 million	100%	4	4	4	4	
Total (1 + 2 + 3)		100%	100				

The Minimum Pass Mark is 60 points

Maximum three consulting firms will be shortlisted on the merit basis.

Name of Evaluator:

Semi V. DRANIBAKA

Signature

30/10/19

Date

Evaluation Criteria for Expressions of Interest (EOI) for "Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI"

A. Eligibility Criteria					APPLICANTS			
S.No.	Eligibility Criteria	Requirement	Compliance	Remarks	Green Owl Development	Unique Forestry & Land Use Germany	GAFAG, Germany	Mr. Samuela Lagataki
1	Registration certificate of the consulting firm/s	Mandatory	Yes/No	Pass/Fail				
2	Value Added Tax (VAT) Registration	In case of international company, submit at the time of signing contract		Pass/Fail [In case of National Company, VAT registration is mandatory]				
3	In case of Joint Venture "Joint Venture, or intended joint venture or sub-contracting Agreement"	Mandatory	Yes/No	Pass/Fail				
4	Conflict of interest as per 1.9 paragraph of the World Bank's Guidelines for Selection and Employment of Consultants - Jan 2011	Mandatory	Yes/No	Pass/Fail				

B. Ranking Criteria

RANKING CRITERIA				APPLICANTS			
S. No.	Criteria/Sub-criteria	Weight	Points	Green Owl Development	Unique Forestry & Land Use Germany	GAFAG, Germany	Mr. Samuela Lagataki
1	General Experiences	10%	10	10	10	10	7
i.	Number of Projects Completed:						
ii.	2 project completed	40%	4				
iii.	2 to 4 projects completed	70%	7				
iv.	>4 projects completed	100%	10				
2	Specific/Similar/Relevant Experiences	50%	50.00				
a.	Number of projects completed in which design of forest inventory based on permanent sample plots were conducted.	20%	10				
i.	1 project completed	40%	4	10	8	8	8
ii.	2 project completed	70%	7				
iii.	3 project completed	80%	8				
iv.	4 project completed	100%	10				
b.	Number of projects completed in which biomass survey / assessments were conducted & results reported.	40%	20.00				
i.	1 project completed	40%	8	8		20	
ii.	2 projects completed	70%	14				
iii.	>2 projects completed	100%	20				
c.	Number of projects completed in which training (capacity building) of staff in inventory methodology, mensuration, use of latest technology (GPS, GIS) & data entry	20%	10				
i.	1-2 project completed	40%	4.00	10	10	4	
ii.	>2 projects completed	100%	10.00				
d.	Number of projects completed in which the generation of the emission & removal factor data was conducted.	20%	10				
i.	1-2 project completed	50%	5	5	5	5	
ii.	>2 projects completed	100%	10				
3	Organizational setup of the consulting firm	40%	40				
a.	Office set up and managerial organization of the firm	25%	10		10	10	
	Fully fledged organization with Administration & Corporate Divisions (100%)						
	Absent (10%)						
b.	General qualifications and number of key staff	50%	25				
i.	Leadership Position - Masters Degree & Above	23%	5	6	6	6	
	Masters Degree in Forestry Science & Above (100%)						
	Bachelors Degree in Forestry Science (30%)						
	Diploma in Forestry or Related Sciences (10%)						
ii.	GIS Remote Sensing Specialist	55%	10	10	10	10	
	Part of Team (100%)						
	Absent (10%)						
iii.	Forest Biometrician	35%	10		10	10	
	Part of Team (100%)						
	Absent (10%)						
c.	Annual Turnover in USD (best TWO years of last THREE years)	10%	4				
i.	< 0.015 million	0%	0				
ii.	0.02 to 0.04 million	20%	1				
iii.	0.04 to 0.06 million	50%	2				
iv.	0.06 to 0.08 million	80%	3				
v.	> 0.08 million	100%	4				
Total (1 + 2 + 3)		100%	100				

The Minimum Pass Mark is 60 points

Maximum three consulting firms will be shortlisted on the merit basis.

Name of Evaluator:

Signature:

Date:

ATROD A.

Evaluation Criteria for Expressions of Interest (EOI) for "Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI"

A. Eligibility Criteria					APPLICANTS			
S.No.	Eligibility Criteria	Requirement	Compliance	Remarks	Green Owl Development	Unique Forestry & Land Use Germany	GAFAG, Germany	Mr. Samuela Lagataki
1	Registration certificate of the consulting firms	Mandatory	Yes/No	Pass/Fail				
2	Value Added Tax (VAT) Registration	In case of international company, submit at the time of signing contract		Pass/Fail [In case of National Company, VAT registration is mandatory]				
3	In case of Joint Venture "Joint Venture, or intended joint venture or sub-contracting Agreement"	Mandatory	Yes/No	Pass/Fail				
4	Conflict of Interest as per 1.9 paragraph of the World Bank's Guidelines for Selection and Employment of Consultants - Jan 2011	Mandatory	Yes/No	Pass/fail				

B. Ranking Criteria

RANKING CRITERIA				APPLICANTS			
S. No.	Criteria/Sub-criteria	Weight	Points	Green Owl Development	Unique Forestry & Land Use Germany	GAFAG, Germany	Mr. Samuela Lagataki
1	General Experiences	10%	10				
a.	Number of Projects Completed						
i.	2 project completed	40%	4				
ii.	2 to 4 projects completed	70%	7				
iii.	>4 projects completed	100%	10	10	10	10	7
2	Specific/Similar/Relevant Experiences	50%	50.00				
a.	Number of projects completed in which design of forest inventory based on permanent sample plots were conducted.	20%	10				
i.	1 project completed	40%	4				
ii.	2 project completed	70%	7			4	7
iii.	3 project completed	80%	8	10	10		
iv.	4 project completed	100%	10				
b.	Number of projects completed in which biomass survey / assessments were conducted & results reported.	40%	20.00				
i.	1 project completed	40%	8				6
ii.	2 projects completed	70%	14				
iii.	>2 projects completed	100%	20		10	10	
c.	Number of projects completed in which training (capacity building) of staff in inventory methodology, mensuration, use of latest technology (GPS, GIS) & data entry	20%	10				
i.	1-2 project completed	40%	4.00				4
ii.	>2 projects completed	100%	10.00	10	10	10	
d.	Number of projects completed in which the generation of the emission & removal factor data was conducted.	20%	10				
i.	1-2 project completed	50%	5		10	10	5
ii.	>2 projects completed	100%	10			10	
3	Organizational setup of the consulting firm	40%	40				
a.	Office set up and managerial organization of the firm	25%	10			10	
	Fully fledged organization with Administration & Corporate Divisions (100%)				10	10	1
	Absent (10%)						
b.	General qualifications and number of key staff	55%	25				
i.	Leadership Position - Masters Degree & Above	23%	6	6	6	6	2
	Masters Degree in Forestry Sciences & Above (100%)						
	Bachelors Degree in Forestry Sciences (30%)						
	Diploma in Forestry or Related Sciences (10%)						
ii.	GIS Remote Sensing Specialist	38%	10	10	10	10	1
	Part of Team (100%)						
	Absent (10%)						
iii.	Forest Economist	36%	10				
	Part of Team (100%)			1	10	1	1
	Absent (10%)						
c.	Annual Turnover in USD (best TWO years of last THREE years)	10%	4				
i.	< 0.015 million	0%	0				10
ii.	0.02 to 0.04 million	20%	1				
iii.	0.04 to 0.06 million	50%	2				
iv.	0.06 to 0.08 million	80%	3				
v.	> 0.08 million	100%	4	4	4	4	
Total (1 + 2 + 3)		100%	100				

The Minimum Pass Mark is 60 points

Maximum three consulting firms will be shortlisted on the merit basis.

Name of Evaluator:

Signature:

Date:

VILHAME RABU

[Signature]

30/10/19

12. Professional Experience Record (relevant Projects):

<i>Date: from (m / y) to (m / y)</i>	11/11 – 03/19
<i>Location:</i>	Germany
<i>Company:</i>	Green Owl Development UG and ARC-Greenlab Berlin
<i>Position:</i>	GIS and Remote Sensing Trainer
<i>Description:</i>	<p>Training on Q-GIS, ArcGIS, gl-forest, waldkat, gl-forest, Erdas, iCognition, GPS (Garmin and Trimble) use in the field of forestry for different forest organisations.</p> <p>In Total more than 25 different training units (2-5 days) had been held for foresters and supervisors of several organisations.</p> <p>Example of Organisations:</p> <p>City of Stralsund; Contact: th.struwe@googlemail.com</p> <p>City Frankfurt; Contact: moeller.frank@arc-greenlab.de</p> <p>Agricultural Chamber of lower Saxony; Contact: Martin.Hillmann@lwk-niedersachsen.de</p> <p>Rheinmetall Defence; Contact: moeller.frank@arc-greenlab.de</p> <p>City of Güstrow; Contact: moeller.frank@arc-greenlab.de</p> <p>Nummrich und Grambole Kg; Contact: moeller.frank@arc-greenlab.de</p> <p>Dr. Rilling forest consulting; Contact: moeller.frank@arc-greenlab.de</p> <p>City of Treuenbrietzen; Contact: moeller.frank@arc-greenlab.de</p> <p>City of Wittstock; Contact: moeller.frank@arc-greenlab.de</p> <p>and others</p>

<i>Date: from (m / y) to (m / y)</i>	01/17 – 12/17
<i>Location:</i>	Germany
<i>Company:</i>	Green Owl Development UG
<i>Position:</i>	Teamleader
<i>Description:</i>	Carbon Inventory 2017, Germany-wide carbon inventory to collect the data basis for the National Inventory Reports NIR behalf of the Federal Republic of Germany Contact: frank.schwitzgebel@thuenen.de

<i>Date: from (m / y) to (m / y)</i>	08/2016 – 03/2017
<i>Location:</i>	Germany
<i>Company:</i>	Agricultural Chamber of Lower Saxony
<i>Position:</i>	Project Coordinator
<i>Description:</i>	GeProOpt-Holz: Optimization of the timber supply chain from the forest to the lumber mill in private forests in north western Germany with the support of Information Technology (including GIS and remote sensing) Contact: Martin.Hillmann@lwk-niedersachsen.de

<i>Date: from (m / y) to (m / y)</i>	02/2015 to 03/2017
<i>Location:</i>	Germany
<i>Company:</i>	Agricultural Chamber of Lower Saxony
<i>Position:</i>	Head-GIS-Coordinator
<i>Description:</i>	Adaptation, improvement, maintenance of the Geographic Information System of the Agricultural Chamber of Lower Saxony (600 000 ha of Forest / 200 Users / Arc-GIS Server Environment) Contact: Martin.Hillmann@lwk-niedersachsen.de

<i>Date: from (m / y) to (m / y)</i>	08/2016
<i>Location:</i>	Fiji
<i>Company:</i>	Green Owl Development UG
<i>Position:</i>	Consultant
<i>Description:</i>	The evaluation, analysis and adjustment of the second harvesting rotation the Nakavu demonstration area with a special focus on SFM, RIL, GIS and REDD+, for GIZ Contact: lal.sanjana@gmail.com

<i>Date: from (m / y) to (m / y)</i>	03/2015 – 08/2015
<i>Location:</i>	Germany
<i>Company:</i>	Green Owl Development UG
<i>Position:</i>	Consultant
<i>Description:</i>	Forest inventory - 160 ha for Agricultural Chamber of Lower Saxony

<i>Date: from (m / y) to (m / y)</i>	10/14 – 11/14
<i>Location:</i>	Fiji
<i>Company:</i>	GIZ
<i>Position:</i>	Consultant
<i>Description:</i>	The evaluation, analysis and adjustment of the second harvesting rotation the Nakavu demonstration area with a special focus on SFM, RIL, GIS and REDD+, for GIZ Contact: lal.sanjana@gmail.com

<i>Date: from (m / y) to (m / y)</i>	07/14 - 09/14
<i>Location:</i>	Germany
<i>Company:</i>	Forst Consulting

Green Owl Development UG (haftungsbeschränkt)
 Geschäftsführer: Dirk Frankenhauser, Jan-Hendrik Hofmann
 Handelsregister: HRB 166437 B / Str.- Nr.: 37/316/30356USt.- ID.: DE 815 560 285
 Berliner Strasse25, 13189 Berlin, Tel. +49 (0)152 287 291 38, Email questions@greenowldevelopment.de
 Raiffeisenbank Thannhausen eG, IBAN DE18 7206 9235 0000 105821 / BIC GENODEF1THS

<i>Position:</i>	Assistent
<i>Description:</i>	Forest inventory - 700 ha

<i>Date: from (m / y) to (m / y)</i>	04/14
<i>Location:</i>	Fiji
<i>Company:</i>	Ministry of Forests
<i>Position:</i>	Trainer
<i>Description:</i>	Workshop on opensource GIS-Software (Q-GIS) and GPS (Garmin Map64) use in modern Forestry Contact: lal.sanjana@gmail.com

<i>Date: from (m / y) to (m / y)</i>	11/13 – 05/14
<i>Location:</i>	Fiji
<i>Company:</i>	GIZ
<i>Position:</i>	Assistent
<i>Description:</i>	Preparation of the second logging rotation in the NFMPP Area, inventory and harvesting planning Contact: daniel.plugge@giz.de

<i>Date: from (m / y) to (m / y)</i>	08/12 – 11/13
<i>Location:</i>	Germany
<i>Company:</i>	ARC-GREENLAB
<i>Position:</i>	Consultant – geographical information systems and remote sensing
<i>Description:</i>	Developing of a GIS supported forest management tool, gl-forest and wald-kat web Contact: moeller.frank@arc-greenlab.de

<i>Date: from (m / y) to (m / y)</i>	04/12 – 08/12
<i>Location:</i>	Germany
<i>Company:</i>	LFE - Landeskompetenzzentrum Forst Brandenburg (Brandenburg Forest Authority)
<i>Position:</i>	Scientific Assistant – remote sensing
<i>Description:</i>	Project Pomerania, estimating forest biomass from high resolution satellite images in the Pomerania region

<i>Date: from (m / y) to (m / y)</i>	02/12 – 08/12
<i>Location:</i>	Germany
<i>Company:</i>	Berliner Forsten and University of Applied Science Eberswalde
<i>Position:</i>	Scientific Assistant - GIS
<i>Description:</i>	Forestgrazing on the sewagefarm Hobrechtsfelde GIS analysis and map preparation / Derivation of tree species composition using remote sensing data

<i>Date: from (m / y) to (m / y)</i>	10/09 – 05/10
<i>Location:</i>	Fiji
<i>Company:</i>	Silvicultural Research Division / Ministry of Fisheries and Forests
<i>Position:</i>	Intern
<i>Description:</i>	Research on tree regeneration on skidtracks in tropical rainforests, 20 years after logging Contact: jtauraga@gmail.com

14. Publications:

- (1) Biomass estimation for forests using remote sensing and modeling (co-authors: S. Kärger, A. Janzen, S. Klinner) Eberswalder Forstliche Schriftenreihe Band 56 Eberswalde (2014), p. 50-79

- (2) Carbon storage and economic prospects in sustainably managed tropical rainforests in Fiji. (co-authors: S. QUALIDUADUA , D. PLUGGE, M. MUSSONG). Abstracts.FoWiTa Freiburg (2016), p. 95.

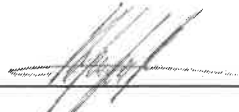
Unpublished papers and reports

- (1) Technology Adaptation to environmentally friendly and environmentally friendly management of re-wetted sites in the forest (co-author: M MUSSONG), Green Owl Development, 2016, 28 pp.

Certification:

I, the undersigned, certify that to the best of my knowledge, these data correctly describe me, my qualifications and my experience.

Jan-Hendrik Hofmann



3 April 2019

Name of expert

Signature

Date

Dirk Frankenhauser Geschäftsführer



3 April 2019

Name of authorised representative

Signature

Date

Green Owl Development

UG (haftungsbeschränkt)

CURRICULUM VITAE

1. Name

Surname	De Vletter
Given names	Jaap
Date of birth	13-01-1949
Sex	Male
Nationality	Dutch
Profession	tropical forest management adviser

2. Present Address

Address: Sumatrastraat 13, 6707 EE Wageningen, the Netherlands
Tel: +31-317-414952 / +31-6-22340832
E-mail: jaap.devletter@gmail.com

3. Key Qualifications/Fields of Experience

- Inventory and sustainable management of tropical natural forests
- Participatory forest management, community forestry, ecosystem services
- Project monitoring feasibility studies, project evaluation and review
- Capacity building, training of professional staff, technicians and target groups

4. Summary of work experience

Until March 2014 I was co-ordinator of the **BSc specialization Tropical Forestry (TF) at Van Hall-Larenstein (VHL) University of Applied Sciences**, Velp, NL. I was responsible for the development and implementation of a competency-based curriculum. I lectured on various subjects related to the TF domain (including forest inventory, management and yield regulation) and dealt with cross-cutting themes such as international cooperation and sustainability. After 2014 I remained attached to VHL as external partner on a part-time basis (embedded consultant).

After March 2014, I took up again my activities as **free-lance consultant**. Since 1995, I have carried out > 80 missions to a wide variety of countries on all continents, mainly commissioned by German organisations (GIZ, GFA, Gopa, etc.). My work includes advising on forest inventory, sustainable forest management, community forestry development, project evaluation and project feasibility assessment, education and training.

Between 1984 and 1994, I worked for the German Agency for Technical Co-operation (GTZ, now GIZ). The first half of this 10-years' period I spent in **Ethiopia**, with the GTZ Ethio-German Reforestation Project, where I trained forest technicians in fields such as forest inventory, erosion control and plantation forest management. The second half of that period I spent in **Fiji** (S.W. Pacific), with the GTZ Fiji-German Forestry project, where I developed a program of community-based natural forest management, agroforestry and forestry extension. I assisted with the transition of this bilateral project into a regional programme.

I started my career in **Suriname**, where I worked between 1975 and 1984 for the National Forest Service (LBB). Initially I was responsible for the management of a programme of applied (forestry) research, later the emphasis shifted to forest policy development, education and training. During

this period I was working together intensively with forest concession holders and sawmill operators.

5. Regional Expertise

Asia / Pacific:

- Fiji, Vanuatu, Samoa, Niue, Solomon Islands,
- Vietnam, Laos, Cambodia, PR China, Malaysia
- Philippines, Indonesia
- Nepal, Bhutan

South America:

- Suriname, Brazil

Africa:

- Ethiopia, Eritrea
- Ghana,
- Burkina Faso

Europe:

- Bulgaria, Albania
- Germany (lecturing at University of Applied Sciences **Eberswalde**)
- Netherlands (lecturing at VHL University of Applied Sciences **Larenstein**)

6. Languages

<i>Language</i>	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>
English	Excellent			
Dutch	Mother tongue			
German	Excellent			
French		Good		
Spanish			Fair	

7. Educational record

Wageningen University, the Netherlands, specialisation Tropical Forestry, "Ingenieur" (ir – MSc), June 1975, cum laude, main subjects taken: tropical forest management planning, tropical silviculture, tropical soil science, phytopathology.

8. Employment record

Date: from January 1995 to present

Country: **based in the Netherlands**

Position: self-employed consultant in capacity building, (forest development) project planning, implementation and evaluation

Date: from January 2005 to present:

Country: **Velp, the Netherlands**

Employer: VanHall-Larenstein University of Applied Sciences

Position: co-ordinator Major Tropical Forestry (after 2014 embedded consultant)

Date: from October 1998 to February 1999

Country: **Germany**

Employer: University of Applied Sciences Eberswalde

Position: Guest Lecturer at the course "international forest ecosystem management"

Date: from 08.1989 to 01.1995

Country: **Fiji Islands**

Employer: German Agency for Technical Co-operation (GTZ, now GIZ)

Position: Team leader Fiji-German Forestry project. Communal natural forest management, forest inventory and monitoring, agroforestry, training and awareness creation.

Date: from 12.1984 to 06.1989

Country: **Ethiopia**

Employer: German Agency for technical Co-operation (GTZ, now GIZ)

Position: Team member Ethio-German Reforestation Project. Erosion control through (re) forestation, forest management planning, selection of national forest priority areas, training of technicians and target groups

Date: from 12.1975 to 02.1984

Country: **Suriname**

Employer: National Forest Service / Ministry of Natural resources, later: Ministry of Agriculture

Position: Team member research division, from 83: head of the research division and co-ordinator for research and information at the Ministry of Agriculture

Wageningen, the Netherlands, October 2019

Curriculum Vitae

Contact Information

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E-mail mmussong@hnee.de, mmussong@greenowldevelopment.de

Personal Information:

Date of birth 29.09.1960
Gender: Male
Nationality German

Profession Professor, forestry adviser

Key Qualifications/Fields of Experience

- Professor for forest operations and engineering
- Forestry education and applied research (programme director, curricula development, international co-operation, research adviser)
- Sustainable forest management, forest utilization, and forest policy (afforestation, silviculture, forest inventories/PSP, forest harvesting and economics, forest policy development, community forestry, REDD+)
- Project monitoring and evaluation, feasibility studies.

Educational record

1982-1986 Master study in "Forestry Science" at the University of Freiburg/Germany.
Final degree: **Diplom-Forstwirt** (M.Sc.for.)

1987-1990 Doctorate at the University of Göttingen/Germany. Final degree: **Dr.forest.**

1991-1993 Trainee with the State Forest Service of Hesse/Germany. Final degree: **Forstassessor**
(certified forest engineer)

1991-1995 Additional study of tropical and subtropical forestry at the University of Göttingen.
Final degree: **M.Sc.forest.tropic.**

Awards

2006 **Medal of Honour** from the Faculty of Forestry Sciences, Agricultural University
Tirana/Albania for co-operation in forestry education and research

2010 **Dr. honoris causa** from the Faculty of Forestry Sciences, Agricultural University
Tirana

Honorary positions

Member of the Church Council, St. Peter und Paul, Eberswalde (since 11/2011)

Member of the scientific board of Futuro Verde Foundation - Economy with Responsibility (since 05/2014)

Head of Tornow village, Eberswalde municipality (since 06/2014)

Others **Shareholder** of the international consulting company **Green Owl Development UG**, Berlin (since 3/2015)

Languages

German	mother tongue
English	fluent
French, Chinese	basic knowledge

Regional Expertise

- Pacific Fiji, Kiribati, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu
- Asia PR China (Beijing, Chongqing, Gansu, Hebei, Heilongjiang, Liaoning, Ningxia, Shanxi, Shaanxi, Xinjiang), Malaysia
- Africa Ethiopia, Ghana, Namibia
- America Canada, Costa Rica, Guyana
- Europe Albania, Bosnia and Herzegovina, Denmark, Germany, Italy, Kosovo, Macedonia, Montenegro, Poland, Portugal, Romania, Sweden, Switzerland, The Netherlands

Co-operation Partners

African Bamboo PLC, Ethiopia
BMBF Bundesministerium für Bildung und Forschung, Germany
BMEL Bundesministerium für Ernährung und Landwirtschaft, Germany
CNVP Connecting Natural Values and People, Albania
CSF Chinese Society of Forestry, PC China
DAAD Deutscher Akademischer Austauschdienst, Germany
DCKZ German-Chinese Centre of Competence GmbH, Magdeburg/Germany
DTPEB Datong Poplar Experimental Bureau, PR China
DFS Deutsche Forst Service GmbH, Germany
ELM Evangelisch-Lutherisches Missionswerk in Niedersachsen, Ethiopia
FAO Food and Agriculture Organization, Rome/Italy
FFD Fiji Forestry Department, Fiji
FuturoVerde Foundation, Germany
GFA GFA Terra Systems, Germany
Georg-Ludwig-Hartig Foundation, Germany
GOPA Gesellschaft für Organisation, Planung und Ausbildung, Germany
Green Owl Development UG, Berlin, Germany
GTZ/GIZ Deutsche Gesellschaft für Technische/Internationale Zusammenarbeit, Germany
Hansestadt Rostock, Forestry administration, Germany
HRK Hochschulrektorenkonferenz, Germany
Katie Paterson Studio, Berlin/Germany
KfW Kreditanstalt für Wiederaufbau, Germany
Kiwi Roads GmbH Berlin/Germany
KWF Kuratorium für Waldarbeit und Forsttechnik, Germany
MLUR Brandenburgisches Ministerium f. Landwirtschaft, Umwelt u. Raumordnung, Germany
NMWK Niedersächsisches Ministerium für Wissenschaft und Kultur, Germany
Ombili Foundation, Namibia
Pan Forestal Berlin/Germany
PME Polish Ministry of Environment, Poland
PuroVerde Paraiso Forestal S. A., Costa Rica
REIF e.V. Reforestation initiatives Futur, Portugal
Samartex Timber & Plywood Co. Ltd., Ghana
SPC Secretariat of the Pacific Community, Fiji
WHH Welthungerhilfe, Germany (North Korea)

Experience Record

Since 06/98

Acting Professor, **since 02/99 Professor** for forest operations and engineering and director (06/98-08/02) of the study programme (BSc.) „International Forest Ecosystem Management“ at the University of Applied Science, now University for Sustainable Development, in Eberswalde/Germany

- **10/19:** Fact finding mission on university co-operation with Kosovo and Albania (HNEE)
- **08/19:** Training course for North Korean forestry experts (inventory, silviculture, nursery, reforestation, pruning, fast growing tree species) in Germany (WHH)
- **02/19, 07/19, 10/19:** Consultancy on SFM development for Zhong Cun demonstration forest (BMEL//DFS/HessenForst)
- **09/18:** Fact finding mission on afforestation with rood-breeding poplar species in northern Shanxi/PR China (DTPEB/HNEE/CSF)
- **08/18, 05/18:** Presentation on adapted forest access infrastructure for sustainable Oak forest management at the Oak working group meeting of the Chinese Society of Forestry in Beijing/PR China (CSF)
- **06/18:** Fact finding mission on restoration possibilities of close-to-nature forests in central Portugal (HNEE)
- **05/18:** Presentation on Re-discovered Poplar breedings and their potential for multi-purpose and close-to-nature forestry at the Shanxi-German forestry cooperation workshop in Taiyuan/PR China (GIZ)
- **03/19, 03/18, 02/17, 03/14, 08/13, 01-03/12, 11/11,:** Consultancy for Regional Project on Climate Protection through Forest Conservation in Pacific Island Countries (SPC/GIZ) in Fiji (integration of SFM und REDD+; timber and carbon inventory, methodology development, silviculture and management prescriptions; team leader)
- **10/18, 06/18, 01/18, 10/19:** Training course for Chinese forestry experts (inventory, silviculture, wood harvesting technology and infrastructure) in Germany (DCKZ)
- **09/18:** Training session for the Qinghai Court of Audit (practical field monitoring of afforestation projects) in Germany (DCKZ)
- **11/17:** Participation and oral presentation (Integrating Sustainable forest management and REDD+ in Fiji) at the UN Climate Change Conference (COP 23) in Bonn/Germany (GIZ)
- **09/17:** Participation and oral presentation (Diameter Limit Tables as basic silvicultural tool for the sustainable management of Fijian rain forests) at the IUFRO World Congress in Freiburg/Germany (GIZ)
- **08/17:** Fact finding mission on natural regeneration in poplar and pine stands in northern Shanxi/PR China (HNEE)
- **07/17:** Forest carbon inventory in Bavaria/Germany (Thünen Institute/GOD)
- **05/17:** Participation and oral presentation (Co-operation activities between HNEE and forestry related institutions in Kosovo) at the Travelling Workshop on Education and Technology Transfer, Kosovo (BMBF)
- **01/17:** Fact finding mission on vocational training for forest technicians in Kosovo, Albania and Kosovo (GOD)
- **09/16:** Participation and oral presentation (Simplifying carbon monitoring in tropical rain forests) at the Regional IUFRO Congress for Asia and Oceania, Beijing, PR China (GIZ)

- **10/15:** Organisation of study tours of Albanian foresters on private and communal forest management in Germany (CNVP)
- **09/15:** Participation and poster presentation (Linking SFM with REDD+) at the World Forestry Congress, Durban, South Africa (GIZ)
- **11/14:** Consultancy for PuroVerde and FuturoVerde, Costa Rica (plantation forestry management, social responsibility)
- **09/14:** Consultancy for Secretariat of the Pacific Community (SPC) and Fiji Forestry Department (development of diameter limit tables for SFM in natural forests)
- **since 05/14:** Member of the Scientific Board of FuturoVerde, Foundation for Economic Activities with Responsibility
- **01/14:** Training course on forest inventory data analyses for forestry personnel from the Fiji Islands (SPC/GIZ)
- **11/13:** Consultancy for Evangelisch-Lutherisches Missionswerk in Niedersachsen, Tschallia, Ethiopia (sustainable forest management and utilization)
- **02/13:** Consultancy for African Bamboo PLC, Ethiopia (Bamboo inventory and harvesting planning)
- **08/12:** Consultancy for Ombili Foundation, Namibia (project management, stakeholder integration, utilization of shrub land)
- **10/11:** Fact finding mission on cooperation possibilities between Shanxi Forestry Administration/PR China and HNEE.
- **02/11:** Consultancy for Samartex Timber & Pywood Co. Ltd., Ghana (forest roading)
- **09/10, 04/10, 11/09, 07/09:** Adviser for University development (Curricula reform) at the Faculty of Forestry Sciences, Agricultural University Tirana/Albania (DAAD)
- **01/10, 11/09, 11/08, 08/08:** Consultancy for Secretariat of the Pacific Community (SPC/FAO; Development of a harmonized forest monitoring system (MAR) for the Pacific Island Countries)
- **02/09:** Fact finding mission and adviser for a German member of parliament on urban forestry projects in Chongqing/PR China
- **01-03/08:** Preparation of a co-operation agreement between the University of South Pacific/Fiji, Fiji Forestry Department, University of Applied Sciences Larenstein/The Netherlands and University of applied Sciences Eberswalde/Germany. Adviser for the Fiji Forestry Department in curricula development for the forestry technician school, Colo I Suva, Fiji.
- **Since 11/07:** permanent research adviser for Forestry Research Division, Department of Forestry, Fiji
- **11/07:** Consultancy for the Pacific-German Regional Forestry Project (GTZ/SPC) in Fiji (forest harvesting code amendment)
- **10/07:** Consultancy for the Pacific-German Regional Forestry Project (GTZ/DFS/GOPA) in Tonga (forest policy development)
- **09/07, 09/06, 07/05, 09/04, 10/03:** Guest lecturer and adviser for university development/co-operation at the Faculty of Geography (Shkodra/Albania) and Faculty of Tourism (Kotor/Montenegro) (HRK)

- **07/07, 06/07, 07/06, 05/06, 05/05:** Guest Lecturer (Tropical Field Research) at the University of Applied Sciences Larenstein/The Netherlands and organisation of study tours for Dutch students to Germany (DAAD).
- **12/06:** Presentation on afforestation projects in China at the Institute of East Asean Studies at the University Duisburg-Essen/Germany.
- **11/06, 09/06, 10/05, 02/05, 09/04, 07/04, 11/03, 06/03, 10/02, 05-06/02, 02/02, 10/01, 04-05/01, 10/00:** Co-ordinator of the forestry education and research network (ForeSTEP), advisor for university development under the Stability Pact for South East Europe (Tirana/Albania, Sarajevo/Bosnia and Herzegovina, Skopje/Macedonia, Prishtina/Kosovo und Constanta/Romania; DAAD)
- **03/06:** Presentation at the Sino-German symposium on sustainable use of non-timber forest products (Göttingen/Germany (DFG))
- **03/06, 11/04:** Research project on *Populus bolleana* afforestations in Northern China (Georg-Ludwig-Hartig Foundation/BMBF); negotiations on university cooperation between the forestry faculties of Taiyuan, Lanzhou und Urumqi / PR China.
- **10/05, 09/03:** Co-ordination of international ForeSTEP Workshops in Eberswalde (DAAD).
- **02/05, 07/04, 11/03, 05/02:** Adviser for university and curricula development/co-operation at the Faculty of Agriculture, University of Prishtina/Kosovo (DAAD)
- **09/04:** Workshop co-ordinator and adviser for university development/co-operation at the Forestry Faculty Sarajevo (Bosnia and Herzegovina) (DAAD)
- **05/04:** Guest lecturer (Forest Harvesting and Transport) at the Forestry Faculty in Warsaw/Poland (DAAD)
- **10/03, 06/03, 11/02, 05/02, 02/02, 11/01, 05/01, 03/01:** Guest lecturer and adviser for university development/co-operation at the Faculty of Forestry, Agriculture University of Tirana (Albania/Kosovo) (DAAD, GTZ)
- **09/03, 05/00:** Organisation of study tours of Albanian lectures and students to Germany (DAAD)
- **04/03:** Consultancy for the Pacific-German Regional Forestry Project (GTZ/DFS/GOPA) in Fiji (forest management, forest policy)
- **09/02:** Consultancy for the German rectors conference (HRK) in Albania and Montenegro (feasibility study on study programme development; team leader)
- **08/02:** Invitation from the Canadian Government to a study tour to Saskatchewan and British Columbia
- **07/02:** Participant in the workshop Forestry Education in the Carebean Countries, Georgetown/Guyana (DAAD)
- **06/02, 02/02, 11/01, 09/01,:** Training course on forest road building for forest technicians (Brandenburg Forest Administration)
- **04/02:** Consultancy for the Project GCP/ALB/004/ITA (FAO) in Albania (silviculture, forest management)
- **02/01:** Consultancy for the Pacific-German Regional Forestry Project (GTZ) in Fiji (silviculture and forest management training)
- **10/99, 10/00:** Adviser for university and co-operation development at the Faculty of Forestry, Agriculture University of Tirana (Albania) (DAAD)

- **09/98, 09/99:** Consultancies for the KfW Afforestation Project Shanxi/PR China (monitoring and evaluation, team leader)
 - **07-08/99:** Consultancy for the Pacific-German Regional Forestry Project (GTZ) in Samoa and Fiji (forest inventory, silviculture, forest management)
 - **since 07/98:** Consultant (retainer contract) for KfW
- 03/98 - 05/98 Self-employed forestry consultant:
- **03/98:** Consultancy for the Pacific-German Regional Forestry Project (GTZ) Vanuatu (silviculture, forest management)
 - **05/98:** Consultancy for the KfW Afforestation Project Shaanxi II/ PR China (evaluation of a feasibility study)
- 01/94 - 02/98 Scientific assistant at the Hessian Forest Research Institute, Hann. Münden/Germany:
- Backstopping of forestry projects in the PR China
 - **10-11/97, 11/97:** Consultancies for the KfW Afforestation Project Shanxi (monitoring and evaluation, economic studies)
 - **06/97:** Organization of an international symposium on afforestation in semi-arid regions in China (GTZ)
 - **03-04/94, 03-04/95, 09-10/95, 05-06/96, 09-10/96, 02/97.:** Consultancies for the Chinese-German Afforestation Project (GTZ) in the provinces of Shanxi and Heilongjiang (economic studies, planting techniques, team leader 09-10/95, 09-10/96)
 - **02-03/95, 07-08/96, 02/98:** Consultancies for the Pacific-German Regional Forestry Project (GTZ) in Fiji, Vanuatu, Niue and Samoa (cost/benefit analyses for logging and forest management, silviculture, forest management)
- 07/93-12/93 Self-employed forestry consultant:
- Scientific adviser for the forestry journal Forst & Technik, Berlin/FRG
 - **10-11/93:** Consultancy for the Fiji-German Forestry Project/GTZ (economic analyses)
- 07/91-06/93 Trainee program with the Forest Service of Hesse/Germany:
- **04-05/92:** Consultancy for the Fiji-German Forestry Project/GTZ (silviculture (DLT development), work studies)
- 01/87-06/91 Scientific assistant at the Institute of Forestry Work Science at the University of Göttingen/Germany (institute management, teaching (lectures, seminars, study tours, research):
- **04-06/91** Internship at the Fiji-German Forestry Project/GTZ (forest inventory, opening-up planning, mangrove forest management)
- 10-12/86 Scientific assistant at the Institute of Forest Zoology at the University of Freiburg/Germany

107 Publications and reports with main focus on forestry and natural resource management

Eberswalde, 10.10.2019



Michael Mussong

Publications

- (1) *Untersuchungen über das chemische Kommunikationssystem des Buchenborkenkäfers Taphrorychus bicolor (Herbst) (Coleoptera: Scolytidae).* In: Freiburger Waldschutz-Abhandlungen (1986), Band 6. Hrsg. von: Forstzoologisches Institut der Univ. Freiburg: Selbstverlag, p. 59-106.
- (2) *Acetophenone in the Aggregation of the Beech Bark Beetle, Taphrorychus bicolor (Col., Scolytidae).* (co-authors: U. KOHNLE, V. DUBBEL und W. FRANCKE). Zeitschrift für angewandte Entomologie, Band 103 (1987), No. 3, p. 249-252.
- (3) *Forstliche Hochschulwoche in Göttingen 1987.* Holz-Zentralblatt, 113. (1987), No. 87, p.1255-1257.
- (4) *Forsttechnische Entwicklungen in Dänemark. Forstmaschinen-Vorführung des Dänischen Instituts für Forsttechnik.* Allgemeine Forst Zeitschrift (1987), No. 46, p.1200-1201.
- (5) *Multiple Regressionsmodelle maximaler Treffsicherheit für die Anwendung im SAS-System.* Forstarchiv (1989), No. 6, p.236-238.
- (6) *Verwendung mobiler Personal Computer für forstliche Arbeitszeitstudien.* Forsttechnische Informationen, 42. Jahrgang (1990), No. 2, p.9-12.
- (7) *Überlegungen zum Einsatz von Kranharvestern für Wertästungsmaßnahmen.* Forsttechnische Umschau. In: Forstarchiv (1990), No. 3, p.124.
- (8) *Oberbegriffe forstlicher Mechanisierung - Vorschlag zur Neufassung einer operationalen Terminologie.* Forstarchiv (1990), No. 4, p.140-144.
- (9) *Harvestertechnologie im Bauernwald - Entwicklungstendenzen in der dänischen Forstwirtschaft.* (co-author: W. RASCHKA) Holz-Zentralblatt, 116. (1990), No. 134, p. 2116, 2118.
- (10) *Vollmechanisierung.* Forst & Technik (1990), No. 10/11, p.29-30.
- (11) *Zur Wertästung der Douglasie mit Klettersäge KS 31.* Dissertation Univ. Göttingen (1990), 155 pp.
- (12) *Zur Mechanisierung in der Waldarbeit.* Allgemeine Forst Zeitschrift (1991), No. 3, p.106.
- (13) *Überlegungen zur Wertästung.* Holz-Zentralblatt, 117. (1991), No. 20, p.317-319.
- (14) *Alternativen in der Unkrautbekämpfung.* Allgemeine Forst Zeitschrift (1991), No. 5, p. 221.
- (15) *Wegeunterhaltung und Kulturbegründung.* Forst & Technik (1991), No. 3, p.12-13.
- (16) *Entwicklung der Waldarbeiterverdienste.* Allgemeine Forst Zeitschrift (1991), No.11, p. 555-558.
- (17) *Die Klettersäge - besser als ihr Ruf.* Holz-Zentralblatt, 117. (1991), No. 80, p.1294-1296, 1299.
- (18) *Natural Forest Management Pilot Project Update.* Fiji Department of Forestry, Forestry Quarterly (1991), No. 42, p.8-9, 11.
- (19) *Zeitbedarfswerte für die Ausbringung von Mulchkartons.* (co-author: M. SCHWARZ), Allgemeine Forst Zeitschrift (1991) No. 19, p.971-972.
- (20) *Forsttechnik auf der Holzmesse Klagenfurt.* (co-author: W. RASCHKA), Holz-Zentralblatt, 117. (1991), No. 142, p.2302.
- (21) *Zu: Eine bedarfsgerechte Lohnform für die deutsche Forstwirtschaft.* Allgemeine Forst Zeitschrift (1992), No. 7, p.362-363.
- (22) *Ökologie.* Forst & Technik (1992), No. 4, p.7.
- (23) *Waldarbeit im Umbruch.* Forst & Technik (1992), No. 5, p.5-6.
- (24) *Die Holzversorgung der Lüneburger Saline.* Der Wald (1992), No. 5, p.174-175.

- (25) *Fijian Landowner Tree Selection System (FTS) - Proposal for a Differentiated, Species-specific Tree Selection System on the Basis of Variable Diameter Limits, for Logging and Sustainable Management of Rain Forests in Fiji, with Special Reference to the NFMPP Area; its Suitability for Field Application by Forest Owning Communities.* Fiji Forestry Department / Fiji-German Forestry Project (1992), Technical Report No. 15, 33 pp. and annex.
- (26) *Forstwirtschaft in Fidschi.* Forst & Technik (1992), No. 10, p.8-10.
- (27) *Zur Diskussion um zukünftige Lohnformen in der Waldarbeit: Das Lohnzulagensystem.* Allgemeine Forst Zeitschrift (1993), No. 9, p.439-441.
- (28) *Mangrovenwälder auf Fidschi.* (co-author: J. DE VLETTER), Forst und Holz (1993), No. 23, p.681-682.
- (29) *Pre-Study of an Economic Evaluation of Different Logging Intensities in the Natural Forest Pilot Project.* Fiji Forestry Department / Fiji-German Forestry Project (1993), Technical Report No. 18, 33 pp. and annex.
- (30) *Anwendung des Göttinger Pflanzspatens.* Chinesisch-Deutsches Aufforstungsprojekt (1994), Merkblatt No. 8, 10 pp.
- (31) *Angepaßte Pflanzverfahren für China.* Forst & Technik (1994), No. 11, p.6-7.
- (32) *Welchen Beitrag können die Erfahrungen der deutschen Forstwirtschaft zur Waldbegründung mit geeignetem forstlichen Vermehrungsgut in Entwicklungsländern leisten?* (co-authors: H. WEISGERBER, D. KOWNATZKI) GTZ-Wald-Info (1994), No. 15, p.24-27.
- (33) *Mobile Sägewerke - Schnittholzproduktion für Eigenbedarf und Nebenerwerb.* Forst & Technik (1995), No. 1, p.4-6.
- (34) *Costs and Benefits of Logging and Forest Management in the Natural Forest Management Pilot Project.* Fiji Forestry Department / GTZ-Regional Forestry Project South Pacific (1995), Technical Report No. 26, 40 p. and annex..
- (35) *Natural Forest Management Pilot Project: Ein Ansatz zur nachhaltigen Bewirtschaftung von kommunalen tropischen Regenwäldern in Fidschi.* (co-author: J. DE VLETTER), Forstarchiv (1995), No. 3, p.95-100.
- (36) *Technik zur Produktion von Weihnachtsbäumen und Schmuckreisig.* Forst & Technik (1995), No. 12, p.4-7.
- (37) *Natural Poplar Resources in China and their Significance for Breeding and Afforestation.* (co-authors: H. WEISGERBER, D. KOWNATZKI), Silvae Genetica 44 (1995/1996), No. 5-6, p.298-303.
- (38) *Ökonomische Auswirkungen unterschiedlicher Nutzungsintensitäten in tropischen Regenwäldern Fidschis.* (co-authors: K. SINGH, J. LAQUERETABUA, J. DE VLETTER), Forstarchiv (1996), No. 2, p.82-87.
- (39) *Natural Forest Management Pilot Project: An Approach to the Sustainable Management for Communally Owned Tropical Rainforests in the Fiji Islands.* (co-author: J. DE VLETTER), Plant Research and Development, 43 (1996), p.62-74.
- (40) *Soil Erosion Control by Means of Planting Genetically Well Adapted Forest Trees - Development and Perspectives in Semi-arid Regions in Northern Shanxi, PR China.* (co-authors: H. WEISGERBER, D. KOWNATZKI), ISCO-Proceedings Bonn (1996), p.276.
- (41) *Umwandlung abgängiger Pappel-Reinbestände in Mischbestände verschiedener Baumarten.* (co-authors: L. CHEN, J.H. BAI, Y.Q. ZHOU) (chin. and germ.) In: ZHOU, H., WEISGERBER, H. (1997): Beiträge zur Wiederbewaldung der Lößhochebene in Nordchina, p. 377-385.
- (42) *Angepaßte Pflanzverfahren für Aufforstungen in der Lößhochebene Norchinas.* (co-authors: L. CHEN, G. BUSCH) (chin. and germ.) In: ZHOU, H., WEISGERBER, H. (1997): Beiträge zur Wiederbewaldung der Lößhochebene in Nordchina, p. 397-402.

- (43) *Internationales Symposium zum Abschluß des Chinesisch-Deutschen Aufforstungsprojektes Jinshatan.* (co-author: D. TEEGELBEKKERS) AFZ/Der Wald (1997), No. 23, p.1268-1269.
- (44) *Umwandlung ertragsschwacher Pappel-Reinbestände in Mischbestände aus verschiedenen Baumarten unter den kontinental-semiariden Bedingungen Nordchinas.* (co-author: L. CHEN) Die Holzzucht, 51(1997), No. 2/2, p.34-38.
- (45) *Lohnformen in der Waldarbeit und ihre Perspektiven.* Forst & Technik (1998), No. 2, p.15-19.
- (46) *International Forest Ecosystem Management – Ausbildungsprofil des Studiengangs.* (co-authors: T. MROSEK, A. SCHILLING) AFZ/ Der Wald (2002), Nr. 11, S.546-547.
- (47) *Informationstechnologien im internationalen Forst- und Umweltbereich – Neuer Master Studiengang.* (co-authors: T. MROSEK, J. PUUMALAINEN) AFZ/ Der Wald (2002), No. 11, p.555.
- (48) *Internationale Zusammenarbeit in Lehre und Forschung.* (co-authors: A. LINDE, L. MEIER) AFZ/ Der Wald (2002), No. 11, p.556-557.
- (49) *Hilfe zur Strukturentwicklung.* In: Die Internationale Hochschule: Hochschulpersonal. Band 4 (2004), p.59-60. DAAD; WBV, Bielefeld.
- (50) *Silviculture for wood and NTFP production in tropical rain forests: Contradiction or chance? Proceedings: Sino-German Symposium on "the Sustainable Harvest of Non-Timber Forest Products in China – strategies to balance economic benefits and biodiversity conservation.* Göttingen (2006), p.103-111.
- (51) *International Master Programs at the University of Applied Sciences of Eberswalde - Programs and experiences.* Proceedings Silva-Network Meeting. In: Schmidt P., Lewark S. (eds), Design and functioning of international forestry curricula: considerations and experiences. Proceedings of the SILVA Conference, the University of Freiburg, 26–30.8.007. SILVA Publications 5 (2008), S. 27-30.
- (52) *MAR-SFM Monitoring, Assessment and Reporting for Sustainable Forest Management in Pacific Island Countries. Field Manual for Data Collection.* (co-authors: T. THIELE, J. MATEBOTO). SPC/FAO.
- (53) *Jetzt ist sie da: Die Rückegasse am Steilhang.* Forst&Technik (2011), Nr. 2, p. 18-19.
- (54) *Development of technical parameters for the integration of SFM and REDD+ - Results of the planning workshop held at Colo I Suva, Nov. 16-18, 2011.* SPC/GIZ 2011, 15 pp. and annex.
- (55) *Development of technical parameters for the integration of SFM and REDD+ - Field activities and first results at the demonstration area in Nakavu (Fiji).* SPC/GIZ 2012, 25 pp. and annex.
- (56) *Development of technical parameters for the integration of SFM and REDD+ - Mission report on the state of data collection and suggestions for the further course of the project.* SPC/GIZ 2013, 7 pp. and annex.
- (57) *Carbon emission factors of differently managed natural rainforests in Fiji.* SPC/GIZ 2014, 32 pp. and annex.
- (58) *Linking REDD+ with SFM - A case study from the Fiji Islands.* Tropentag (2014), Book of abstracts, p. 390 and poster (co-author: S. QUALIDUADUA).
- (59) *Diameter Limit Table as basic tool for the sustainable management of indigenous rain forests in Fiji.* SGC Fiji Forestry Department 17 pp. and annex.
- (60) *Kohlenstoffspeicherung und ökonomische Perspektiven in nachhaltig bewirtschafteten tropischen Regenwäldern in Fidschi.* (co-authors: S. QUALIDUADUA , D. PLUGGE, J.-H. HOFMANN). Abstracts. FoWiTa Freiburg (2016), p. 95.
- (61) *Simplifying carbon monitoring in tropical rain forests – experiences from a REDD+ readiness project in Fiji.* (co-authors: S. QUALIDUADUA , J. MATEBOTO, D. PLUGGE) Abstracts. IUFRO Regional Congress for Asia and Oceania (2016), p. 116.
- (62) *Diameter Limit Table as basic tool for the sustainable management of indigenous rain forests in Fiji – Update 2017.* SPC/GIZ/Fiji Forestry Department (2017), 25 pp. and annex.

- (63) *Diameter-Limit-Tables as a basic silvicultural tool for the sustainable management of Fijian rain forests* (Co-authors: E. SENIVASA, J. MATEBOTO, C. FEDLMEIER) Abstracts. IUFRO Congress (2017), p. 644. http://iufro2017.com/wp-content/uploads/2017/09/AbstractIUFRO17_III.pdf
- (64) *Integrating Sustainable Forest Management and REDD+ in Fiji*. (Co-author: S. DRANIBAKA) Poster at UN Climate Change Conference (COP 23, 2017)
- (65) *Proposal for a DLT Implementation and Monitoring Procedure*. SPC/GIZ/Fiji Forestry Department (2018), 15 pp. and annex.
- (66) *Progress Report on DLT Implementation and Monitoring*. SPC/GIZ/Fiji Forestry Department (2019), 9 pp. and annex.
- (67) *Proposal for a DLT Implementation and Monitoring Procedure – Version 5/2019*. SPC/GIZ/Fiji Forestry Department (2019), 8 pp. and annex
- (68) *Development of technical parameters for the integration of SFM and REDD+ - Final report*. In preparation.

Unpublished papers and reports

- (1) *Forstgeräte und Forstmaschinen*. Skriptum zur Schwerpunktvorlesung "Technik im Forstbetrieb", Teil II, Institut für Waldarbeit und Forstmaschinenkunde, Forstliche Arbeitswissenschaft der Universität Göttingen (1988, updated 1990), 34 pp.
- (2) *NFMPP-Inventur - Ergebnisse für neun Compartments*. Fiji-German Forestry Project, interner Bericht (1991), 20 pp. and annex.
- (3) *Grundlagen forstlicher Arbeitszeitstudien für die Erfassung von Holzernte- und Erschliessungsmaßnahmen im Natural Forest Management Pilot Project (NFMPP), Fidschi*. Fiji-German Forestry Project (1992), 11 pp. and annex.
- (4) *Aufforstung mit schnellwachsenden Baumarten in der VR China - Ergebnisse des Frühjahrseinsatzes* (co-authors: R. SCHULZKE, L. KARNER), GTZ (1994), 39 pp. and annex.
- (5) *Fijian Landowner Tree Selection System (FTS) - Vorschlag für eine waldbaulich orientierte, differenzierte Zielstärkennutzung zur nachhaltigen Bewirtschaftung der Regenwälder in Fidschi und ihre Adaption an die Möglichkeiten der waldbesitzenden Dorfbevölkerung*. Master Thesis University Göttingen (1994), 35 pp. and annex.
- (6) *Fijian Landowner Forest Inventory System (FIS) – Vorschlag eines Inventurverfahrens zur Erhebung von Grundlageninformationen für die Nutzung von Naturwäldern in Fidschi und seine Adaption an die Möglichkeiten der waldbesitzenden Dorfbevölkerung*. Fiji-German Forestry Project (1994), 12 pp.
- (7) *Aufforstung mit schnellwachsenden Baumarten in der VR China - Ergebnisse des Frühjahrseinsatzes*. (co-authors: H. SIEBERT, G. BUSCH, D. KOWNATZKI), GTZ (1995), 35 pp. and annex.
- (8) *Aufforstung mit schnellwachsenden Baumarten in der VR China - Ergebnisse des Herbsteinsatzes*. (co-authors: L. KARNER), GTZ (1995), 36 pp. and annex.
- (9) *Proposal for a Silviculturally Orientated Management System for the Sustainable Use of Customary-owned Natural Forests in Vanuatu*. Vanuatu Department of Forestry / Pacific-German Regional Forestry Project (1996), Technical Report No. 29, 28 pp. and annex.
- (10) *Fijian Landowner Forest Inventory System (FIS) - Proposal for an Inventory System for Sustainable Management of Native Forests in Fiji and its Suitability for Field Application by Forest Owning Communities*. (co-author: J. DE VLETTER). Fiji Forestry Department/GTZ-Regional Forest Project South Pacific (1996), Technical Report No. 30, 24 pp. and annex.
- (11) *Rehabilitierung von Waldbrandflächen im Forstbezirk Daxinganling, VR China – Ergebnisse des Frühjahrseinsatzes*. (co-authors: J. DURST, R. REICHWEIN), GTZ (1996), 21 pp. and annex.

- (12) *Aufforstung mit schnellwachsenden Baumarten in der VR China - Ergebnisse des Herbsteinsatzes.* (co-author: L. KARNER), GTZ (1996), 25 pp. and annex.
- (13) *Aufforstung mit schnellwachsenden Baumarten in der VR China - Ergebnisse des Einsatzes vom 16.02.-12.03.1997.* GTZ (1997), 5 pp. and annex.
- (14) *Aufforstung mit schnellwachsenden Baumarten in der VR China - Ergebnisse des Einsatzes vom 20.05.-13.06.1997.* GTZ (1997), 6 pp. and annex.
- (15) *Aufforstung mit schnellwachsenden Baumarten in der VR China - Schlußbericht.* (co-authors: H. WEISGERBER, D. TEEGELBEKKERS). GTZ (1997), 11 pp. and annex.
- (16) *Afforestation Shanxi, P.R. of China - Monitoring of Afforested Areas.* GFA (1997), Report No. 13, 10 pp. and annex.
- (17) *KfW-Aufforstungsprojekt Shanxi, VR China - Aufforstungsmodelle und deren Kosten.* Internal report for: KfW (1997), 6 pp. and annex.
- (18) *Rehabilitierung von Waldbrandflächen im Forstbezirk Daxinganling, VR China - Schlußbericht.* (co-author: H. WEISGERBER), GTZ (1998), 9 pp. and annex.
- (19) *Preliminary Proposal for a Silviculturally Orientated Tree Selection System for the Sustainable Management of Natural Forests in Niue.* Niue Department of Agriculture, Forestry, Fisheries & MFN / Pacific-German Regional Forestry Project (1998), Technical Report No. 31, 13 pp. and annex.
- (20) *Preliminary Proposal for a Silviculturally Orientated Tree Selection System and Further Activities for the Implementation of a Management System for the Sustainable Use of Natural Forests in Western Samoa.* Samoa Department of Agriculture, Forestry, Fisheries / Pacific-German Regional Forestry Project (1998), Technical Report No. 32, 15 pp. and annex.
- (21) *First Results of the Implementation of a Sustainability-orientated Management System for Customary-owned Natural Forests in Butmas Village, Espiritu Santo, Vanuatu.* Vanuatu Department of Forestry / Pacific-German Regional Forestry Project (1998). Technical Report No. 33, 20 pp. and annex.
- (22) *KfW-Aufforstungsprojekt Shaanxi II (Yan'an), VR China - Bericht zur Vorprüfung der chinesischen Feasibility-Studie.* For: KfW (1998), 11 pp. and annex.
- (23) *Afforestation Shanxi, P.R. of China - Monitoring of Afforested Areas.* (co-authors: C. SCHNELL) GFA (1998), Report No. 15, 12 pp. and annex.
- (24) *First Results of the Implementation of a Sustainability-orientated Management System for Natural Forests in Samalaeulu Village, Savaii, Western Samoa.* Samoa Ministry of Agriculture, Forestry, Fisheries and Meteorology / Pacific-German Regional Forestry Project (1999), Technical Report No. 34, 20 pp. and annex.
- (25) *Afforestation Shanxi, P.R. of China - Monitoring of Afforested Areas.* (co-author: C. SCHNELL) GFA (1999), Report No. 21, 10 pp. and annex.
- (26) *Evaluation of Forest Inventory Data Collected in the Drawa Block.* (co-author: J. DE VLETTER), Fiji Forestry Department/Pacific-German Regional Forestry Project (2001), 31 pp. and annex.
- (27) *Kurz-Dozentur: Zeitbedarfs-, Leistungs- und Kostenermittlung im Lehrgebiet Forstliche Arbeitswissenschaft für die Forstwissenschaftliche Fakultät der Landwirtschaftlichen Universität Tirana/Albanien.* GTZ (2001), 6 pp.
- (28) *Proposal for a Commercial Thinning Concept for Beech Forests in Albania.* FAO (2002), Project GCP/ALB/004/ITA, 5 pp. and annex.
- (29) *Development possibilities of the Tourism Program at the Luigj Gurakuqi University in Shkodra, Albania.* (co-authors: J. PETERS, J. DE VLETTER, D. MÜLLER), Final report, HRK/FHE (2002), 15 pp. and annex.

- (30) *Compilation of the Drawa Block Sustainable Indigenous Forest Management Plan (2003-2012)*. Final report, SPC/GTZ Pacific-German Regional Forestry Project (GTZ/DFS/GOPA 2003), 11 pp. and management plan (78 pp.) as annex.
- (31) *Untersuchungen über die genetische Variabilität von Populus bolleana Lauche Aufforstungen in der nordchinesischen Provinz Shanxi*. (co-authors: Q. WANG, S. LÖFFLER, B. GÖTZ). Work report for: Georg-Ludwig-Hartig-Foundation. FH Eberswalde (2005), 11 pp. and annex.
- (32) *Supporting Forest Policy Development in the Kingdom of Tonga*. SPC/GTZ Pacific-German Regional Forestry Project (GTZ/GOPA/DFS 2007), 28 pp. and annex.
- (33) *Proposal for Pre-harvest Inventory and Silvicultural Prescriptions as Part of the Fiji Forest Harvesting Code of Practice*. SPC/GTZ Pacific-German Regional Forestry Project (GTZ/GOPA/DFS 2008), 20 pp. and annex.
- (34) *Standardisation of Monitoring, Assessment and Reporting (MAR) for Sustainable Forest Management in the Pacific - Survey on the Status of Forest Data in Selected Pacific Island Countries*. Report for SPC, 2008, 12 pp. and annex.
- (35) *Standardisation of Monitoring, Assessment and Reporting (MAR) for Sustainable Forest Management in the Pacific - Results of MAR-Workshop (November 18, Nadi, Fiji) and Further Steps towards a Harmonised MAR-System on SFM in the Pacific Island Countries*. SPC 2008, 8 pp. and annex.
- (36) *Standardisation of Monitoring, Assessment and Reporting (MAR) for Sustainable Forest Management in the Pacific - Proposal for a Monitoring Plot Design*. SPC, 2009, 9 pp. and annex.
- (37) *Standardisation of Monitoring, Assessment and Reporting (MAR) for Sustainable Forest Management in the Pacific - Proposal for Terrestrial Monitoring Methodologies*. SPC, 2010, 9 pp. and annex.
- (38) *Vorschläge zur Weiterentwicklung der forstlichen Komponente der Bauhandwerkerschule Tschallia/Äthiopien*. 2013, 12 pp.
- (39) *Einschätzung der sozial-ökologischen Situation und der Entwicklungsoptionen bei Puro Verda S.A., Costa Rica*. 2014, 4 pp.
- (40) *Neue Wälder – neue Aufgaben. Gedanken zum Besuch des Pappelversuchsförstamtes Datong*. 2017, 5 pp.

Expression of interest

Project: Designing a National Forest Inventory (NFI) and Permanent Sample Plots and Conducting the NFI

Commissioned by: Fiji Ministry of Forestry, REDD+ Unit

Consulting firm:

Green Owl Development UG
Jülicher Str. 11
13357 Berlin, Germany
Phone: +49 3334 657179
www.greenowldevelopment.de

Proposed consultants team:

1. Jaap de Vletter, MSc in tropical forestry management, jaap.devletter@gmail.com
2. Michael Mussong, Prof. (PhD in Forest Operations, MSc in Forest Management, MSc in Tropical Forestry), mmussong@hnee.de, mmussong@greenowldevelopment.de
3. Jan-Hendrik Hofmann, MSc forest information and GIS specialist, jfhofmann@greenowldevelopment.de

Experiences: number of quality similar projects completed successfully

Over the full period 1990 – 2017 the consultants De Vletter and Mussong have been intensively engaged in the Fijian (and Pacific) forestry sector, with strong involvement in forest inventory, forest monitoring and related training activities. This started with the design and implementation of the Natural Forest Management Pilot Project (NFMPP) in Nakavu, under the German Agency for International Cooperation (GIZ) supported Fiji-German Forestry Project. NFMPP involved a pre-harvest-inventory as well as the design and establishment of 48 Permanent Sample Plots. The developed methods and procedures were – and partly still are -- used as standard approaches in Fiji and other Pacific countries. In those days De Vletter was also involved in the second national forest inventory in Fiji, conducted by the Management Services Division jointly with GOPA / Signum consultants.

After closure of the Fiji-German Forestry Project, the cooperation continued under the SPC Pacific German Regional Forestry Project, and later the GIZ-project REDD+ - Forest Conservation in Pacific Island Countries. The proposed team was (a.o) involved in the recurrent re-measurement of Permanent Sample Plots (PSP) within NFMPP Nakavu. Various reports on data analysis and data evaluation have been produced for the Silvicultural Research Division, and related training of forest technicians was undertaken. Numerous missions have been carried out.

In 2008, De Vletter implemented the National Forest Inventory (NFI) of Niue, commissioned by the (GIZ supported) Pacific-German Regional Forestry Project, via the Gesellschaft für Organisation und Planung (GOPA). In 2 separate missions the NFI design was elaborated, GIS maps were prepared, field crews were trained, field data were collected and final reports were written.

Over the period 2008 – 2010 Mussong carried out a consultancy for Secretariat of the Pacific Community (SPC/FAO). An harmonized system for Monitoring, Assessment and Reporting (MAR) on Sustainable Forest Management in the Pacific Island Countries was designed. The proposed methods and procedures are still highly relevant.

Over the period 2009 – 2019, De Vletter is involved in the implementation of the annual Forest Management Project, commissioned by Van Hall Larenstein University of Applied Sciences (VHL). This project includes the inventory in (partly permanent) sample plots of large forest concessions, providing the baseline for sustainable management and integration into the national REDD+ program, 10 separate missions have been undertaken so far.

Number of completed projects related to national forest inventories and design of permanent sample plots

1. NFI - 6 (Niue, also including various projects in Europe)
2. PSP – 3 (including NFMPP, MAR and Suriname)

Organizational setup of the consulting firm:

The Green Owl Development UG has been founded in 2015 with the intention of bringing a multinational team of free-lancing forestry and environmental professionals under one roof and hosting the expertise of a vast network of expertise around the focus of land use- and forestry-management. The firm's experience dates back for more than 30 years and encompasses worldwide missions that reach from forest (and biodiversity) inventory to sustainable forest management and developing GIS tools.

The firm's central office is located in Berlin, Germany. The firm's technical and managerial organization includes 2 permanent business managers, 1 permanent adviser and 3 part time advisers. This team is connected-up with a network of international consultants who provide services on a contract basis. The annual turnover of the company has been between 150.000 and 170.000 USD during the last 3 years.

Weblinks to the completed projects.

www.greenowldevelopment.de

[https://theredddesk.org/sites/default/files/resources/pdf/MAR-SFM%20in%20Pacific%20Island%20Countries%20-%20Manual 1.pdf](https://theredddesk.org/sites/default/files/resources/pdf/MAR-SFM%20in%20Pacific%20Island%20Countries%20-%20Manual%201.pdf)

[https://theredddesk.org/sites/default/files/resources/pdf/mar_manual_version oct.13.pdf](https://theredddesk.org/sites/default/files/resources/pdf/mar_manual_version_oct.13.pdf)

Wageningen, Eberswalde, 11 October 2019

The Fiji REDD+ Unit,
Ministry of Forestry
Attn: Villiame Rabici,
National Coordinator
Colo-i-Suva, Suva
Fiji

Munich, 18/10/2019

Expression of Interest (EOI) for Designing a National Forest Inventory and
Permanent Sample Plots and Conducting the NFI
Reference No. C36/Fiji

Dear Sir,

Please find attached our Expression of Interest for the above mentioned
call in digital (pdf) format.

Please confirm the receipt of our Eoi by Email.

In case you have any questions, don't hesitate to contact us.

Yours sincerely,


Peter Navratil
Department Forestry & Climate Change

Lot 12, Tuirara Sub-division
Box H425
Makoi
18.10.2019

Dear Madam/Sir

Request for Expression of Interest for Designing a National Forest Inventory and Permanent Sample Plots and Conducting the NFI

I refer to your advertisement in the Fiji Sun on Saturday October 12th on the above. I wish to express my interest as a individual consultant to provide lead or support service as referred to on the above advertisement. Attached are copies of my CV and certificates.

My name is Samuela Lagataki, with over 24 years of forest sector experience at the national and policy level, former Fiji Permanent Secretary of the Ministry of Forests from January 2016 to July 2018, and former Fiji Conservator of Forests from July 2012 to December 2015. I had been part of the Fiji Team attending UNFCCC COP meetings since COP15 in Copenhagen to COP 22 in Morocco following REDD Plus issues and had been highly active in international negotiation forums following REDD Plus issues and in International Forest Policy Dialogue under the United Nations Forum on Forests. I also have great experience and institutional memory in conducting NFIs and setting up of PSPs in Fiji.

1991-1993 NFI

In 1993 I was partly involved (towards the end) on the analysis of both spatial and tabular datasets of the Fiji National Forest Inventory which was conducted between 1991-1993 at the Management Services Division of the Fiji Forestry Department.

2003 Samoa NFI

In 2003 I was recruited by FAO as a consultant to design and implement Samoa's National Forest inventory, carry out staff training, set up a NFI database, and write 2 manuals: a field manual for inventory staff; and the second manual was for the operation and maintenance of the Samoa Forest Resource Information System (SAMFRIS). The total cost of the project is around **F\$150k** including all consultant and operational costs.

2006 NFI

I was fully responsible for the design and implementation of the 2006 NFI. Areas of my involvement includes: Overseeing the NFI project at the National level, the writing of the NFI project document, project design and writing of the project proposal for government funding. My work also includes the engagement of consultants for various components of the NFI; forest stratification; plot designs; plot distribution; design of field data collection forms; recruitment and mobilising of field teams; training of field teams; consultations with key stakeholders; coordination of forest mapping and GIS work; providing information to the IT team for the design of the structure of the NFI database. I was also leading the data analysis and the construction of NFI data summary tables. The total cost of the 2006-2007 NFI was close to **F\$1 million**. I had also conducted many consultation workshops around in Suva, Lautoka, and in Labasa on various issues regarding Fiji's NFI from data collection to data analysis to what the stakeholders and potential data users need to see in the NFI data.

The 2006 NFI was the first to be done locally and fully funded by the Fiji Government, and it was done through my leadership as the Deputy Conservator of Forests specifically responsible for the Fiji Forest Management Services Division. Infact, the manuals and training materials that I designed for the Samoa NFI were ammended and improved upon and was used for the Fiji 2006 NFI.

2009 Permanent Sample Plots

I was also responsible for the design and implementation of the Fiji Permanent Sample Plots (PSP) in 2009. Activities includes the writing of the project document, project design and the request for government funding in 2008. During the time of the desing of the PSP, REDD Plus was not yet known in the Forestry Department. Discussion of REDD Plus was done in 2009 and data gap analysis was carried out in 2010 and 2011 in which the PSP design and its ability to also provide datasets for carbon assessment was also carried out. This PSP project was totally my initiative and completely designed by myself to run for 50 years. I wrote the project document for submission to the Fiji Ministry of Finance for funding approval in 2008. The purpose of the PSP project is for the calculation of forest growth, and for the monitoring of Fiji's forest biodiversity and ecosystems dynamics, in 2011 the data collection methodology for the PSPs was reviewed to also include the collection of information needed for the calculation of baselines data that is needed for Fiji to participate in any future REDD mechanism. The project also involves the training of field teams on implementing landowner training and awareness, plot establishment, and data collection procedures and also on answering of land owner queries and concerns. 100 PSPs were established in Fiji and data collection from the PSPs is currently ongoing.

2010-2011 Fiji Forest Biomass Calculation

In 2010-2011 I was involved in the calculation of Fiji's forest biomass using various datasets from Fiji's 2 past NFIs, PSPs, and from Fiji's pine and mahogany plantations. Around this time, I was involved with various international consultants in the setting up of a system for the collection and processing of field data for the monitoring of REDD Plus activities in Fiji; the design and setting up of a system for Monitoring Reporting and Verification (MRV) using Permanent Sample Plots (PSPs) for the monitoring of the impacts of climate change and accounting of carbon stocks. It includes the designing of a capacity building program for forestry staff in field data collection, and working with SOPAC on use of Remote Sensing for Forest Cover Change mapping from 1991-2001-2007-2010 for the calculation of the rate of deforestation and forest degradation in Fiji during that period. This work with SOPAC sets the foundation datasets for calculating Fiji's forest biomass change and setting the national base line under REDD Plus, leading towards the harmonization of the Fiji forest data collection process with other data collection methodologies such as required under FAO, the Intergovernmental Panel on Climate Change (IPCC) under the Fiji REDD+ activity.

Other Areas

Other areas of my experience includes: forest plantation development and management, Sustainable Forest Management, community forestry, Forest Administration, Forest Policy Advice, Forest Law Enforcement, Budgeting, Forest Planning, to Forest Conservation, and the provision of policy advice for sustainable forest management and ensuring a sustainable forest industry.

I believe that my experience especially in the area of conducting National Forest Inventories and the setting up of Permanent Sample Plots, calculation of forest above ground and below ground biomass and the coordination of various stakeholder consultations will serve as a great asset towards the successful implementation of Fiji's National Forest Inventory and the setting up of Fiji's Permanent Sample Plots.

Attached is by TIN registration number, and I will be operating only under my own name and not under a separate company name. I kindly look forward to hearing from you soon.

A handwritten signature in black ink, appearing to be 'SL' or similar, enclosed in a light gray rectangular box.

Samuela Lagataki

Phone: 9488066

Email: samu.lagataki@gmail.com

Tasks on ToR

Here are some of my comments on the tasks that will be carried out as listed in the ToR:

a) Review of data collected from past forest inventories including an assessment of the confidence intervals of the data and use this to inform the new PSP design.

I have a very good knowledge of all the NFIs conducted in Fiji;

1966-1969: NFI was conducted by the Land Resources Division (LRD) of the Overseas Development Administration Office, with its results published in 1973. The NFI used aerial photographs to stratify the forests on the islands of Vit Levu; Vanua Levu; Taveuni; and Kadavu. A total of 41 forest types were described; and 3 management categories of Non-commercial; Production; and Protection Forests.

1991-1993: NFI conducted by Fiji Forestry Department with expertise from the German International Cooperation Agency (GTZ). It uses Remote Sensing and GIS to classify Fiji Forests into three forest density classes: Dense Forests; Medium Dense Forests; and Scattered Forests. It further divides the forests into three forest functions: Multiple Use Forests; Protection Forests; Preserved Forests.

b) Development of a Ministry of Forestry report detailing the analysis of NFI 2006 data.

I had carried out many analysis of the 2006 NFI datasets, constructing many summary tables, and I am also very familiar with the 2006 NFI datasets.

c) Preparation of the design of a National Forest Inventory based on permanent sampling plots including the description of stratification, sampling approach, sample frame and sampling unit in consultation with the Forest Resource Assessment and Conservation Division of the Ministry of Forestry and other stakeholders for validation in a national consultation workshop.

In 2006, I had carried out similar consultation workshops and in hindsight I have some very good ideas of what i would do differently this time around if I will do it again in order to improve the NFI results and quality of the datasets.

d) Recommendation and documentation in a field manual on the parameters to be measured including tree parameters and carbon pools to be considered for measurement.

I was responsible for designing the manual for both the 2006 NFI and the PSPs, I was also very instrumental in the review of the PSP data collection procedure in order to also collect

data for the forest biomass. In 2003 I was responsible for designing a NFI field manual for the NFI for the Samoa Forestry Department.

e) Conduct training of the inventory crews, prior to start of the inventory field work, on the tasks related to forest measurements following the standard operating procedures of forest inventory and quality assurance and quality control procedures to be followed in the national forest inventory. The training should be conducted in collaboration with the Inventory Section of the Forest Resource Assessment and Conservation Division.

In 2003, I was responsible for designing the NFI and conducting training for the Samoa Forestry Department Inventory Team. Similarly, I did the same for the Fiji NFI team in 2006 and also the PSP team in 2007. In fact I was responsible for the design of both the Fiji NFI 2006 and the Fiji PSPs.

f) Support inventory teams in the conduct of field work and in layout of sample plots and technically back-stop in conducting and checking measurements. Liaison with local communities and daily supervision of the field works will be done by the Inventory Officer of the Ministry of Forestry.

I was responsible for the monitoring of the 2006 NFI and the conduct of the PSP since I was the one that wrote the project documents. At times I would run through the data in the NFI and PSP database to carry out data validation.

g) Analysis of forest inventory data to estimate the forest resources and generation of emission and removal factor data shall be undertaken in close collaboration with the staff of Inventory Section of the Forest Department so that the capacity of the Inventory Section can be strengthened to facilitate data collection and analysis in the future.

I had been a part and directing the capacity building and training to Forestry staff through the recruitment of consultants and the conducting of capacity building exercises from 2010 to 2014.

h) Preparation of appropriate documentation to support field crew instruction.

I was responsible for the documentation of the Samoa NFI process, including the writing of the process and procedures for the 2006 NFI and the Fiji 2009 PSPs

i) Estimation of the uncertainty associated with the emission and removal factor data with ± 10 percent precision and 90 percent confidence interval.

The estimation of the confidence interval and precision was an integral component of the 1991 and 2006 NFIs.

Attachment A

Dear Ms. Jela,

Thank you for your email, which I was asked to follow up. I must apologise to the University on what appears to be a stuff up somewhere in the University's system, as I note on your file a letter from the Registrar dated 10 June 1993 which confirmed that you had satisfied the requirements for admission to the BSc (Forestry) degree. Also, a letter from you dated 15/4/94 requesting that the certificate be sent to you in Fiji. The computerised record for some reason shows 'Abandoned' against the award, and this appears to be where the stuff up originated.

I have forwarded your file to the Faculty of Science office to request that this is sorted out for you.

Regards,

Mick Tanzon

Dr Mick Tanzon
Convenor, Graduate Program in Resource Management and Environmental Science
Department of Forestry,
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Na iYau Bula kei Sovi Basin, Viti Levu (SBPA)

SALA NI KENA MAROROI

2013

CONSERVATION
INTERNATIONAL
Fiji





SOVI BASIN PROTECTED AREA (SBPA)
MANAGEMENT PLAN
2013



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Cover Image: Conservation International

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The contribution of all individuals and organisations towards the formulation of this plan is acknowledged.

Foreword

The Sovi Basin Protected Area (SBPA) is Fiji's largest terrestrial protected area and is equivalent to some 2% of the land area of Viti Levu. Established after many years of community, government and key stakeholder consultation, research and planning, the SBPA is a first initiative of its type in Fiji and indeed in the Pacific island region.

As the largest remaining intact tract of lowland rainforest in Fiji, the entire landform is filled with undisturbed tropical lowland, upland and montane forest vegetation, pristine rivers and streams, and is the habitat of some of Fiji's rarest biodiversity and endemic species.

In recognition of its national value and biodiversity significance, the SBPA was declared a National Heritage Site by the Fiji government in 1991, listed on the UNESCO World Heritage Tentative List in 1996, and listed as a site of national significance in the Fiji National Biodiversity Strategy and Action Plan (2003).

The vision of the SBPA is "the protection of the SBPA for the benefit of future generations" and this management plan has been formulated to effectively conserve the SBPA's biodiversity, scenic, cultural and watershed values and to ensure that the landowners are effective co-management partners and benefit from the establishment of the SBPA.

This management plan has been developed in accordance with the requirement in the lease agreement between the landowners, the National Trust of Fiji and the iTaukei Land Trust Board. The objectives, goals and policies of this Plan, and its co-management approach have been agreed to by the key stakeholders. This document will be registered with the TLTB and will be reviewed every five years following the same consultative process undertaken.

During this period the National Trust of Fiji and the co-management partners will develop its working program and key performance indicators to measure progress against agreed targets, and may adapt management changes provided these are consistent with the Plan.

Robin Yarrow
Chairman
National Trust of Fiji

Management Plan for the Sovi Basin Protected Area

APPROVAL RECORD

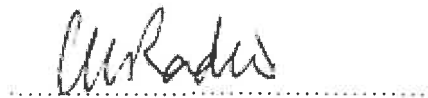
This management plan was approved by the SBPA Steering Committee at its meeting on

Date: 7 May, 2013

At: NTF Headquarters, 3 Ma'afu Street, Suva



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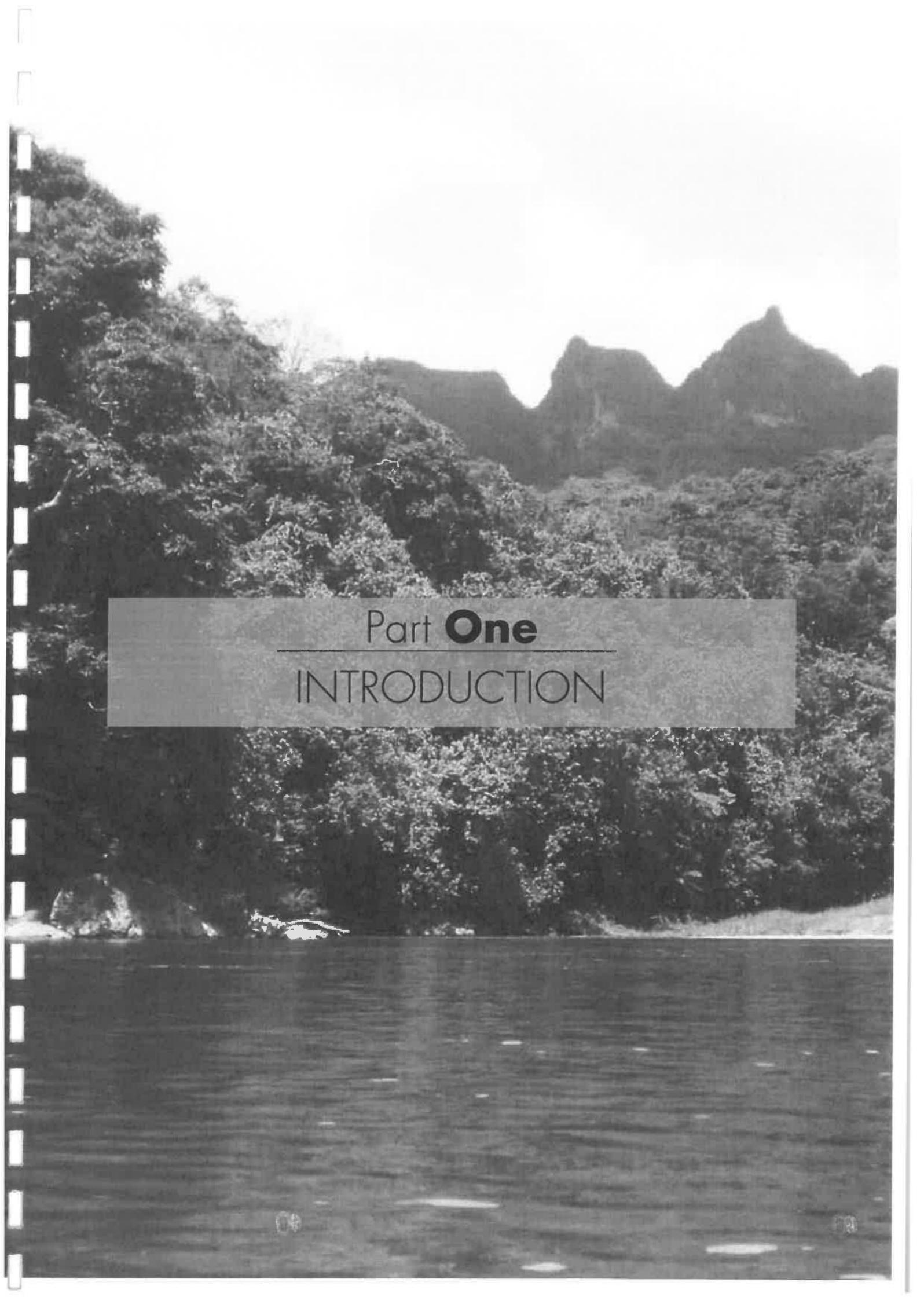
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List of Abbreviations & Acronyms

BIFP	BirdLife International Fiji Programme
CCDT	Community Conservation and Development Trust
CI	Conservation International
CITES	Convention on International Trade in Endangered Species
DoF	Department of Forestry
DoE	Department of Environment
EIA	Environmental Impact Assessment
FBSAP	Fiji Biodiversity Strategy and Action Plan
ECF	Environment Consultants Fiji
FR	Forest Reserve
GoF	Government of Fiji
GPS	Global Positioning System
IAS	Institute of Applied Science
TLTB	iTaukei Land Trust Board
IUCN	International Union for the Conservation of Nature
MP	Management Plan
MOU	Memorandum of Understanding
NLC	Native Land Commission
NLTB	Native Land Trust Board
NTF	National Trust of Fiji
Popn	Population
PA	Protected Area
PABITRA	Pacific-Asia Biodiversity Transect Network
PLA	Participatory Learning Appraisal
PRA	Participatory Rural Appraisal
SBPA	Sovi Basin Protected Area
SBPA LC	SBPA Landowners Committee
SBPA SC	SBPA Steering Committee
SPREP	South Pacific Regional Environment Program
TG3/7	Technical Group 3/7 - Fiji Biodiversity Strategy and Action Plan
ToRs	Terms of Reference
USP	University of the South Pacific
VKB	Vola ni Kawabula
WCS	Wildlife Conservation Society



Part **One**

INTRODUCTION

The Sovi Basin Protected Area (SBPA) is the largest remaining intact tract of lowland rainforest in Fiji. Its rampart-like boundaries provide the SBPA with a unique mystique and an impression of the continuing survival of a distant primal wilderness in the centre of Viti Levu. The SBPA imparts the sense of entering a 'lost world', with its encircling mountain ranges and is one of the scenic spectacles of Fiji.

Most of the forest lies between 200 and 600m above sea level with peaks rising to over 1,100m. The entire basin is filled with undisturbed tropical lowland, upland and montane forest vegetation.

The basin floor is gently rolling and drained by pristine rivers and streams. It is the habitat of some of Fiji's rarest biodiversity including endemic species like the Long-legged Warbler, *Trichocichla rufa* and the ancient gymnosperm *Acropyle sahniana*, (Drau tabua), both of which are globally listed as Critically Endangered (IUCN 2006).

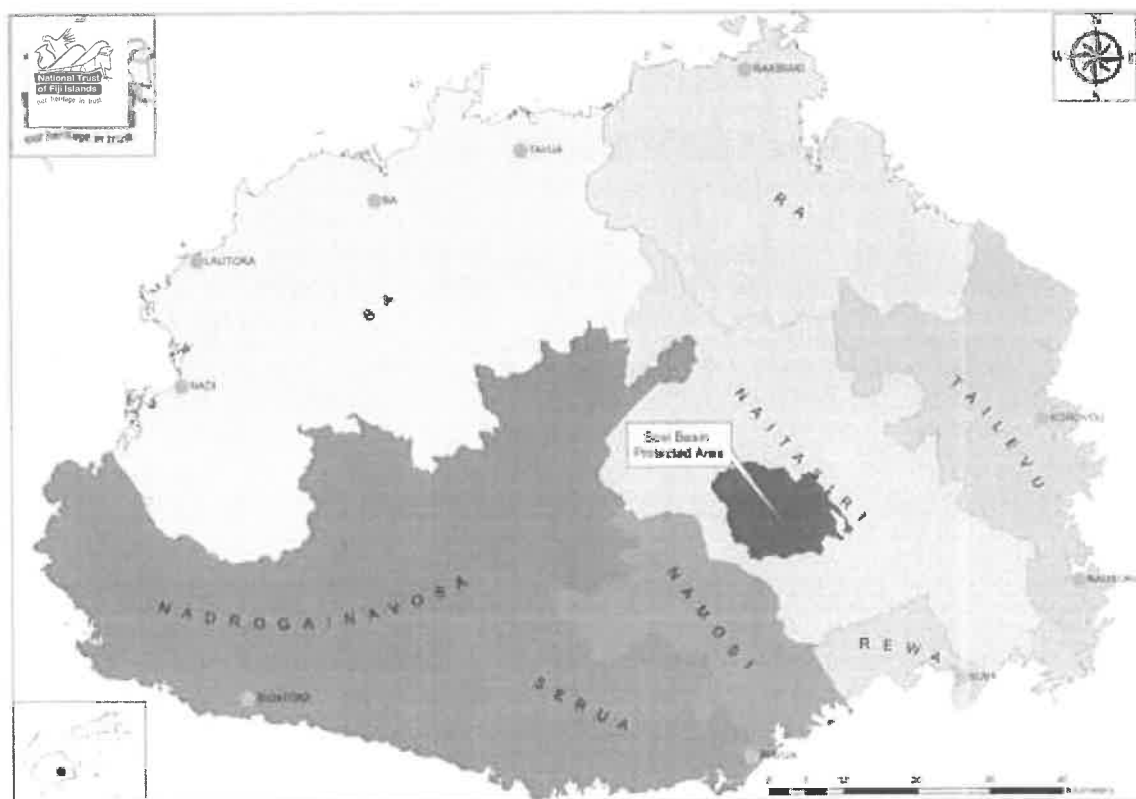


Figure 1: Location of the SBPA

The conservation potential of the SBPA was first recognised in the Native Land Trust Board (NLTB), Forestry Department (FD), Maruiva Society report (Lees et al. 1989) where a very strong recommendation was made for its development as Fiji's "premier national park". SBPA was identified as a priority site for full protection in the National Environment Strategy (GoF 1993), and the Fiji National Biodiversity Strategy and Action Plan-NBSAP (GoF 2003), and was listed on the UNESCO World Heritage Tentative List in 1999.

The SBPA has also been designated as a Key Biodiversity Area (KBA) by Conservation International (CI), and an Important Bird Area (IBA) by Birdlife International (BI).

Conservation efforts were complicated by the issuance of a 30-year logging concession to Merit Timbers in 1978. The efforts of the then NLTB, Maruiva Society and Conservation International were instrumental in having the concession revoked by NLTB in 2004. Since then conservation efforts for the SBPA have been managed by the SBPA Steering Committee chaired by the Department of Forestry, with CI as secretariat and made up of the key government stakeholders, the USP, NTF and landowners.

In 2012, facilitated by the TLTB (iTaukei Land Trust Board, replacing NLTB) the SBPA Landowners approved a 99 year lease for the SBPA to the National Trust of Fiji (NTF). The management of the SBPA is now undertaken by the NTF and the SBPA Landowners (Attachment 1).

PURPOSE OF THE SBPA MANAGEMENT PLAN

The Management Plan for Sovi Basin Protected Area (SBPA) is essential for effective management. It is a requirement of the donors, and provided under the TLTB lease as an instrument for the sustainable management of the SBPA, involving the NTF, CI, TLTB, Landowners and other key stakeholders. It is an important plan to accommodate the present and future needs of the SBPA and the landowners.

The first draft of the SBPA Management Plan was produced in 2006 and subsequently revised in 2009. This Management Plan is the third revision to the original plan, follows continuing

consultation and marks an important stage in the development of management of the SBPA. It provides a snapshot of knowledge of the area and achievements to date and sets out a framework for future management.

Management planning is a consultative and iterative process. The process of planning is as important as the plan itself and is an ongoing component of the management and administration of the SBPA. In formulating this management plan a co-management approach is used (see Parts 3 and 4) where the landowners are key co-management partners.

The Management Plan becomes operational on the approval of lease and will be reviewed every five years. A 30-year review of the commitment of landowning units to the Protected Area purpose of the lease will be carried out as a requirement under the lease agreement.

VISION, GOALS AND MANAGEMENT PRINCIPLES

Vision

The vision of establishing the SBPA was agreed at a multi-stakeholder workshop held at the University of the South Pacific in December 2005 and remains as the vision of the SBPA today.

"Na kena Taqomaki na Vanua o SBPA e na Vukudra na i Taukei ni Vanua e na Veisiga ni Mataka"

"The protection of SBPA for the benefit of future generations"

Goals

The goals of the management plan are:

- To effectively conserve the biodiversity, scenic, cultural and watershed values of the SBPA;
- To ensure that the landowners are effective co-management partners and benefit from the establishment of the SBPA.

Objectives

Conservation and Socio-economic objectives ensure effective management of the SBPA

Conservation Objectives

- Maintaining or increasing habitat extent within the protected area.
- Maintaining or increasing habitat critical to the persistence of threatened species within the protected area.
- Ensuring the persistence of viable populations of threatened species within the protected area.

Socio-economic Objectives

- Fully engaging SBPA landowners including women and youth in the management of the protected area.
- Raising awareness with surrounding communities and nationally on the local and national significance of the protected area.
- Formulating with communities' village development plans and jointly implementing agreed development & poverty alleviation priorities, including income generating activities.

Guiding Principles

In implementing the SBPA Management Plan, the following principles are adopted:

1. Conservation of biodiversity and ecosystem functions is to be the highest management priority.

This statement reflects the original designation of the SBPA and its status as one of Fiji's most important natural heritage assets.

2. Landowners are equitable beneficiaries of the designation of the site and any management interventions.

The intent here is to ensure that the landowners are effective co-management partners and equitable beneficiaries of the SBPA.

3. Management discussion and decision-making is to be transparent and accountable.

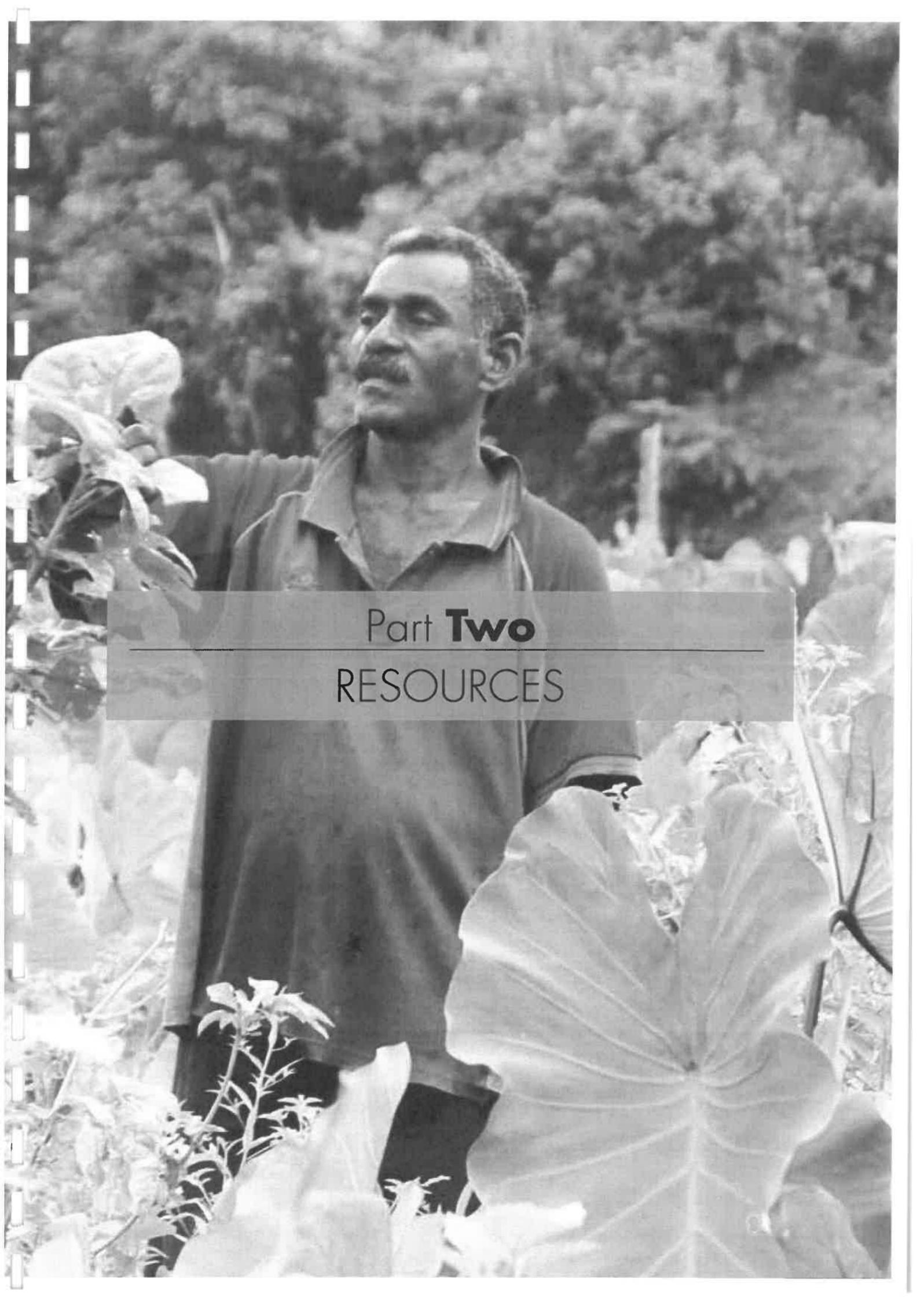
This is to ensure that decision-making considers the multi-stakeholder aspirations in particular, the landowners. Central to this Management Plan is the establishment of a Co-management Framework for this purpose.

4. Capacity building at both national and local levels.

This is a commitment to capacity building in the area of scientific and technical expertise as well as in other areas that may be identified by the landowners.

5. Access is subject to feasibility.

This is a commitment to ensure that visitors to the SBPA have access, provided it does not negatively impact the integrity of the SBPA.



Part **Two**
RESOURCES

PHYSICAL CONTEXT

Geology and Geomorphology

The distinctive bowl-shaped form of the SBPA with its encircling peaks and ranges is unique to both Fiji and the island Pacific. The floor of the Basin comprises a rolling to broken landform largely composed of tonalite and diorite rocks of the Colo plutonic group that are approximately 30-40 million years old (Hirst 1965). These rocks, better known as forms of granite, are named plutonic because they rose from the earth's molten interior intruding beneath and lifting upward the overlying volcanic rocks of central Viti Levu. The main area of granite rock exposure within the Basin is in the form of an oval extending at the widest coverage approximately 13 kilometres from east to west and 9 kilometres from north to south. By contrast, the rugged ranges and peaks forming the rim of the Basin consist of the andesite volcanics of the Medrausucu and Wainimala

groups (Hirst 1965). Those of the Wainimala group are older (probably in the vicinity of 30 million years old) and more resistant to erosion than those of the Medrausucu group (probably less than 20 million years old).

Climate

The SBPA lies in one of the wetter areas in Fiji. There are no rainfall or meteorological data available from within the SBPA. Figure 2 provides rainfall data from four stations close to SBPA. The Basin lies within Fiji's windward and wetter climatic zone but nonetheless rainfall is quite seasonal with rainfall during the wet season (November-April) being approximately twice that of the dry season (May-October).

Situated as it is in the centre of Viti Levu and encircled by high ridges, the SBPA is relatively sheltered from the effects of tropical cyclones.

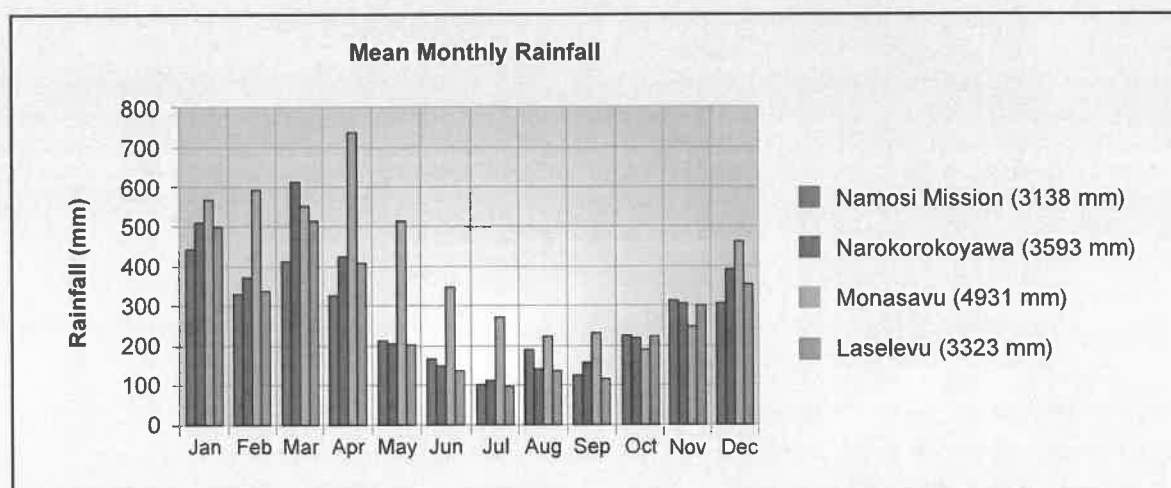


Figure 2: Average Monthly Rainfall for Four Sites close to the SBPA
(source: Public Works Dept. except Monasavu – HEC Consulting 1999)

Hydrology

The SBPA comprises three significant catchments. The two easternmost catchments, the Wainavobo River in the south and the Wainivalau River in the north, exit the Basin on the easternmost margin, as a deep canyon cutting down as much as 600m through the Medrausucu range, as the Sovi Gorge. These two rivers come together to form the Sovi River itself close to the eastern margin of the Basin floor just before the main river enters the Sovi Gorge. The only other significant catchment within the Basin is the Wainavadu River which drains much of the western portion of the Basin and exits to the south at Delailasakau.

The area of the Sovi River watershed (at the Natuba gauging station) is 146 km², approximately 5% of the Rewa River watershed into which it drains. The Rewa River watershed is Fiji's largest river.

BIOLOGICAL SETTING

Knowledge Base

The state of knowledge of the fauna and flora of the SBPA is essentially superficial but sufficient to confirm a very high diversity of forest type and species composition. Three recent baseline fauna and flora surveys (Morrison, 2006) together with the Fiji Natural Forest Inventory (1991-92) have provided the foundation of the biodiversity knowledge, which hitherto had been minimal. (Attachment 2)

Vegetation and Flora

Forest Types

The SBPA is a forested ecosystem that remains in an essentially undisturbed state supporting mature phase lowland tropical rainforest over almost its entire area. The Basin supports an exceptionally high diversity of forest community types. This level of diversity is unmatched elsewhere in the Fijian natural forest estate by any area of equivalent size within a single climatic zone. Within the SBPA an array of distinctive lowland forest types occur together in a complex mosaic on the floor and walls of the Basin.

Recent botanical surveys in the basin have resulted in the recognition of basic vegetation types in two

categories, "pristine" and "disturbed". Four types of forest are included in the "pristine" category. These are:

- (a) *Ridge Forest* – a unique vegetation that is often dominated by ancient gymnosperms and old angiosperm lineages.
- (b) *Slope Forest* - Most of the study area is covered by slopes and narrow valleys that are covered by mixed lowland rainforest, dominated by angiosperms. This is a very diverse forest type, with different species assuming dominance.
- (c) *River Plain Forest* - On the banks of the two major rivers, Wainavobo and Wainivalau, more or less extensive flat areas are found. Relatively undisturbed stretches of this forest type are found in the upper reaches of these rivers.
- (d) *Riparian Vegetation* - Within or on the sides of streambeds, a unique, native river vegetation is found in relatively undisturbed areas. However, in many locations in eastern lower portion of the basin, the river vegetation is dominated by introduced species.

There are three vegetation types included in the "disturbed" category. These are:

- (a) *Forest on former Village and Garden Sites* - Although not presently inhabited by humans, at least the eastern portion of the SBPA once was.
- (b) *Recently Abandoned Plantation* - A portion of the basin closest to Delailasakau Village was recently a cocoa plantation.
- (c) *"Bamboo Forest"* - Several slopes in the eastern portion of the basin are dominated by almost monospecific stands of the native bamboo, *Schizostachyum galucifolium*.

Alien and Invasive Plants

34 taxa were identified which are considered adventive and naturalized species. Six taxa are known to be serious invasive plants - *Merremia peltata* (native) and the introduced, alien species *Piper aduncum*, *Clidemia hirta*, *Mikania*

micrantha, *Spathodea campanulata*, and the water hyacinth *Eichhornia crassipes*. With the exception of the native plant *Merremia peltata*, all remaining introduced species above are included in the list 'World's 100 Worst Invasive Alien Species' by the IUCN Invasive Species Specialist Group (ISSG).

Threatened and Endangered Flora

Twenty seven plants recorded in the Basin are considered rare and/or threatened Fijian species of which the Orchids are the most common with 10 taxa followed by Rubiaceae with three taxa and Podocarpaceae, Araliaceae and Psilotaceae with two taxa each.

Two species are considered Critically Endangered, *Acropyle sahniana* and *Schefflera euthytricha*.

Fauna

Birds

There are no recorded observations of birds from within the SBPA prior to the surveys of ECF (2002) and IAS-BICI-PABITRA (2003-2006) and these surveys have revealed the presence of all of Viti Levu's forest birds with one exception - the red-throated lorikeet. The red-throated lorikeet has been recorded close to, but just outside the SBPA boundary, and is clearly part of the basin avifauna. Clearly, if preserved, the basin will provide the most important source and conservation site for all of Viti Levu's forest birds, the majority of which are endemic. Both Viti Levu's endemic species, the masked shining parrot and the pink-billed parrot finch have been recorded in the SBPA which is now recognised as an Important Bird Area (Masibalavu & Dutson 2006).

The Long-legged Warbler was rediscovered in 2003, over a century since it was last recorded on Viti Levu. Since its rediscovery it has been recorded in suitable habitats - small upland streams - throughout the SBPA.

Mammals

Apart from bats, Fiji has no native mammals therefore the rest of the terrestrial mammals currently found in the SBPA are introduced. Several of these have become naturalised in forest areas.

The two flying fox species found on Viti Levu have been observed in SBPA. No successful trapping for mammals has been undertaken in the SBPA. Neither of Fiji's small insectivorous bats, nor the blossom bat have, as yet been recorded in SBPA but may well occur.

Other Faunal Groups

Seven herpetofauna species have been confirmed from the SBPA. The most common species are the Fiji Tree Frog, Green Tree Skink, Slender-toed Gecko and the Alien Cane Toad. The least common species is the Pacific Boa with only one specimen recorded in the three surveys.

Fourteen freshwater fish species have been recorded from the rivers and creeks within the SBPA. Two species are endemic, eleven are native and one is introduced. Six species of freshwater prawns have been recorded in the SBPA, five of these are native but none are endemic species.

The herpetofauna and freshwater vertebrate species lists are incomplete as there are other species common to lowland rainforests on Viti Levu that were not recorded during the surveys. Insect surveys in the SBPA have been undertaken at only a very preliminary level.

Threatened Species

Currently 13 species which are globally categorised as "threatened with extinction" have been identified in and around the SBPA. Two of these, the conifer *Acropyle sahniana* and the Red-throated lorikeet, *Charmosyna amabilis* are categorised as Critically Endangered. *Degeneria vitiensis*, one of the five officially threatened plant species has been found to be very common in SBPA, as a result of which its status may have to be revised.

Table 1: Threatened Species of the SBPA

FLORA			
	Species	Origin	IUCN Status
1	<i>Schefflera costata</i>	Endemic	Rare, Vulnerable
2	<i>Schefflera euthytricha</i>	Endemic	Data deficient
3	<i>Clinostigma exorrhizum</i>	Endemic	Rare
4	<i>Cleophyllum amblyphyllum</i>	Endemic	Vulnerable
5	<i>Terminalia capitanea</i>	Endemic	Rare
6	<i>Carruthersia macrantha</i>	Endemic	Rare, Threatened
7	<i>Schoenus achaetus</i>	Native	Rare
8	<i>Dennstaedtia flaccida</i>	Native	Rare, Threatened
9	<i>Glochidion atalotrichum</i>	Endemic	Threatened
10	<i>Hymenophyllum samoense</i>	Native	Rare
11	<i>Lycopodium serratum</i>	Native	Rare, Threatened
12	<i>Angiopters opaca</i>	Endemic	Rare
13	<i>Appendicula bracteosa</i>	Native	Rare
14	<i>Bulbophyllum sessile</i>	Native	Rare, Threatened
15	<i>Bulbophyllum samoanum</i>	Native	Rare, Threatened
16	<i>Coelogyne lycastoides</i>	Native	Rare, Threatened
17	<i>Flickingeria comata</i>	Endemic	Rare, Threatened
18	<i>Glomera emarginata</i>	Endemic	Rare, Threatened
19	<i>Malaxis lunata</i>	Native	Rare
20	<i>Malaxis platychila</i>	Endemic	Rare, Threatened
21	<i>Phreatia pachyphylla</i>	Native	Rare
22	<i>Thrixspermum spp</i>		Rare
23	<i>Freycinetia vitiensis</i>		Rare
24	<i>Acmopyle sahniana</i>	Endemic	Critically Endangered
25	<i>Podocarpus affinis</i>	Endemic	Vulnerable
26	<i>Psilotum complanatum</i>	Native	Rare
27	<i>Tmesipteris truncata</i>	Native	Threatened
28	<i>Psychotria bullata</i>	Endemic	Rare
29	<i>Psychotria parvula</i>	Endemic	Rare
30	<i>Psychotria c.f scitula</i>	Endemic	Rare

31	<i>Degeneria vitiensis</i>			Vulnerable
FAUNA				
	English Name	Scientific Name	Origin	IUCN Status
32	Fiji Tree Frog	<i>Platymantis vitiensis</i>	Endemic	Near Threatened
33	Pacific Boa	<i>Candoia bibroni</i>	Native	Rare
34	Friendly Ground Dove	<i>Gallicolumba stairii</i>	Regional Endemic	Vulnerable
35	Masked Shining Parrot	<i>Prosopaea personata</i>	Endemic to Viti Levu	Near Threatened
36	Fan Tailed Cuckoo	<i>Cacomantis pyrophanus</i>	Native	Extinct/Extirpated
37	Long legged Warbler	<i>Trichocichla rufa</i>	Endemic	Endangered.
38	Black faced Shrikebill	<i>Ceytorhynchus nigrogrularis</i>	Endemic	Vulnerable
39	Pink Billed Parrotfinch	<i>Erythrura kleinschmidti</i>	Endemic to Viti Levu	Vulnerable
40	Samoan Flying	<i>Pteropus samoensis</i>		Near Threatened
NOT YET RECORDED IN THE SOVI BASIN, BUT CLOSE TO ITS BOUNDARY				
41	Red Throated Lorikeet	<i>Charmosyna amabilis</i>	Endemic	Critically Endangered.

Threatened Habitats

A comprehensive overview of the habitats of the SBPA is still deficient, though the Basin's geomorphology and altitudinal range appears not to be diverse enough to provide for extreme habitat differences within the basin. Some habitats remain to be surveyed, principally:

- Small areas of cloud forest on the highest ridges, and the habitats on and around the rocky summits of the Korobasabasaga and Medrausucu ranges. Endemicity to Fiji's flora increases with altitude therefore the higher altitude parts of the basin which comprise only a small portion of the SBPA are immediately identifiable as important. Key area identification was undertaken by Morrison (2006) on the basis of the known occurrence of a suite of rare plants which resulted in the higher altitude areas being identified as 'hot spots'.

- Streams and creeks ecosystems that form the headwaters of the SBPA River system that are threatened from destructive fishing methods (use of *Derris* sp. (Duva), and chlorine-based products), incursion of invasive fish species (eg. Tilapia and mosquito fish).

- Flood plains threatened by introduction of alien and invasive species (fauna and flora)

- The Vunitorilau Ridge is the last undisturbed forest connection between the lowland rainforests of the whole of central-south east Viti Levu and the upland rainforest of central Viti Levu, leading north to the Nadrau-Rairaimatuku Plateau, Mt Tomanivi; and south west to the forests of Bouwaqa and the Navua catchment.

The connectivity between forest systems is essential in allowing unrestricted movement of

wildlife and gene flow exchange to maintain genetic diversity.

The Vunitorilau Ridge is threatened by logging, forest clearance for agriculture, and development proposals such as roads and transmission lines. Currently, the remaining forest is reduced to less than five kilometres in width on Vunitorilau ridge immediately west of Mt Naitaradamu. There is Production Forest at its base and forest clearing for gardens on both sides of the watershed.

sites, changing tribal allegiances, fighting and reconciliation between families, clans and tribes, gifting of land, and the merging and splitting of groups.

To date, only one reconnaissance-level archaeological survey of the SBPA has been undertaken (Tuiwawa & Morrison 2006) which identified seven separate sites. Four of the sites were in the mid reaches of the Wainivalau valley, the remaining three were close to the confluence of the Wainivalau and the Wainavobo rivers.

SOCIO-ECONOMIC SETTING

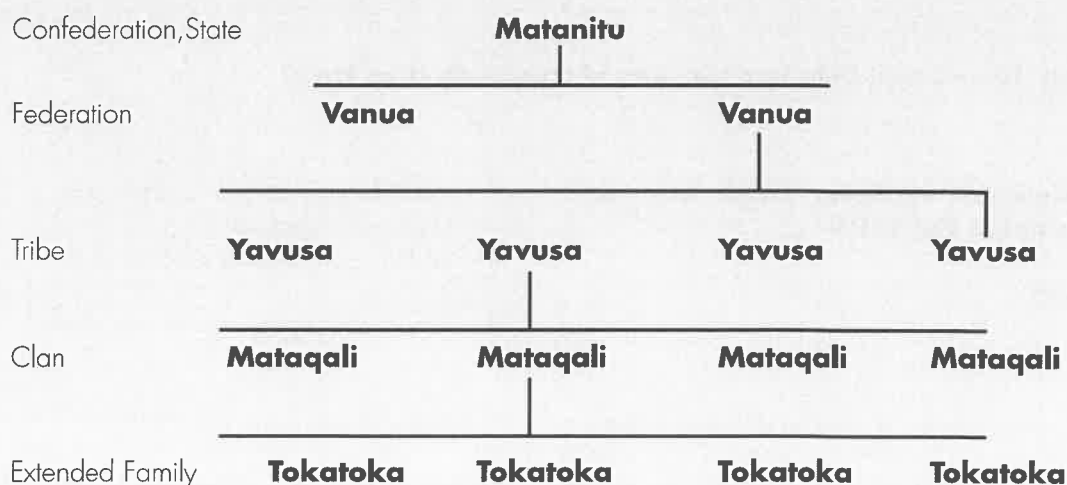
Historical and Pre-historical Context

The history of the people surrounding the SBPA and the ownership of the Basin itself is long and complex, involving frequently shifting village

Five of the sites were old villages, one was reported to be a worshiping ground and another reported to be the old house mound of the Tui Wainavalau. All the sites were located on hillsides or ridges, on or above the second river terrace. Those village sites on the ridges were clearly hill forts used during the days of rivalries and warfare summarises the characteristics of the sites.

Landownership in Fiji

Fijian social units which determine land tenure and allegiances are given in Box 1, with loose English equivalents and a glossary of locally used terms associated with land tenure.



Matanitu:	A traditional Fijian confederation of Vanua
Vanua:	A traditional Fijian political unit, usually consisting of a few villages under a single chief, usually with a distinctive language and culture
Yavusa:	The largest kinship group consisting of people descended from a single vu – an ancestor god.
Mataqali:	Fijian kin group, officially a subdivision of a yavusa and designated as the landowning unit.
Tokatoka:	Subdivision of a mataqali, the basic land working unit, often comprising a group of several brothers living the same village in separate households.
Tikina:	Subdivision of a province – a Fiji Government administrative unit.
iTaukei Land	Land above high-water mark, not being freehold nor owned by the State in accordance with the provisions of the Crown Lands Act. It comprises approximately 88 per cent (88%) of the total landmass in Fiji. The iTaukei Land Trust Board acts on behalf of landowners in all matters pertaining to its lease or alienation.
Reserve Land	iTaukei land set aside and proclaimed as such under the provisions of the iTaukei Land Trust Act. Reserve Land cannot be leased. De-reservation can occur provided there is 'good cause' and with the consent of the landowners.
Freehold Land	Land owned privately and exclusively by the title holder who may dispose of it in any manner he wishes
State Land	State Land comprises Schedule A, Schedule B, State Freehold, State Fore-shore and State Land without Title. Schedule A and Schedule B land are held by the State in trust for indigenous landowners.

Box 1: Fijian Social Units and Glossary of Frequently Used Terms

Landowner Profiles, Land Use and Population for SBPA

General

The land within the SBPA are communally owned by nine mataqali, who reside in five villages (Table 2). None of these villages are located within the SBPA but are located in a number of river valleys adjacent to the SBPA. The Waidina River runs eastward across the south of the SBPA. To the east are the lower tributaries of the Wainimala (Wailase and Waiqa); to the north are the upper reaches of the Wainimala and to the west the Wainikoroiluva and its tributaries. Along these river valleys are sited numerous villages including the villages in which the landowners of SBPA are resident:

- Waidina river valley – Delailasikau, Naseuvou, Nadakuni;
- Wainimala river valley – Naivucini and,
- Navua river valley – Nukusere (the landowners who are originally from Delailasikau village have moved to this village some 15 kilometres from SBPA).

SBPA landowners are resident in four villages close to SBPA. These four villages are within the Province of Naitasiri but from two different Tikina: the villages of Delailasakau, Naseuvou and Nadakuni are part of Tikina Nawaidina and the village of Naivucini is part of Tikina Nadaravakawalu (Wainimala). The fifth village – Nukusere - is within the Province of Namosi.

Table 2: Land Owning Units for the SBPA

Land Owning Units	NLC Lot No.	Area (ha)	Koro
Mataqali Naitavuni	32	760.2529	Delailasakau (Naseuvou)
Yavusa Naitavuni	1	716.2899	Delailasakau (Naseuvou)
Mataqali Namataniqavi	5	1040.0153	Delailasakau (Naseuvou)
Mataqali Nawaisomo	6	1218.0420	Delailasakau (Naseuvou)
Mataqali Waibasaga	79	9379.3842	Nadakuni
Mataqali Buluya	103	341.2218	Naivucini (Naitavoli)
Yavusa Nanuku	5	95.8504	Nadakuni
Mataqali Buasauni	33	2191.0005	Nadakuni
Yavusa Nanuku	34	562.3596	Nadakuni
	TOTAL	16,304.4166	Subject to Survey

Population

The population of the five landowner villages varies are summarised in Table 3.

Table 3: Population of the Five Landowner Villages of the SBPA

AGE GROUP	Delailasakau	Naseuvou	Nukusere	Nadakuni	Naivucini
0 – 15	77	67	25	106	150
16 – 25	44	44	20	65	63
26 – 35	22	29	11	61	67
36 – 45	20	26	7	51	60
46 – 55	19	19	11	38	35
56 – 65	13	17	7	24	29
66 – 75	5	6		11	15
76 and over			1	4	11
Unknown				32	11
TOTAL	200	208	82	392	441

Source: NTF Socioeconomic Survey. In prep. 2013

Community Profiles

Community profiles of the five villages where the landowning mataqali reside have been drawn up through participatory learning and action

(PLA) workshops and household surveys in 2006 (Korovulavula 2006) and again in 2013 (NTF 2013, in preparation). A summary of the current

living conditions, village make up, land and resource use and household and community priority needs from the 2013 survey is provided in Table 4.

The PLA and household surveys provide information:

- Demography;
- Occupation;
- Religion;
- Education;
- Energy;
- Net Income Cash Flow;
- Water and sanitation;
- Community and household needs; and
- Community development and resource management plans.

Utilisation of the SBPA

The inaccessibility of the SBPA from the landowning villages is clearly a significant constraint to its use by the villagers. Only two landowning villages, Naseuvou and Delailasakau, use the SBPA on a regular basis but this was on a monthly or annual visit to hunt pigs and catch fish, prawns and eels.

Certain non-landowning groups along the Wainimala and Wainimakutu Rivers have customary access and resource use rights within the SBPA. These rights are acknowledged by the landowners. Some of these groups access the SBPA on a regular basis (average of four times a year). There is a possibility of introduction of alien and invasive species caused by this access. Harvesting practices will require reviewing to prevent destructive harvesting practices.

Landowner Land Availability Outside the SBPA

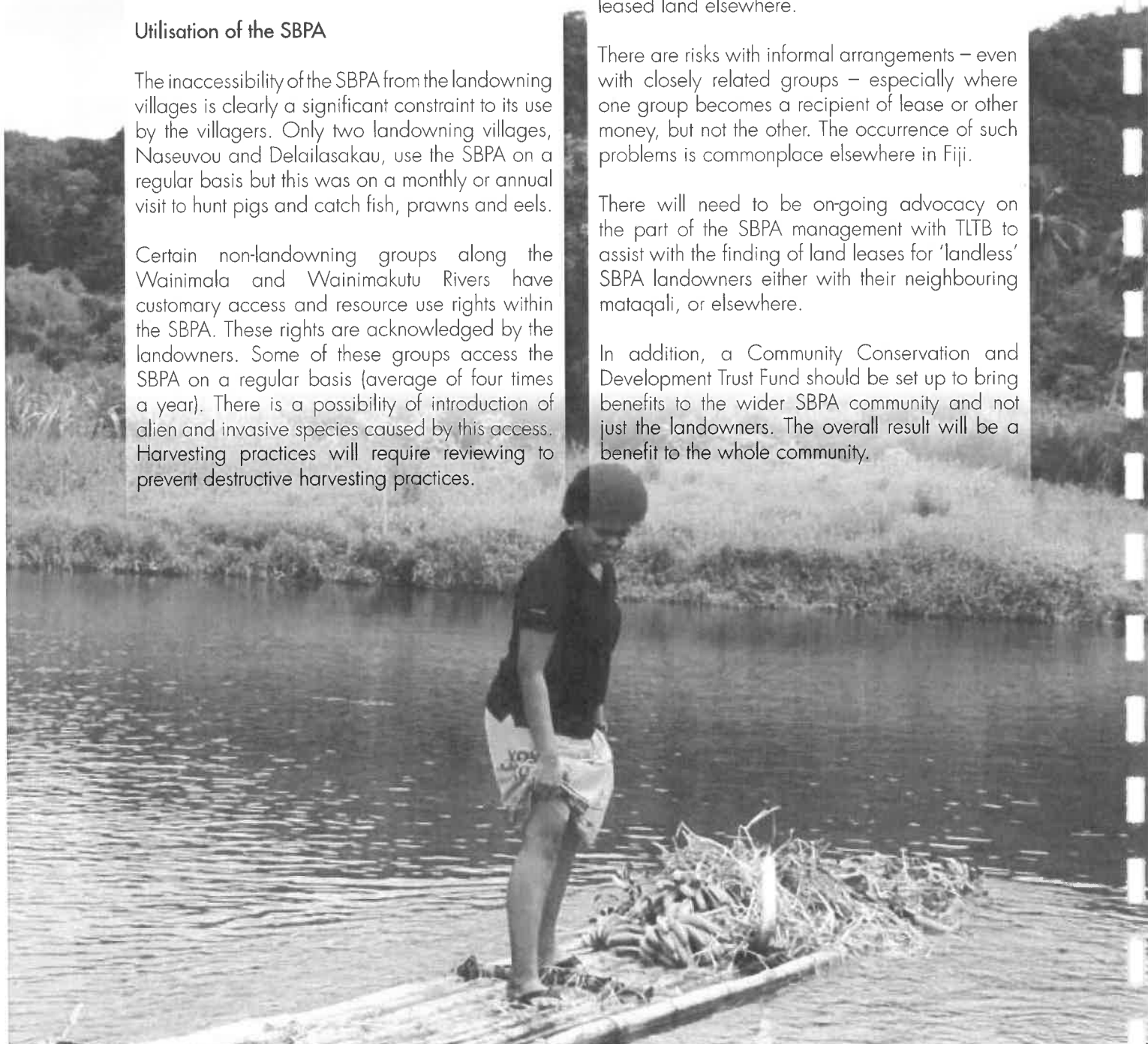
The majority of the SBPA landowners have very limited land available outside the Basin. Of the nine landowning mataqali of the SBPA only four have a significant proportion (>50%) of their landholdings outside the basin. The remaining landowners have more than 85% of the land within the basin and one has all their land within the Basin (Figure 3).

The consequences of this for management of SBPA relate to actual and perceived landlessness of these mataqali once their lands are leased to the SBPA. At the moment, the landowners do not need these lands, and those that are farming near their villages are doing so on land belonging to other mataqali through informal permission, or on leased land elsewhere.

There are risks with informal arrangements – even with closely related groups – especially where one group becomes a recipient of lease or other money, but not the other. The occurrence of such problems is commonplace elsewhere in Fiji.

There will need to be on-going advocacy on the part of the SBPA management with TLTB to assist with the finding of land leases for 'landless' SBPA landowners either with their neighbouring mataqali, or elsewhere.

In addition, a Community Conservation and Development Trust Fund should be set up to bring benefits to the wider SBPA community and not just the landowners. The overall result will be a benefit to the whole community.



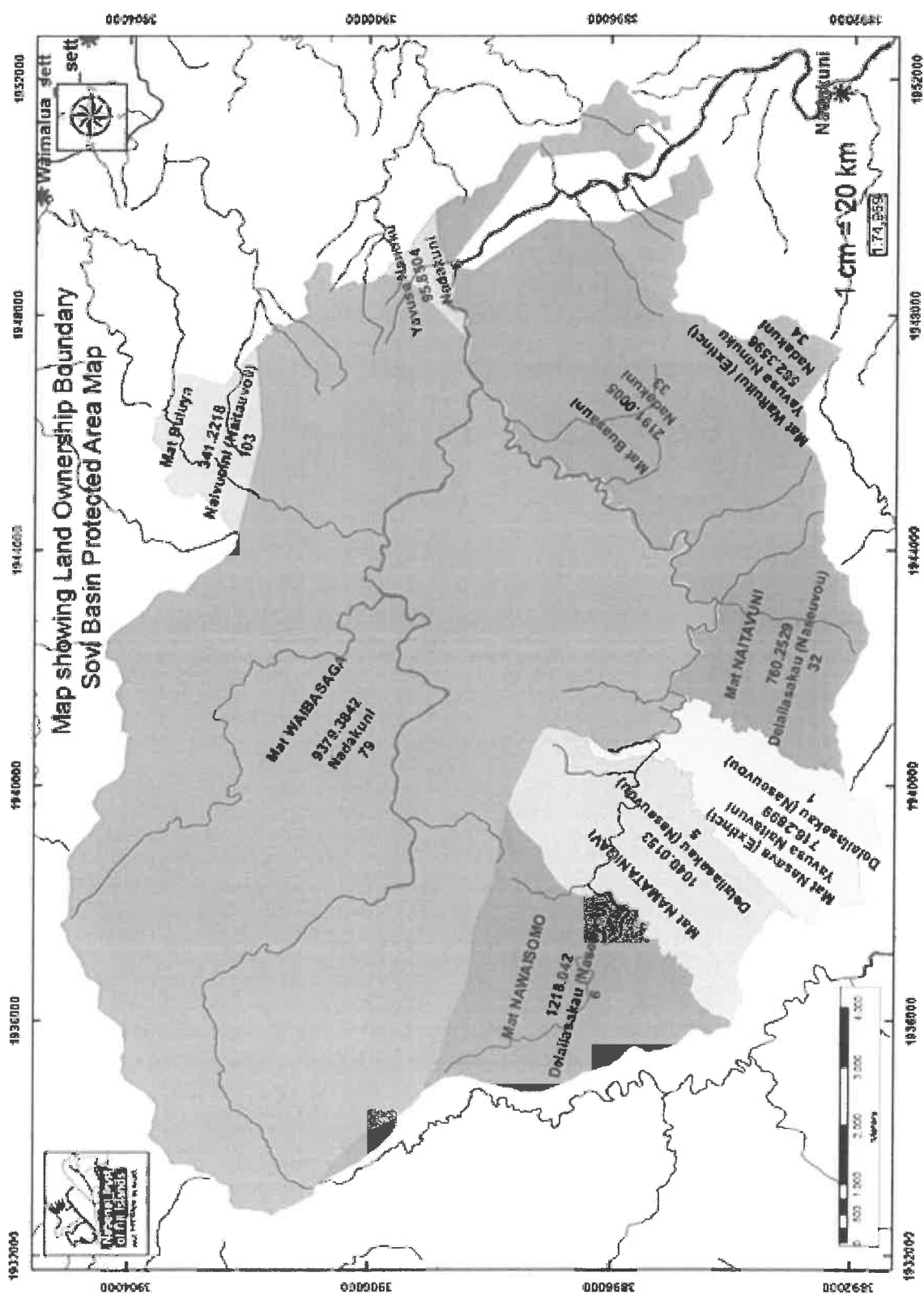


Figure 3: SBPA Protected Area Boundary with Mataqali Boundaries

Table 4: Key Findings of the SBPA Socioeconomic Report 2013 (NTF, 2013. In preparation)

Village Indicators	Naseuvou	Nukusere	Naivucini	Delailasakau	Nadakuni
Village Composition	1 Yavusa; 7 Mataqali	2 Yavusa; 3 Mataqali	5 Yavusa; 13 Mataqali	1 Yavusa; 5 Mataqali	7 Yavusa; 12 Mataqali
Demography	All five villages have a high percentage of young population. Over 40% are 15 years and under. 24% are between ages of 16-25 years. Male population is 52.8% and Females are 47% of the population.				
Occupation	Majority of the five villagers are involved in semi-subsistence agriculture. Population involved in white collar jobs are 17% and in blue collar jobs, 20%.				
Religion	Predominantly Catholic	Predominantly Methodist	Predominantly Methodist	Predominantly Catholic	Predominantly Methodist
Education	59.6% of the overall population of the 5 villages have attained primary and secondary school level education. 12.3% of total population have attended a form of formal tertiary and vocational academic program.				
House construction	Traditional Bures are now rare. Most houses are either corrugated iron 52.3% or mix of timber and bamboo structure 23.8% while 22% are concrete houses.				
Energy	Majority of these villages have electricity powered by FEA, hence electric appliances are available. The top four appliances most household have are Radio 18%, TV 17.7%, DVD player 12.9% and phones 11.7%. All households still rely on firewood for cooking. This is supplemented with kerosene.				
Water & Sanitation	All villages have communal piped water supply. Creeks are used for washing and bathing. Majority of the houses in the five villages have flush toilets. Water seal and pit toilets are still used in a few houses.				
Access	Accessible by road	No road access; by river	All accessible by road		
Natural Resource Use including SBPA	Eels, prawns, wild pig and 2 species of fish. Pigs & prawns on a monthly basis; fish on a daily basis. Primarily for subsistence use	Now resident some distance away and do not use the SBPA for hunting, fishing or gathering	Not reported	Do not harvest or gather non-forest timber products from the SBPA.	Eels, prawns, wild pig and 2 species of fish. Visit SBPA on an annual basis.
Top two Priority Village Needs	Government Assistance; for transport and road infrastructure	Scholarships and transportation.	Scholarships and Livelihoods trainings	Farming, agriculture tools, Manure and Road infrastructure. Connecting bridge from village, across the river.	Scholarship and Workshops trainings that would benefit rural dwellers.

Village	Naseuvou	Nukusere	Naivucini	Delailasakau	Nadakuni
Indicators					
Main "threats" to the conservation of the SBPA	Firewood collection, materials for building houses	Indiscriminate cutting of trees	Indiscriminate cutting of trees	logging, burning, harvesting resources & cattle grazing	Use of poison for fish (duva) and other chemicals; spread of invasive African Tulip Tree; Poaching by Wainimala and Namosi villagers

Proposed Alternative Development Options for the SBPA

Hydroelectricity and Water Supply

The Sovi River has been investigated for its potential as a water supply for Suva and as a potential hydroelectric power supply through the building of a high dam across the Sovi River at Natuba (AIDAB 1978). As a water supply it was discounted in 1999 and SBPA was regarded as having only a remote possibility of being required for power generation (GHD, 1999).

However, the option for SBPA to provide both water to Suva and for hydroelectric power was revived by the Water Authority of Fiji in 2012, posing a new threat to the SBPA.

Agriculture

Parts of SBPA have been investigated for their agricultural and settlement potential although the marginal nature of the land and soil and the inaccessible nature of the proposal sites has made such schemes inadvisable.

Forestry

The forests of SBPA have received much interest for their timber resources. Merit Timber's 1980 concession over the Basin did not result in any logging inside SBPA and was tied up in litigation with TLTB from 1981. The case was finally resolved in favour of TLTB in November 1994. The landowners have agreed to forego logging in favour of conservation opportunities. An annual payment of forestry royalty payment based on the value of the timber resources has been calculated using the Department of Forestry's standard Annual Royalty calculation procedure after a timber inventory was carried out by the DOF in 2005.

Mining

In 2008 Namosi Joint Venture (NJV), a group of three companies; Newcrest Mining Limited, Material Investments (Fiji) Ltd (Mitsubishi) and Nittetsu Mining Co. Ltd., commenced exploration under the SPL 1420. Exploration is mainly in the Waisoi area in Namosi and focussed on the potential for gold and copper extraction.

In 2012, a proposal to explore the Wainavadu Valley as a site for mine tailing deposit was approved by government resulting in the removal of the Wainavadu Valley from the SBPA (Figure 4). A decision on whether the Wainavadu Valley will be returned to the SBPA lease will be made by government based on the outcome of the EIA report.

Apart from the development interests for SBPA there have been several major reports and consultancies that have recommended that the outstanding natural features of SBPA be protected.

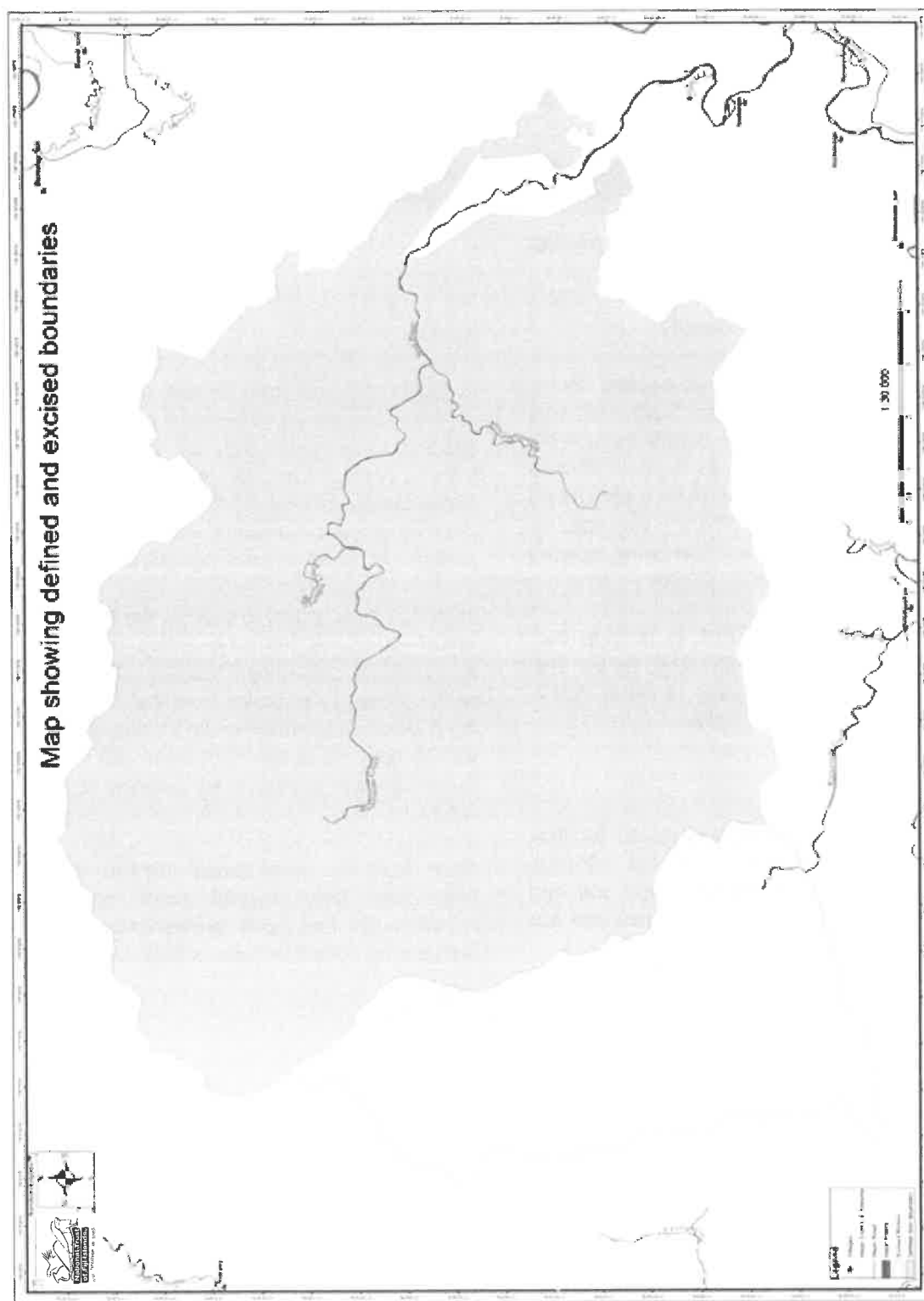
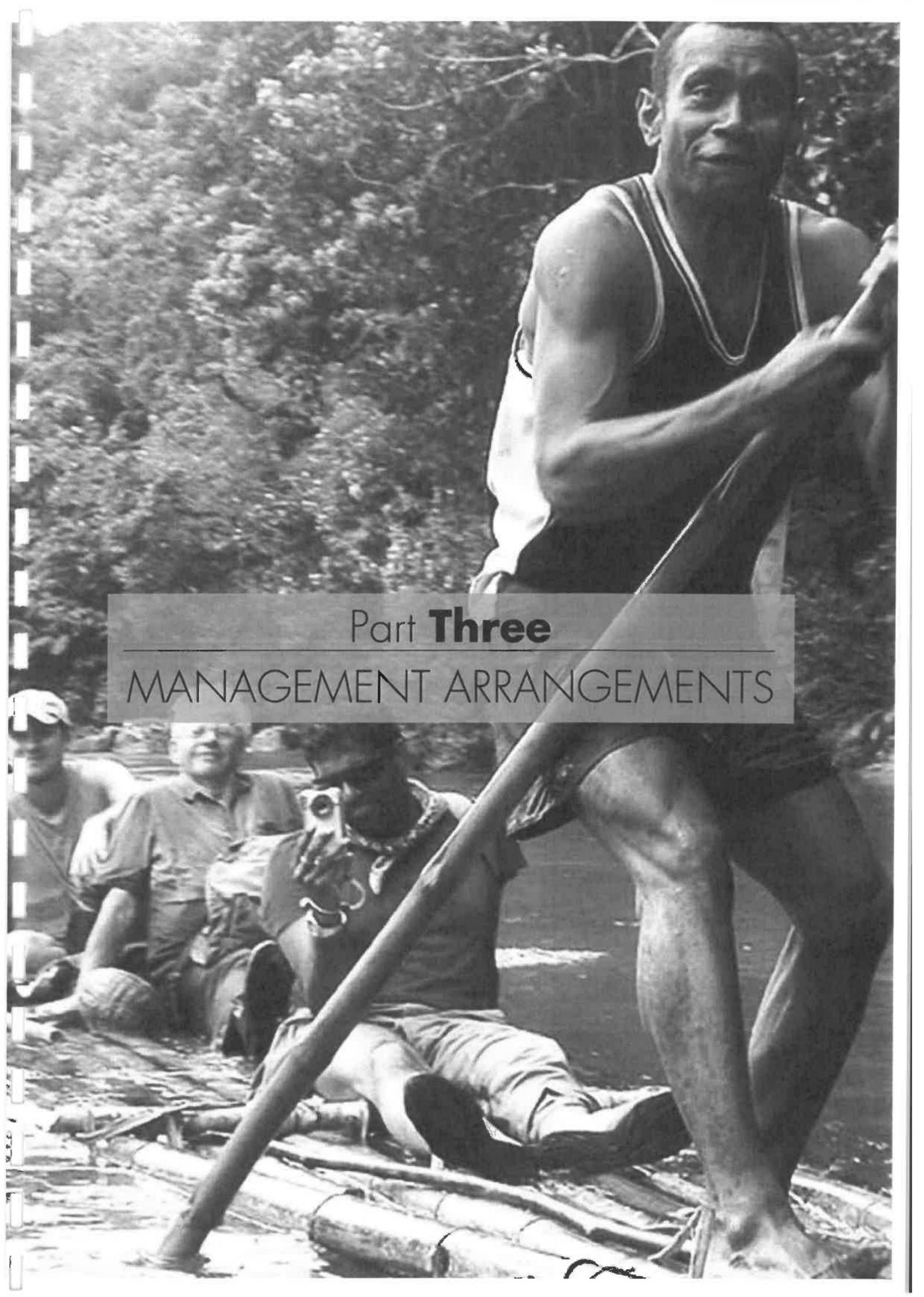


Figure 4: SBPA with Defined and Excised Boundaries



Part **Three**
MANAGEMENT ARRANGEMENTS

DESIGNATION & STATUS

The boundary of the initial SBPA area was surveyed and registered with the Department of Lands and generally follows the mataqali boundaries. Figures 3 & 4 refer to the surveyed and registered boundary, and the final SBPA boundary with the excised portion.

The SBPA was leased to the National Trust of Fiji from the iTaukei Lands Trust Board on 25 May 2012.

The SBPA is a declared National Site of Significance under the NBSAP, declared as a National Heritage Site by Cabinet Decision in 1991, and is placed on the UNESCO World Heritage Tentative List. The National Trust for Fiji will declare the SBPA as a Natural Heritage Site under the National Trust Amendment Act (1998) when the co-management framework is fully operational.

CO-MANAGEMENT FRAMEWORK

Overview

The successful management of the SBPA will to a large degree depend on the positive attitude and support of the landowners.

The concept of co-management (collaborative management, joint management, participatory management) has become an essential element of protected area management throughout the developing world. Not surprisingly, there is no single definition which is applicable for the many forms that it takes given the wide spectrum of protected areas and socio-economic contexts. The co-management framework to be developed for the SBPA will be unique and closely and progressively adapted to the circumstances of the SBPA.

Having a co-management framework for the SBPA is an acknowledgement that despite the alienation of the land through a lease to a third party for conservation purposes, the landowners will always play a major and active role in SBPA's management. The very success of the SBPA will depend on a robust, progressive and mutually agreed co-management framework.

Central to the framework will be good two-way communication and a responsive management. There are many elements in the relationship which will need to be developed, discussed and mutual agreement reached.

Important amongst these is that the relationship needs to be with the "Registered Landowners" themselves and not with or through other beneficiaries who have an interest in the lease but are not necessarily landowners.

Although the ideal would be for SBPA management decisions to be made through some form of landowner consensus, the reality demands that a single management body makes decisions after as much consultation as is feasible with landowners and other stakeholders.

Objectives

The current objectives of the co-management framework are to:

1. Establish a communication system/ procedure between the National Trust of Fiji and all the landowners which enables the quick exchange of information in both directions and the wide dissemination of information amongst the landowners. The communication system to be documented and agreed, and to be the only channel of communication between the two parties in respect of all issues relating to the SBPA;

2. Raise understanding and awareness of the conservation objectives of the SBPA and the role of the landowners;
3. Raise landowner capacity to enable them to participate in SBPA management activities at all levels;
4. Identify and assist with sustainable development opportunities for landowners which are appropriate for the SBPA;
5. Customary rights to be respected with appropriate and agreed limitations. Such rights to be registered;
6. Data and information collected from landowners and communities to remain their property and to be shared with them in a form which is understandable; and,
7. Introduce a conflict-resolution procedure.

MANAGEMENT STRUCTURE

Overview

The NTF manages natural, cultural and mixed heritage sites protected under the NTF legislation. The SBPA will be included as a natural heritage site managed under the NTF. For areas where the NTF requires specific technical advice, this will be sourced externally. The NTF will chair the SBPA Steering Committee (SBPA SC) comprising key stakeholders which will provide policy advice to the National Trust for the management of the SBPA. The elements of the administrative structure are shown in Figure 5.

Major Stakeholders

National Trust of Fiji

The NTF is the sole management agent and authority for the SBPA. The SBPA is managed according to its Management Plan by a SBPA Conservation Officer who reports directly to the Director of the NTF.

iTaukei Land Trust Board

The iTaukei Land Trust Board's role is:

1. To act as Lessor on behalf of the landowners;
2. To disburse lease and royalty funds originating from the SBPA Trust Fund to the landowners according to normal procedures; and
3. To approve the Management Plan on the advice of the SBPA Steering Committee.

Landowners

Landowners and the wider communities of the villages in which they reside are the key stakeholders in the SBPA. Their roles and responsibilities will be gradually defined as the co-management framework (refer Part Four) is developed. Landowner representatives will be elected through the SBPA Landowners Committee to the major SBPA management committees.

Department of Environment

The Department of Environment has the national mandate for all environmental protection and conservation. Their role is to ensure that the SBPA is managed according to national standards and to provide policy guidance. The Fiji National Protected Areas Committee which is responsible to the National Environment Council will assist the NTF in decisions of policy advice relevant to the operation and management of the SBPA.

Department of Forestry

The Department of Forestry has responsibility for the management of all forests in Fiji. Their role is to ensure that the SBPA is managed as a protected forest according to their forest management and classification systems.

iTaukei Affairs Board

iTaukei Affairs Board will provide guidance on policy issues that affect indigenous communities.

Institute of Applied Science, USP

The USP Institute of Applied Sciences will provide advice on scientific issues.

Conservation International

Conservation International has an MOU with the NTF. Through the CI Fiji Program, CI will provide technical and management advice for the SBPA. CI is committed to ensuring the SBPA Trust Fund is completely capitalised and through the Global Conservation Fund undertakes to support the NTF in the provision of financial assistance to meet costs of lease payment and management of the SBPA until the SBPA Trust Fund is fully operational.

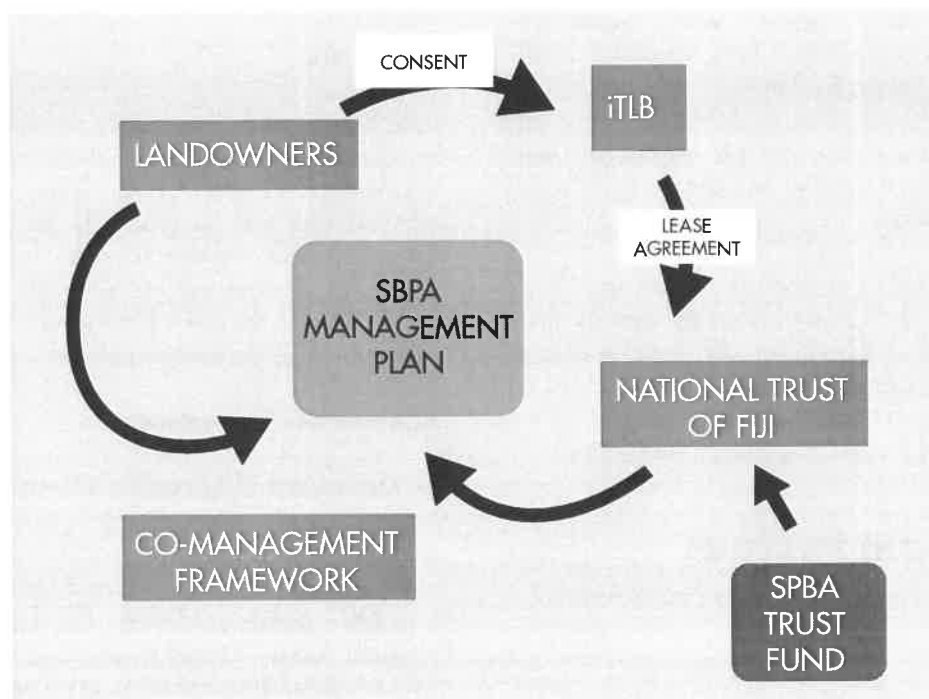


Figure 5: Elements of the SBPA Administrative Structure

SBPA Steering Committee (SBPA SC)

Purpose

A SBPA Steering Committee (SBPA SC) will be set up by the NTF under the National Trust Amendment Act (1998) and it will become the primary source of advice to the NTF on all matters pertaining to the management of the SBPA. The NTF Council will have no direct role in the management of the SBPA and will act solely at the policy level.

Composition

SBPA SC will comprise the following organisations:

1. NTF (Chair);
2. iTaukei Land Trust Board;
3. Department of Forests;

4. Department of Environment;
5. iTaukei Affairs Board;
6. Conservation International
7. Landowners – 2 representatives elected by the SBPA LC;
8. Institute of Applied Science, USP – as an advisor on scientific issues;
9. Co-opted members as required.

Working Arrangements

The SBPA Conservation Officer will be the Secretariat for SBPA SC.

Organisations will appoint their own representative who will be a permanent member of the SBPA SC until replaced by the organisation.

The SBPA Landowners Committee will be responsible for the appointment of the Landowner Representatives.

The Committee will require a quorum of four. Each committee member will have one vote, the Chair will have a deciding vote, if necessary. The Secretariat does not have voting rights. The Committee will meet twice a year.

Sub-Committees

The NTF, on the advice of the SBPA SC, may establish sub-committees to address or advice on specific issues (technical, investigative, conflict resolution development of the co-management framework etc.). These committees will report to the NTF through the SBPA SC.

MANAGEMENT PLAN

Approval of a Management Plan for the SBPA is a condition of the lease with the landowners. An approved and current Management Plan will be extant at all times. Revisions of the Management Plan will be undertaken at least every five years and before the expiry of the extant plan.

Preparation and reviews of the Management Plan are the responsibility of the NTF (as lessee). Approval of the Management Plan and its revisions will be by the acceptance by the NTF Council after endorsement by the SBPA SC. Once the revised management plan is approved by the NTF Council it will be submitted to the iTLTB.

FINANCIAL MECHANISMS AND SUPPORT

SBPA Trust Fund

The SBPA Trust Fund is being established as an endowment fund to provide financial sustainability of the SBPA over the long term (Figure 6). The total amount targeted for the capitalisation of the Trust Fund is USD\$4.25 million. Currently USD\$3.75 million has been secured.

The Trust Fund will support three broad cost categories:

1. Annual royalty and lease payments to SBPA landowners
2. Annual contributions to a Community Conservation and Development Fund
3. Management budget for the NTF.

On an annual basis the Trust Fund Manager will indicate to the NTF the annual returns available from the trust fund investments. The NTF will then make a submission on how the funds will be spent with priority given to the first two cost categories.

Alternative Sources of Funds

Alternative Funds may be sourced to address specific needs. This will be held in a separate bank account by the NTF and will be accounted for separately.

Royalty and Lease Payments to Landowners

In accordance with the Lease between the iTaukei Land Trust Board and the NTF of Fiji, an annual lease and an annual timber royalty will be paid as determined by the TLTB. The TLTB has a standard for the calculation of lease rentals and timber royalty and the amount payable for the SBPA will be specified in the lease.

The NTF will make bi-annual payments to the TLTB in January and June of each year. The TLTB has a legislated procedure for disbursement of the lease monies to the landowners.

Community Conservation and Development Fund (CCDF)

Not all members of the five landowning villages are landowners. To ensure that all members of these villages have an incentive to protect the SBPA the Community Conservation and Development Fund (CCDF) will be set up to finance community projects.

When the SBPA Trust Fund is fully capitalised, funds will be made available for disbursement to the 5 landowner villages each year (Naivucini, Nadakuni, Naseuvou, Delailasakau, and Nukusere). The CCDF is specifically intended for the village communities as a whole.

The NTF will finalise arrangements for the disbursement of these funds with the five villages.

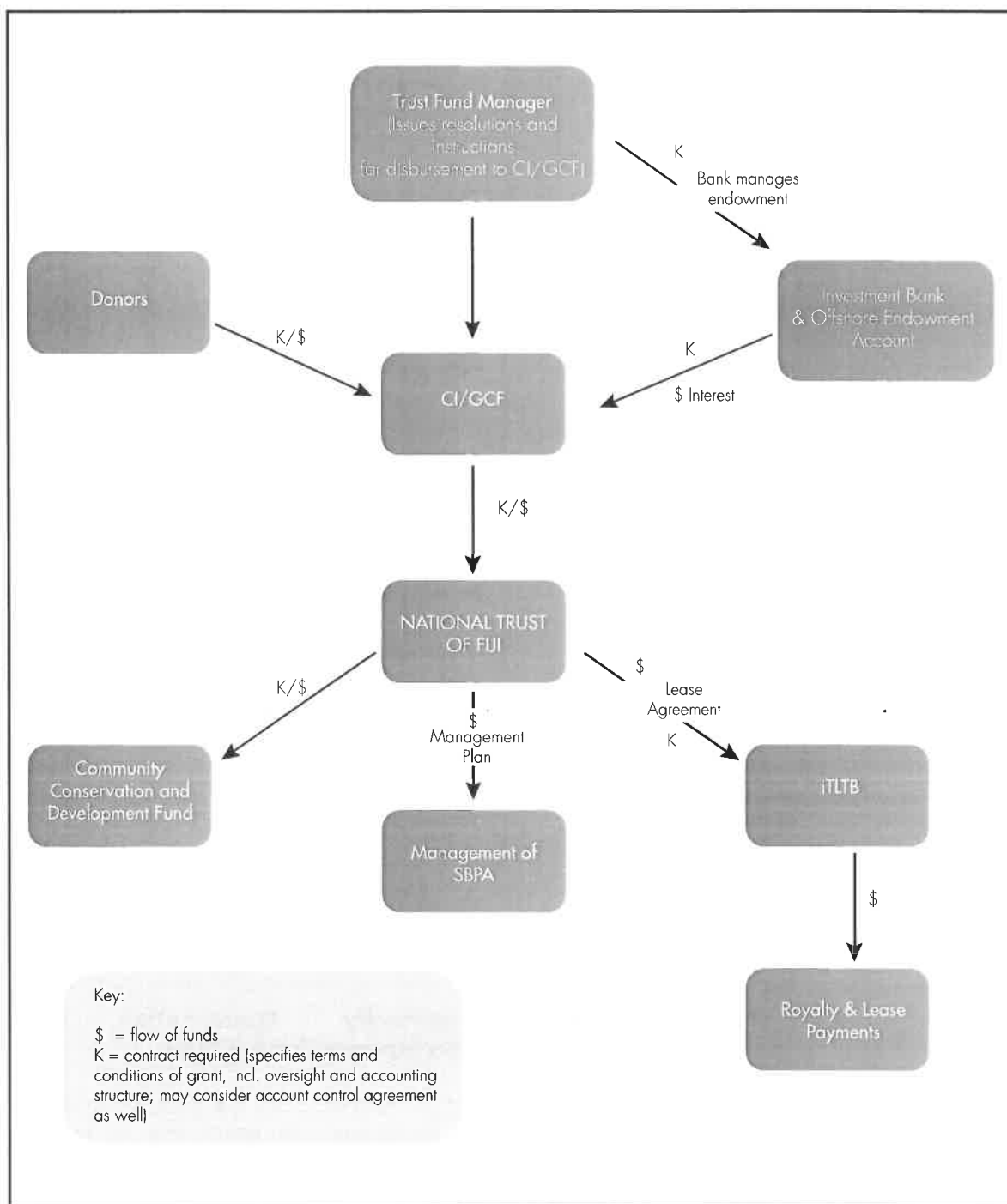


Figure 6: SBPA Trust Fund Structure Diagram

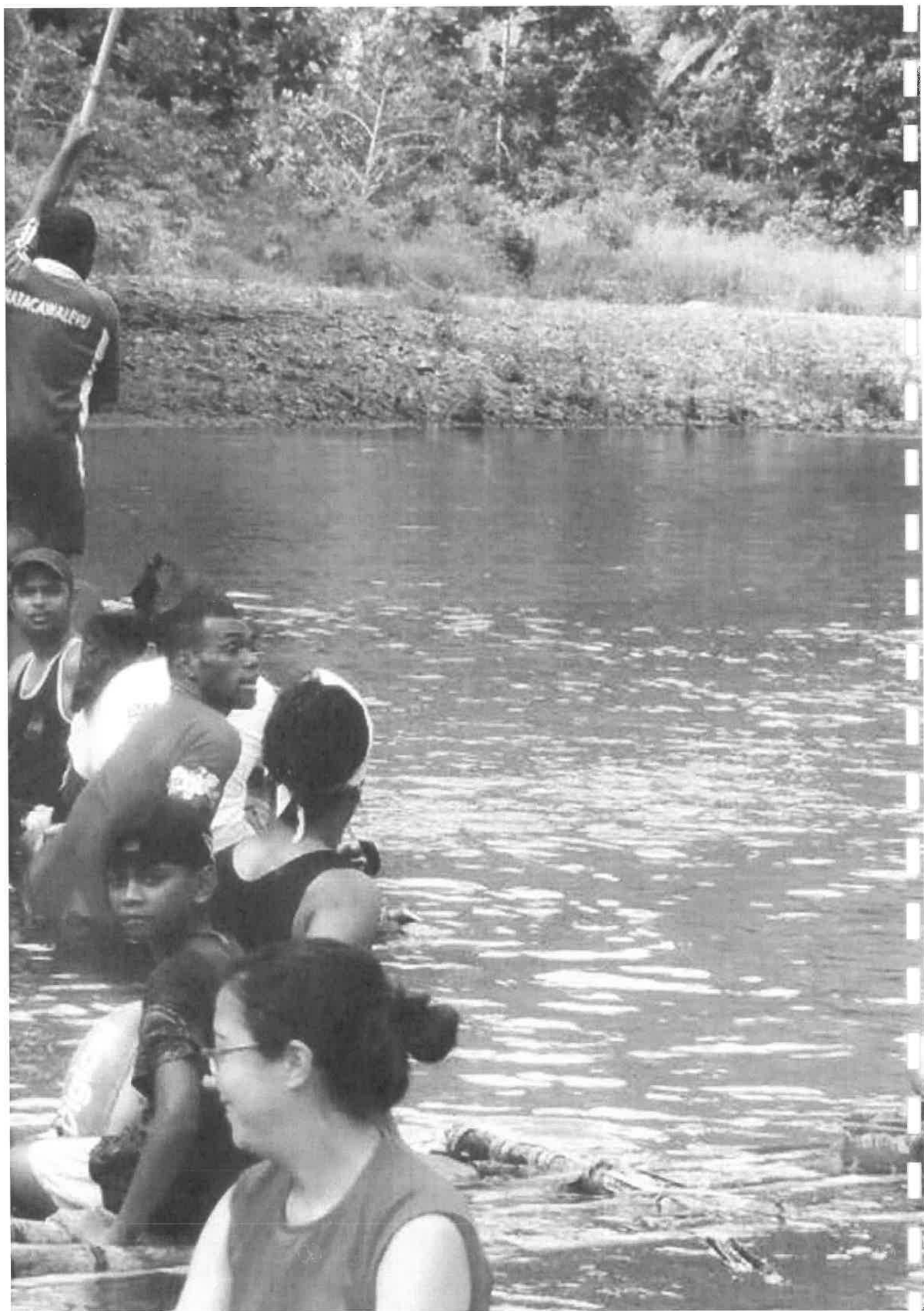
Management Budget for the SBPA

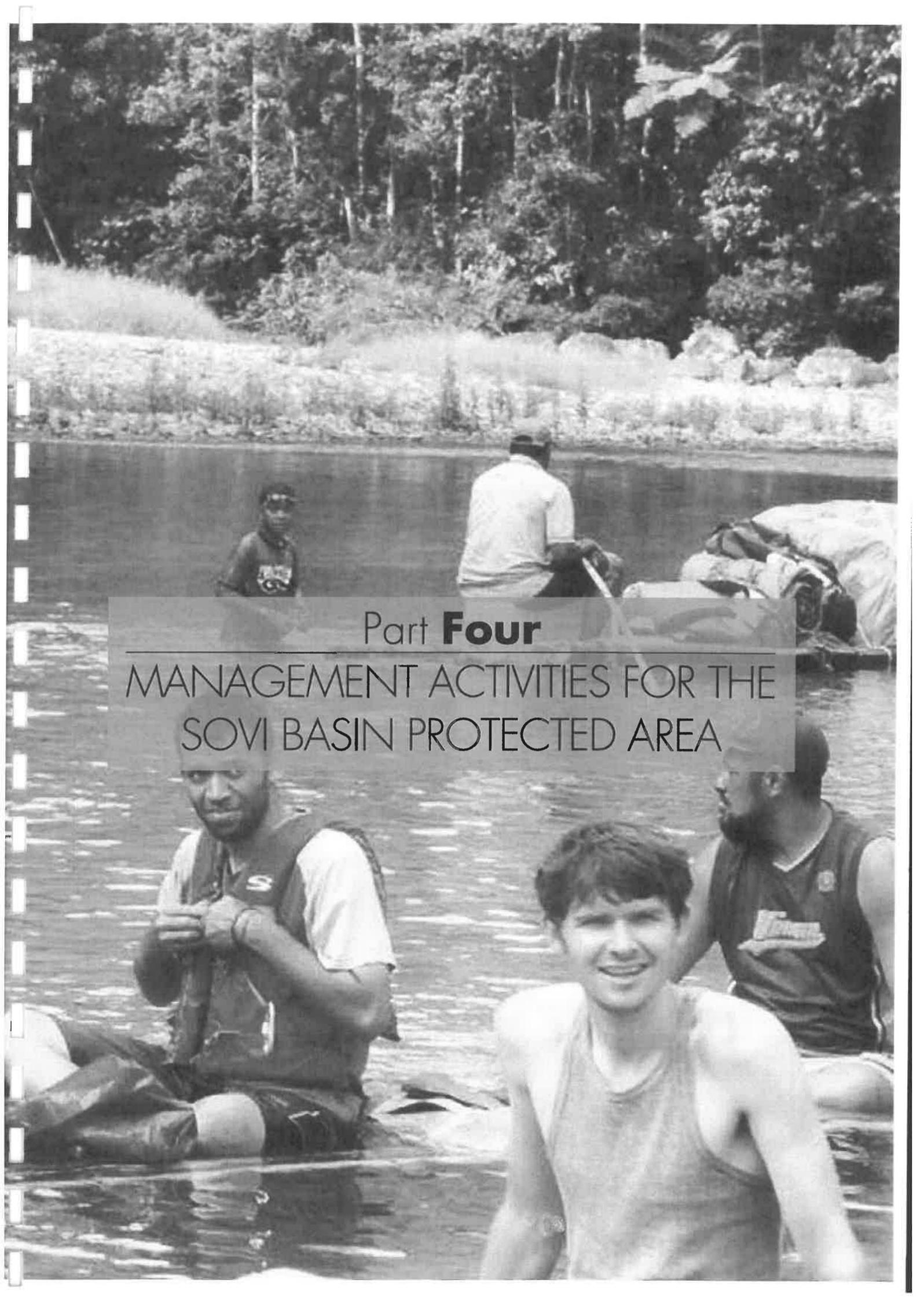
The NTF and the Global Conservation Fund/Conservation International will agree on a management budget for the SBPA on an annual basis. The agreed budget will be transferred to the NTF as an annual management grant and will include the cost of operation of the SBPA SC and support to the SBPA LC.

Annual Accounts

The NTF will provide annual accounts for the:

1. Management Budget for the SBPA;
2. Community Conservation and Development Trust; and
3. Additional Funds received for SBPA.





Part **Four**
MANAGEMENT ACTIVITIES FOR THE
SOVI BASIN PROTECTED AREA

This section of the Management Plan provides a management framework for the SBPA. Issues have been identified which are briefly explained, one or more policies are adopted and the necessary actions are listed. At the end, the actions are summarised and prioritised.

CO-MANAGEMENT FRAMEWORK

Issues

The importance of incorporating the landowners in a co-management framework has been stressed above (Part Two). An agreed lease and royalty payment for foregone timber opportunities provides a foundation for a successful relationship. However, much more will be required to ensure that the landowners continue to support and contribute to the initiative. There is a danger that such matters will be viewed piecemeal and insufficient resources provided for their identification, action and timely resolution. To ensure that all the landowner issues can be responded to in the correct managerial context requires the establishment of a robust, progressive and mutually agreed co-management framework.

Policy

To recognise that the affairs and aspirations of the landowners remain an integral component of the management of the SBPA and that they need to be formally addressed through the development of a co-management framework.

The key concepts of the co-management framework are:

- Communication and information exchange;
- Promotion of the landowner interests; and,
- The reaching of agreements on roles, responsibilities and procedures.

Co-management in the context of SBPA involves

stakeholders working together to manage a resource in a sustainable way that achieves the goals of all parties consistent with their roles. Co-management does not imply legislative authority, jurisdiction, or devolution.

The mechanisms of the co-management framework at SBPA will develop over time, there will be much learning from experience gained. Regular revisions of the Management Plan will enable experience to be formally incorporated into agreed management procedures or directions.

Concept of Communication and Information Exchange

An enhanced communication system and a free-flow of information will be key elements of a successful co-management framework.

Decision-making at the Mataqali and Village Level

Decision-making at the village level within the mataqali and between mataqali differs from village to village, but is generally well established and there would appear to be no need to change it.

SBPA Landowners' Committee (SBPA LC)

The SBPA directly involves 9 mataqali landowners residing in 5 villages and, in addition, about an equal number of mataqali in the villages are important stakeholders because of their close ties with the landowners.

It is essential for the efficient management of SBPA that the landowners and close community stakeholders establish a forum whereby their interests can be better discussed and represented as a collective, and which can elect representatives to make decision on their behalf, as well as acting as a channel for two-way communication.

It will be difficult to manage the SBPA efficiently if all the landowners/stakeholders and the NTF communicate on an individual basis.

The type of 'forum' in which the landowners and close community stakeholders wish to unite needs to be decided by themselves – it could be in the form of a registered Trust, Association, NGO even a Company or Union, or even a committee.

The forum developed should have the ability to generate funding to support their proposed activities and sustainability. There are many examples where Fijians have associated together outside traditional structures and the SBPA landowners/stakeholders will need advice on the opportunities available. The association members will elect the two landowner representatives to the SBPA SC.

The purposes of the SBPA LC need to be clearly articulated and understood for registration purposes. In essence, the association will act as a forum:

1. For members to determine their mutual interests;
2. To facilitate information exchange among members; and,
3. To enable landowner representatives to SBPA SC to be elected.

Concept of Promotion of Landowner Interests

The SBPA LC will discuss and represent all landowner interests and aspirations. It is important that all interests are transparent and openly discussed even though some may not be shared by all groups. For those interests that are specific to one or a few groups the SBPA LC representative has the responsibility of raising the issue with the SBPA SC.

Concept of Reaching of Agreements

The co-management framework will either succeed or fail as a result of the ability of all stakeholders to reach and abide by mutual agreements. These will be of many kinds both formal and informal and administrative structures will need to be established to foster these.

There will need to be a willingness to reach agreement on all sides, based on an understanding of relative roles and responsibilities. When issues become very contentious, then there will need to be a dispute resolution procedure in place which is agreed to by all. There will be no winners if disputes end up with the legal fraternity and the courts.

Actions Required

The efficacy of the co-management framework will depend on good and responsive communication between the managing authority and the landowners, in both directions. A preliminary listing of co-management framework actions/requirements is given in Table 5.

Co-management is a well developed concept in certain situations and locations around the world. It would be very useful for a technical assistance to be arranged to see what exists elsewhere and what could be appropriate for the Fijian context.



Table 5: Actions for Developing the Co-management Framework

Key Co-management Concept	Co-management Objective	Actions
Communication and Information Exchange	Establish communication/information dissemination system/procedure(s) which is/are agreed to and documented. Landowner and other stakeholders should be able to determine their own system of communication & information exchange provided it conforms to basic requirements.	<ol style="list-style-type: none"> 1. Consult with landowners on SBPA LC as outlined in the Management Plan 2. Key issues relate to existing communication, information dissemination modes with landowners and associated stakeholders, and the changes are required. This will include: <ul style="list-style-type: none"> • intra-mataqali communication/dissemination; • inter-mataqali dissemination/dissemination; • non-landowner community dissemination; • formation of representative forum; • SBPA LC mode and schedule of regular meetings; • selection or representatives for various fora • schedule of meetings with NTF; 3. Training to keep minutes and records 4. Manual/procedure to be prepared, translated, discussed, modified as required and agreed; 5. Manual to be copied and widely distributed
	Raise understanding and awareness of the conservation objectives of the SBPA.	<ol style="list-style-type: none"> 1. Develop a programme with landowners and non-landowners in surrounding villages – including neighbouring communities; 2. Tailor material for target groups – elders, women, children, religion, etc. 3. Talks and displays in schools 4. Implement programme over the period of the MP
Promotion of the mutual interests of the landowners and the Protected Area	Raise capacity of landowners to participate in management activities at all levels	<ol style="list-style-type: none"> 1. Identify opportunities for immediate employment (part time) - assisting visitors, researchers etc.; field monitoring etc. 2. Identify courses that can be undertaken; first aid; wildlife identification; record keeping, camp organisation, hygiene etc 3. Identify medium and longer term pathways and opportunities for landowners to join the management team 4. Prepare a plan and programme for implementation
Reaching of agreements on roles and responsibilities	Raise understanding and acceptance of the role and responsibilities of the landowners and communities	<ol style="list-style-type: none"> 1. Workshops with landowners and non-landowners in surrounding villages – including neighbouring communities; 2. Presentations at Tikina meetings etc.
	Define agreement modes ie what constitutes an agreement ?	<ol style="list-style-type: none"> 1. Workshops with landowners and non-landowners in surrounding villages – including neighbouring communities; 2. Presentations at Tikina meetings etc. 3. Discussion and agreement with SBPA LC 4. Draw up and. Translate into Fijian and ensure that it is disseminated
	Reach an agreement on a conflict resolution procedure	<ol style="list-style-type: none"> 1. Workshops with landowners and non-landowners in surrounding villages – including neighbouring communities 2. Presentations at Tikina meetings etc. 3. Discussion and agreement with SBPA LC 4. Translate into Fijian and ensure that it is disseminated

CUSTOMARY RIGHTS

Issue

The customary rights of landowners and other community members to access and utilise resources within the SBPA is recognised. We need to ensure that negative impacts of activities are minimised or eliminated. Commercial harvesting is not allowed.

Customary rights are defined in the Forest Decree 1992 but are not recognised in alienated native land without the lessees consent. In the case of the SBPA, the members of the landowning units of the leased SBPA are permitted to enter the leased land at all times for the purpose of hunting and fishing and collecting for their own use those plants (or whose fruits or roots are) traditionally gathered.

Policy

While recognising customary rights of access and resource utilisation, steps should be taken to minimise negative impacts. In determining whether an activity is sustainable and/or may have significant impacts on biodiversity or landscape values, regard will be given to factors including:

- *the ecological sensitivity of the site;*
- *the size of the resource, and the scale and intensity of the proposed use;*
- *the ability of a resource to regenerate and replace itself; and*
- *the cumulative effects of activities on an area or resource.*

New commercial uses of forest and other natural resources within the SBPA (i.e. uses which previously have not existed in the area) will not be recognised as customary rights.

Action Required

1. Document all current users and uses within the SBPA.
2. Through widespread consultation define customary rights and agree on a protocol that defines activities that are allowed within the SBPA.

STRENGTHENING THE NATIONAL LEGAL FRAMEWORK FOR PROTECTED AREAS

Issue

Fiji currently has no protected areas legislation through which protected areas like the SBPA can be designated. Any designated protected areas will need to consider the customary rights of the landowners and other community members to access and utilise resources within the protected areas.

Policy

The SBPA is managed as a protected area and will be proposed for designation as such when national protected area legislation is enacted. The SBPA recognises the customary rights of the landowners and other community members to access and utilise resources within the protected areas. The co-management approach ensures that landowners and community are effective management partners.

Action Required

1. NTF to take the lead role in advocating for the drafting of a national protected area legislation.
2. Ensure that lessons learnt from the establishment of the SBPA and the implementation of the SBPA Management plan serves as a case study to assist in the setting up of a national protected area network.
3. Work with other stakeholders to implement initiatives that will facilitate setting up of national protected area network.
4. Review the following policies:

Fiji REDD+ Policy
Fiji CLimate Change Policy
Fiji World Heritage Policy and establish a framework for their applicability to the SBPA where relevant and their linkages to the proposed national protected area legislation.

ZONING

Issue

The primary purpose of zoning is to identify the appropriate usages of areas within the SBPA. The effectiveness of a zoning plan will rely on the users' acceptance of the plan and resources to implement it. Users of the SPBA are:

- Landowners;
- Non landowners with customary rights; and,
- Visitors (researchers and SBPA visitors)

Information is currently inadequate to comprehensively identify ecologically sensitive and archaeological sites.

Buffer zones manage activities which can threaten conservation values outside but close to the boundary of protected areas. The Vunitorilau corridor is a key biological corridor identified as an area of conservation interest.

Zoning Policy

Zoning is an important management tool for the effective management of the SBPA. There is currently insufficient information to develop a zoning plan. The collection of information to enable formulation of a zoning plan is a high priority.

Actions Required

1. Research on the identification of ecologically sensitive sites, and areas of elevated ecological or conservation value.
2. Undertake an archaeological evaluation of the known sites and additional sites which become known with the objective of establishing and prioritising their likely significance and developing proposals for investigation and protection.
3. A specialist oral-historian should be engaged to record all the oral history relating to the SBPA.
4. Consultations with landowners and other stakeholders to establish existing usages of the SBPA.
5. Identify and establish buffer zones where appropriate.

BOUNDARY MARKING

Issues

The geographical boundary of the SBPA has been surveyed and registered with the Department of Lands. For the most part, the boundary of the SBPA is a natural boundary – the watershed of the basin. There are some areas where this is not the case and in these areas the boundary is to be physically demarcated and all local communities made aware of its location.

The landowning boundaries within the SBPA have not been surveyed. In most instances these boundaries are clear and not disputed. However in one instance there is dispute over a boundary and there may be a risk of more boundary disputes in the future.

Policy

In areas where the SBPA boundary is not a well established natural boundary, it should be physically demarcated and local communities made aware of its location. All efforts will be made to survey and register all landowning boundaries within the SBPA.

Action Required

1. Physical demarcation of the SBPA boundary.
2. Make communities aware of the SBPA boundary.
3. Survey and registration of landowning boundaries as resources allow. Priority will be given to disputed land owning boundaries.

TRAINING

Issue

There are limited formal training opportunities for protected area managers and staff in Fiji and these will have to be found and attended as available. In order to implement the policies and actions identified in this Plan, the conservation management capacity and skills of staff will need to be developed.

In order to effectively participate in the management of the SBPA and to efficiently utilise the benefits from leasing of their land, landowners need to be provided with necessary training opportunities.

Policy

Ongoing training in organisational and conservation management will be provided for current and future staff with priority being given to improvements in staff capacity and utilisation, the role of landowners and co-management, increased understanding of conservation, and a greater commitment to and effectiveness in, carrying out conservation work.

Actions Required

A training need assessment will be carried out and a training programme formulated to address all stakeholder requirements in order to effectively implement the SBPA Management Plan.

TOURISM

Issue

The SBPA has outstanding, internationally significant, tourism-oriented values, tempered only by difficulty of access. Tourism offers one of the most significant opportunities for landowner involvement and benefit, while the existence of the SBPA has major positive implications for tourism at the national level.

Policy

Tourism, both domestic and international, to the SBPA is a priority development opportunity for the NTF and the landowners, but will only be pursued if negative impacts can be minimised to acceptable levels.

Action Required

A tourism development plan be commissioned which will include widespread consultation with the landowners, the wider community and the national tourism industry. The study will need to look closely at the inherent impacts (social, biological and physical), and will need to examine how tourism benefits can be equitably distributed amongst the landowners.

INVASIVE SPECIES

Issue

SBPA is probably as pristine an area of forest as can be found anywhere on Viti Levu. Nonetheless certain alien, invasive species are already present – rats and mongooses are major predators and are probably a significant threat to the small population of long-legged warblers and the red-throated lorikeet (if it still survives). Tilapia are probably a very serious threat to native fish. Of the 34 alien plant species identified inside the SBPA to date, six are potentially serious invasives, fortunately most of these weeds are restricted to riparian habitats, but some of these have the potential to spread.

Human entry is the principal agent for the introduction of these and other weeds. Restrictions on entry are important and this includes researchers and visitors as well as landowners or neighbouring communities. Strict licensing of entry – with the exception of the path to the summit, should be maintained.

Policy

Restrict the entry and spread of invasive species within SBPA by establishing appropriate biosecurity protocols. Eradicate invasive species where feasible. Given the scarce resources and information available, resources should not be spent on invasive control unless there is adequate information available on the severity of the threat and feasibility of control or eradication.

Action Required

1. Research on the threats posed by invasive currently found in SBPA and the feasibility of their control / eradication should this be necessary or desirable.
2. Biosecurity protocols for entry into SBPA which minimise introduction of invasive species should be drawn up and adopted.
3. Community awareness raised on the threats posed by invasive species.

SPECIES THREATENED WITH EXTINCTION

Issue

Currently 13 species globally categorised as “threatened with extinction” have been identified in or near the SBPA (Table 6).

The conifer *Acropyle sahniana* and the red-throated lorikeet are categorised as Critically Endangered. Very little is known about the status of any of the threatened species in SBPA. A good example of how little is known is the long-legged warbler which was re-discovered in SBPA in 2003 after nearly a century without confirmed sightings on Viti Levu.

However, once its continued existence was confirmed and its habitat requirements known, it is now being found at low densities in appropriate forest areas throughout central Viti Levu including in the SBPA.

Threatened species include those that are globally recognised for instance those recognised by IUCN (IUCN 2006) and others which are of national and cultural interest. For many groups – plants and invertebrates in particular, the IUCN database is deficient in regard of Fijian species and further research is required.

Policy

To develop an appropriate understanding of the threatened species of fauna and flora currently occurring in SBPA.

Action Required

1. To undertake further baseline surveys to determine the status of all the threatened species in SBPA with priority given to those listed in Table 6.
2. To liaise with IUCN to update the list of threatened species database with up to date information.
3. To draw up a list of nationally and culturally important and threatened species in SBPA.
4. Priority studies are summarised in Table 6.

Table 6: Priority Threatened Species with Priority Study Requirements in the SBPA

Species	Current Global or Other Status	Study Requirement
Birds:		
Red-throated Lorikeet	Critically Endangered (IUCN)	Surveys to determine continued survival
Long-legged Warbler	Endangered (IUCN)	Status and threat monitoring
Peregrine Falcon	At Risk (Fiji – Watling 2001)	Breeding Status – Korobasabasaga and elsewhere
Mammals:		
Pacific sheath-tail bat	Endangered (IUCN)	Status – if present
Fiji Mastiff bat	Near threatened (IUCN)	Status – if present
Reptiles & Amphibia:		
Fiji Burrowing Snake	Endangered (IUCN)	Status – if present
Campbell's skink & allied undescribed <i>Emoia</i> spp.		Status – if present
Fish:		Further inventory work (recent inventory work in Fiji has resulted in the discovery of at least 8 new species in a group which was thought to be well known)
Flora:		
<i>Acropyle sahniana</i>	Critically Endangered (IUCN)	Status – if present. One population currently known just outside boundary of SBPA.
<i>Schefflera euthytricha</i>	Data Deficient (IUCN)	Recorded – status required. Believed to be Critically Endangered

MONITORING AND INFORMATION MANAGEMENT

Issue

A monitoring framework (Table 7) will provide a coordinated approach to the monitoring of species, sites and habitat /landscape levels within the SBPA and will provide a means of evaluating the success or failure of the conservation area based on several chosen key indicators.

The managing authority needs to be able to know the condition of conservation values for which it is responsible, and to be aware of changes in the condition of those values in time to take remedial action. Monitoring systems will be developed under this framework to provide this information. It is crucial that a methodology for evaluation of monitoring data be established and recorded at the beginning of a biodiversity monitoring exercise.

Otherwise subsequent evaluations of monitoring data may not be comparable with earlier ones because of the use of different methods.

Data which is collected but cannot be used either because: it was lost; or records were not kept; or data was kept in a format which cannot be accessed by users; is not useful for protected area management. Systems need to be introduced to manage this information.

Policy

To establish monitoring systems under the monitoring framework which are designed to provide information needed or useful for conservation management.

Action Required

1. Draw up and implement a monitoring strategy for the SBPA.
2. Place three rain gauges at locations around the SBPA and use as a basis for regular monitoring-surveillance surveys;
3. Establish protected area filing system and information storage and retrieval systems.

ENVIRONMENTAL IMPACT ASSESSMENT

Issue

It is important that all development activities which might impact on the values of the SBPA whether carried out inside or outside are subjected to an appropriate level of the EIA process before a decision is made on whether they should proceed or not.

There is a national requirement under the Environmental Management Act (EMA) 2005 and its regulations that certain types of activities be subjected to EIA. The Director for the DOE has the discretion to call for an EIA of any activity should the circumstances warrant it. Therefore a close link should be kept with the DOE to ensure that all activities that may impact on the SBPA, even if they occur some distance from it, are subjected to the appropriate level EIA.

Policy

All development activities which might impact on the values of the SBPA whether carried out inside or outside are subjected to an appropriate level of the EIA process before a decision is made on whether they should proceed or not.

Action Required

1. Establish an internal EIA process for all development activities undertaken as part of the SBPA Management Plan.
2. Liaise with the Department of Environment (DoE) to ensure compliance with EMA.
3. Put in place a monitoring and reporting system to identify and monitor any new developments around the SBPA.
4. Establish an independent expert review procedure for EIAs to provide comment to DoE for third party activities and those outside the SBPA, and to enable the authority to determine its own decision in relation to activities within the SBPA and entirely within its own discretion.

Table 7: Indicators for Monitoring and Evaluation of Conservation Status of SBPA

Indicator	Level at which it is applied	Main tools/ methods for obtaining information
STATE INDICATORS	Forest quality and forest health	Site/habitat -Disturbance transects/ Long term monitoring plots. -Remote sensing
	Changes in species IUCN Red List Category (Vulnerable, Endangered, Critically Endangered, etc.)	Species -IUCN Red List Index -Data analysis
	Change in species abundance for a few key species (e.g. threatened endemic species) 1) Red Throated Lorikeet (<i>Charmosyna amabilis</i>) 2) Long-legged warbler (<i>Trichocichla rufa</i>) 3) Gymnosperm (<i>Acropyle sahniana</i>)	Species -Field surveys -Methods will vary with different taxa.
	Forest Cover Change	Landscape Site/habitat -Remote Sensing (Landsat image analysis) -GIS
PRESSURE INDICATORS	Incursion of invasive alien species	Landscape Site/habitat -Disturbance transects/ Long term monitoring plots. -Methods will vary with different taxa. -Direct surveys
	Change in human population density and habitat quality around SBPA.	Landscape -National Census Statistics -GIS
RESPONSE INDICATORS	Actions and research targeting key (threatened and endemic) species	Species -Survey of research initiatives by looking at; 1) Number of research projects per year 2) Number of publications per year 3) Yearly funding allocation for research
	Efficient management of the Fund to respond to community needs	Landscape - Discussion of the village community based action plan during "base vakoro" (village meetings)
	Level of engagement of SBPA land owners in the management of the conservation area	Landscape -Number of local (landowners) people employed in the SBPA. -Household questionnaires
	Equitable sharing of benefits from SBPA Trust Fund	Landscape -House questionnaires -PLA exercise

INFRASTRUCTURE DEVELOPMENT WITHIN THE PROTECTED AREA

Issue

Difficulty of access into the basin is the likely principal reason for the absence of settlement in the SBPA. However, there will be considerable pressure for some form of infrastructure development within the SBPA to facilitate management, tourism, education and research.

Policy

1. *Infrastructure development (roads, buildings etc.) within, or adjacent to the SBPA, will be permitted only if rigorous environmental impact assessment reveals that the impacts can be minimised to acceptable levels.*
2. *All infrastructures permitted for SBPA development will be the property of the NTF but may be sub-leased subject to compliance with the lease with ITLTB..*
3. *No third-party infrastructure should be constructed in the SBPA. This includes amongst others: roads, hydro development, transmission lines and telecommunications.*
4. *Any proposals to construct third-party infrastructure in the SBPA will be subjected to rigorous environmental impact assessment at the planning stage, and if approved will be subjected to appropriate conditions to minimise impacts on conservation values.*

Action Required

Draw up a rigorous environmental impact assessment procedure which the NTF will follow (and require of others) for all infrastructure plans inside the SBPA or elsewhere, if the authority is involved.

MINING & QUARRYING

Issue

Mining and quarrying have the potential to cause significant impacts on conservation values. These impacts are highly unlikely to be able to be mitigated to a level consistent with the conservation goals of the SBPA. The Namosi open cast mine will, if developed, be Fiji's largest mine and will have major regional and national impact.

Current indications from the Namosi Joint Venture are that the SBPA will be directly impacted and as such the mine could have negative implications for the SBPA.

Policy

Mining and quarrying activities, including surveying or new prospecting, are not permitted within the SBPA.

Action Required

1. *Make the policy on mining and quarrying known to all landowners and the regulatory authorities.*
2. *Maintain regular contact and establish a positive relationship with the Namosi mine developers.*

RESEARCH

Issue

Research is a requirement for conservation management as well as an opportunity. There is not adequate knowledge of the conservation values of the SBPA to ensure effective protection. Research requires active direction and control. Researchers are renowned for:

- doing what they want to do instead of what protected area managers want;
- not complying with SBPA entry and/or research protocols;
- not providing adequate reports; and,
- not providing the raw data.

Policy

To encourage research and in approving or funding research, preference will be given to research which contribute to the resolution of high priority management issues.

All researchers will be required to comply with a strict permitting agreement.

All data collected from landowners and communities will remain the property of those communities, and assistance will be provided to communities to enable them to understand and utilise information derived from this data.

Action Required

1. Encourage and/or commission research in accordance with the priorities listed in Table 8.
2. Draw up a research approval protocol and a protocol for entry into the SBPA (prevention of accidental introduction of invasive weeds; fire management; camp organisation etc); and,
4. Ensure that landowners and other communities receive copies of all research information, and subsequent aggregations, or analysis derived from this data, in a form which is meaningful to them
5. Prepare a yearly report of all research findings for submission to the landowners."

SUMMARY AND RANKING OF ACTIONS

This section draws together the actions developed above and presents them in a tabulated form (Table 9) as program groups and ranked in four ways.

Firstly, they are ranked by priority. This is the priority at the time of the preparation of the management plan.

Secondly, they are ranked in terms of staff capability. Can the current staff member be expected to undertake the work or is assistance required? If so, who should assist and this is included as the third ranking - who is responsible, or how are the tasks to be undertaken? It is assumed that the government and non-government agencies currently serving on the SBPA SC will continue to assist the NTF.

The fourth column shows Workplan Categories of Actions (Table 9). This allows the table to be used to prepare work plans. Workplan categories are based on the Strategic Objectives of the NTF (Attachment 3)

Table 8: Preliminary Research Priorities for SBPA

Research Topic	Priority
Social:	
1. Current users and their uses of the SBPA– landowners and others – sustainability of harvesting methods (follow up and complete existing PRA work)	High
2. SBPA landowners – current ‘vaka vanua’ and regularised use of land of other mataqali. Immediate and future subsistence and cash cropping needs.	High
Biological:	
3. Development/refinement of methodologies appropriate for biological monitoring of key species in SBPA. Identification of key species.	High
4. Status and ecology of invasive species to identify threats, risks and impacts, and feasibility of control. Highest priority – invasive flora; rats, mongoose, feral cats, toads, Tilapia	High
5. Further botanical survey to clarify status of current IUCN threat-listed flora and Fiji list of threatened/endangered species; and locate populations of Critically Endangered species such as <i>Acropyle sahniana</i> and <i>Schefflera euthytricha</i>	Medium
6. Mammal survey – both alien (see 4 above) and native, especially microchiropteran bats.	Medium (except invasives = High)
7. Fish – further and more intensive inventory work, especially in streams unaffected by Tilapia and toads.	Medium
8. Status of critically endangered globally threatened species, i.e. <i>Acropyle sahniana</i> , red-throated lorikeet and long-legged Warbler; and, nationally ‘at risk’ species i.e. Peregrine falcon.	Medium
9. Further Inventory and baseline surveys for native reptiles and amphibians	Medium
10. Further Inventory and baseline surveys for all invertebrates, terrestrial and aquatic	Low
11. Status and extent of Cloud Forest within the SBPA	Low
12. Definition and subsequent identification of ecologically sensitive sites in the context of the SBPA	Medium

Table 9: SBPA – Summary of Actions

<p>Key to Headings: Priority = 1-3, with 1 as highest priority Capability: Current staff's ability to undertake the task (1 – can do it now; 2 – could do with assistance; 3 – should be done by an expert). Responsibility: Agency tasked with assisting staff or undertaking the work (NT – NTF; SBPA SC – SBPA Technical Advisory Committee; DoF – Forests Dept.; TA – Technical Assistance; FM – Fiji Museum) Workplan Category = category as used in preparing Annual Work Plans (see Attachment 3)</p>				
	Priority	Staff Capability	Responsibility	Work Plan Category
National Policy				
Advocate for a national policy for Fiji's Protected Area system including 'National Parks' and designate SBPA as such once the legislation is enacted.	2	2	NT; SBPA SC	
Administration				
Boundary demarcation and awareness raising with local communities	3	2	DoF	
Establish the approval procedure for the Management Plan in respect of the TLTB lease	1	2	SBPA SC	
Co-management Framework				
Formalise the co-management framework by clarifying its objectives, determining its scope, agreeing roles and responsibilities; and establishing its method of operation.	1	3	TA	
Refer Table for individual actions pending formal strategy/plan above	2	1/2		
SBPA Trust Fund	1	3	CI; SBPA SC	
Registration of the Community Conservation & Development Trust under the Charitable Trust Act which will detail the procedures for the implementation of the CCDT.	1	2	SBPA SC	
Document all current users and uses within the PA (partly undertaken in PRA consultation but needs completing for 'adjacent' landowners and communities.	2	1		
Through widespread consultation define customary rights and agree on sustainable and conservation-mandated limits	2	1		
Draw up a register of non-landowning groups with perceived customary or traditional rights within SBPA	2	2	FM	
A protocol be agreed for entry into the PA (prevention of accidental introduction of invasive weeds; fire management; litter, camp organisation etc.)	2	2	SBPA SC	

Part **Five**

References

- ATHERTON, J., OLSON, D., FARLEY L. and I. QAUQAU. 2005. Fiji watersheds at risk: watershed assessment for healthy reefs and fisheries. Wildlife Conservation Society, Suva, Fiji.
- AUSTRALIAN INTERNATIONAL DEVELOPMENT ASSISTANCE BUREAU (AIDAB). 1978. Augmentation of Suva Regional Water Supply, Fiji. AIDAB, Canberra, Australia.
- BERRY, M.J., & W.J. HOWARD. 1973a. Fiji Forest Inventory. Volume 1. The Environment and Forest Types. Land Resource Study No. 12, Land Resource Division, Surbiton, Surrey, England.
- BERRY, M.J., & W.J. HOWARD. 1973b. Fiji Forest Inventory. Volume 2. Catchment Groups of Viti Levu and Kadavu. Land Resource Study No. 12, Land Resource Division, Surbiton, Surrey, England.
- DEPARTMENT OF FORESTS. 2005. Sovi Basin Protected Area Forest Inventory Report. Forests Department, Ministry of Fisheries and Forests, Suva.
- MASIBALAVU, V. T. & DUTSON, G. 2006. Important Bird Areas in Fiji. Conserving Fiji's Natural Heritage, Suva, Birdlife International.
- Birdlife International. GoF 1993. The National Environment Strategy: Fiji. IUCN - Environment Unit, Ministry of Housing and Urban Development, Suva.
- GUTTERIDGE HASKINS & DAVEY. 1999. Water Supply & Sewerage Master Plan for Suva (Project TA-FIJ-3055). Asian Development Bank and Government of Fiji. Gutteridge Haskins & Davey Pty Ltd., Suva.
- HIRST, J.A. 1965. Geology of East and North East Viti Levu. Geological Survey of Fiji. Government Press, Suva.
- HOLYOAK, D. 1979. Notes on the birds of Viti Levu and Taveuni, Fiji. *Emu* 79:7-18
- IUCN 2006. IUCN Red List of Threatened Species. Available at <www.iucnredlist.org> . Accessed on 19 January 2007.
- JOHNSON, P., VOS, J. & H. WADE. 2004. Pacific Regional Energy Assessment 2004: an assessment of the key energy issues, barriers to the development of renewable energy to mitigate climate change, and capacity development needs to removing the barriers: Fiji National Report. SPREP, Apia, Samoa.
- KOROVULAVULA, I. 2006. Sovi- Household Socioeconomic survey and Community Participatory Approach Assessment Report. Institute of Applied Sciences, University of the South Pacific, Suva, Fiji.
- LEES, A., WEAVER, S., BELLINGHAM, M., & DAVIS, A. 1989. A Representative National Parks and Reserves System for Fiji's Tropical Forests. Draft prepared for the Fiji Native Land Trust Board, Ministry of Forests, Ministry of Tourism and NTF for Fiji. Maruia Society Policy Reports ser. No. 9. 110 pp. 4 appendices, 5 maps.
- MCLENNAN MAGASANIK ASSOCIATES & AUSTRALIAN DEVELOPMENT ASSISTANCE BUREAU (AIDAB). 1984. Vunidawa Integrated Regional Development Scheme. 5 vols. AIDAB, Canberra, Australia.
- MASIBALAVU, V. & G. DUTSON. 2006. Important Bird Areas in Fiji: Conserving Fiji's Natural Heritage. BirdLife International, Suva.
- MORRISON, C. (Ed.) 2006. Consolidated Biodiversity Report for the SOVI Basin Protected Area. Institute of Applied Sciences Environmental Report No: 182. Suva.

- MUELLER-DOMBOIS, D. & H. ELLENBERG. 1974. Aims and methods of vegetation ecology. John Wiley & Sons, Sydney, Australia.
- OLSON, D., FARLEY, L., PATRICK, A., & T TUI. 2005. Comments on Fiji's Draft Forest Policy Statement. Submitted by the Wildlife Conservation Society to Fiji Department of Forestry, Suva, Fiji.
- ROTH, J. & S.HOOPER. 1990. The Fiji Journals of Baron Anatole Von Hugel (1875-1877). Fiji Museum, Suva.
- SMITH, A. C. 1979. Flora Vitiensis Nova: a new flora of Fiji (spermatophytes only). Volume 1. Hawaii: National Tropical Botanical Garden.
- SMITH, A. C. 1981. Flora Vitiensis Nova: a new flora of Fiji (spermatophytes only). Volume 2. Hawaii: National Tropical Botanical Garden.
- SMITH, A. C. 1985. Flora Vitiensis Nova: a new flora of Fiji (spermatophytes only). Volume 3. Hawaii: National Tropical Botanical Garden.
- SMITH, A. C. 1988. Flora Vitiensis Nova: a new flora of Fiji (spermatophytes only). Volume 4. Hawaii: National Tropical Botanical Garden.
- SMITH, A. C. 1991. Flora Vitiensis Nova: a new flora of Fiji (spermatophytes only). Volume 5. Hawaii: National Tropical Botanical Garden.
- TUIWAWA, M. & C.MORRISON (Eds.) 2006. Third Baseline Flora and Fauna Survey and establishment of Long-term Monitoring Plots in the SBPA, Naitasiri, 20-31 March, 2006. . Institute of Applied Sciences Environmental Report No: 181. Suva
- TWYFORD, I.T. 1965. The Soil Resources of the Fiji Islands, Vol. I. Government. Printer. Suva, Fiji.
- WATLING, D. 2001. A guide to the Birds of Fiji and Western Polynesia, Suva, Environmental Consultants (Fiji) Ltd.

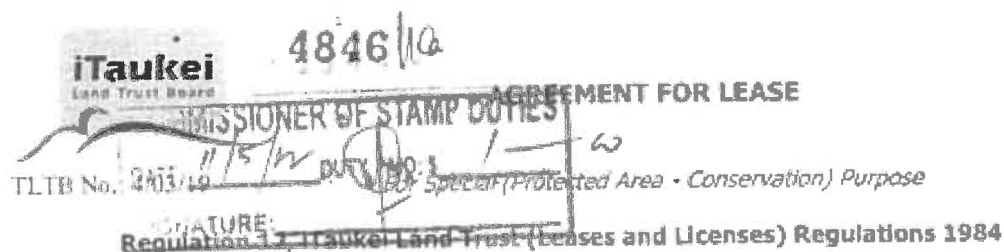
Part **Six**

Attachments

ATTACHMENT 1:

SBPA LEASE

This is a copy of part of the Lease document for SBPA.



THIS AGREEMENT is made BETWEEN THE ITAUKEI LAND TRUST BOARD of 431 Victoria Parade Suva (hereinafter called "the lessor" or "the iTaukei Land Trust Board") and the INTERNATIONAL TRUST OF FIJI having its registered office at 3 Ma'afu Street, Suva (hereinafter called "the lessee") of the other part WHEREBY -

A. The lessor agrees to grant and the lessee agrees to take a lease THE PROVISIONS OF WHICH SHALL BE AS FOLLOWS:

1. IN CONSIDERATION of the rent and covenants on the part of the lessee hereinafter reserved and contained (and in consideration of the sum of ~~\$500.00~~ (Amount in Words) paid by the lessee to the lessor on or before the execution hereof (the receipt whereof the lessor hereby acknowledges)) * the lessor hereby demises unto the lessee ALL THAT PIECE OR PARCEL OF LAND described as follows

Name of Land	Tikina	Province	Area
SOVI BASIN	Waidina & Nadaravakawalu	Naitasiri	16304.4166 ha (Subject to survey)

owned by the following land owning units.

LAND OWNING UNITS	NLC LOT No.	SHEET REFERENCE	AREA (HECTARE)	KORO
Mataqali Naitavuni	32	M/2,1,3/22,3;M/1,2,3/21,4	760.2529	Delailasakau(Naseuvou)
Yavusa Naitavuni	1	3/21,4	716.2899	Delailasakau(Naseuvou)
Mataqali Namatankavi	5	3/21,2,4	1040.0153	Delailasaku(Naseuvou)
Mataqali Nawaisomo	6	3/21,2,4	1218.0420	Delailasaku(Naseuvou)
Mataqali Walbasaga	79	3/22,1,3;3/21,2,4;3/16,4;3/17,3	9379.3842	Nadakuni
Mataqali Buluya	103	3/17,3;3/22,1,3/16,4	341.2218	Nalvucini (Naitavoli)
Yavusa Nanuku	5	3/22,2,4	95.8504	Nadakuni
Mataqali Buasauni	33	3/22,1,3	2191.0005	Nadakuni
Yavusa Nanuku	34	3/22,1,3	562.3596	Nadakuni
TOTAL			16304.4166	Subject to Survey

(hereinafter called the "landowning unit") be the area a little more or less and contained within the boundaries more particularly delineated and marked on the plan hereto annexed and edge YELLOW (hereinafter called "the land") EXCEPTING AND RESERVING all the matters contained in the First Schedule hereto TO HOLD the same unto the lessee from the First day of January, 2011 for the term of 99(Ninety nine) years

34 WITNESS whereof the lessor has caused its Common Seal to be hereunto affixed and the lessee has set his hand the day and year hereinbefore written.

Signed by the parties hereto this

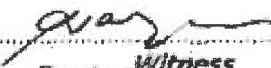
10th

day of

MAY, 2012

Signed on behalf of the Lessor

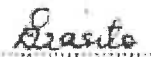

SAVENACA RALAGI
Manager Central Eastern
Central Eastern Region
ITAUKEI LAND TRUST BOARD
Designation


Witness
Paula Vadiga
Senior Estate Officer
Central Eastern Region
ITAUKEI LAND TRUST BOARD

The Common Seal of **NATIONAL TRUST OF FIJI**
having its registered office at 3 Ma'afu Street, SUVA
was affixed in the presence of the undersigned who
certify that they are the proper officers
authorised to attest the affixing of the said seal




Designation


Witness

ATTACHMENT 2:

CONSOLIDATED BIODIVERSITY REPORT FOR THE SOVI BASIN

This attachment includes all tables extracted from the Consolidated Biodiversity Report for Sovi Basin (2006)

Table 1. Combined Checklist of Bird Species Recorded in the Sovi Basin from 2003-2006.

LE = Local Endemic, E = Endemic to Fiji, N = Native, I = Introduced.

Scientific name	Common English Name	Status	IUCN Status
<i>Erythrura kleinschmidti</i>	Pink-billed Parrotfinch	LE (Viti Levu)	VU
<i>Prosopeia personata</i>	Masked Shining Parrot	LE (Viti Levu)	
<i>Ptilinopus luteovirens</i>	Golden Dove	LE (Viti Levu)	
<i>Accipiter rufitorques</i>	Fiji Goshawk	E	
<i>Artamus mentalis</i>	Fiji Woodswallow	E	
<i>Cettia ruficapilla</i>	Fiji Bush-warbler	E	
<i>Ducula latrans</i>	Barking Pigeon	E	
<i>Erythrura pealii</i>	Fiji Parrotfinch	E	
<i>Erythrura pealii</i>	Fiji Parrotfinch	E	
<i>Gymnomyza viridis</i>	Giant Forest Honeyeater	E	
<i>Mayrornis lessoni</i>	Slaty Monarch	E	
<i>Myzomela jugularis</i>	Orange-breasted Myzomela	E	
<i>Trichocichla rufa</i>	Long-legged warbler	E	EN
<i>Zosterops explorator</i>	Fiji White-eye	E	
<i>Anas superciliosa</i>	Pacific Black Duck	N	
<i>Aplonis tabuensis</i>	Polynesian Starling	N	
<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	N	
<i>Circus approximans</i>	Pacific Harrier	N	
<i>Clytorhynchus nigrogularis</i>	Black-faced Shrikebill	N	VU
<i>Clytorhynchus vitiensis</i>	Lesser Shrikebill	N	
<i>Collocalia spodiopygius</i>	White-rumped Swiftlet	N	
<i>Egretta scara</i>	Eastern Reef Heron	N	
<i>Foulehaio carunculata</i>	Wattled Honeyeater	N	
<i>Gallicolumba stairi</i>	Friendly Ground Dove	N	VU
<i>Lalage maculosa</i>	Polynesian Triller	N	
<i>Myiagra azureocapilla</i>	Blue-crested Broadbill	N	
<i>Myiagra vanikorensis</i>	Vanikoro Broadbill	N	
<i>Pachycephala pectoralis</i>	Golden Whistler	N	
<i>Petroica multicolor</i>	Scarlet Robin	N	
<i>Phigys solitarius</i>	Collared Lory	N	
<i>Rhipidura spilodera</i>	Streaked Fantail	N	
<i>Todiramphus chloris</i>	White-collared Kingfisher	N	
<i>Turdus poliocephalus</i>	Island Thrush	N	
<i>Zosterops lateralis</i>	Silvereye	N	
<i>Pycnonotus cafer</i>	Red-vented Bulbul	I	

Table 2. Freshwater fish species found in the Sovi Basin. E = Endemic, N = Native, I = Introduced

Species Name	Common Name	Status
<i>Anguilla marmorata</i>	Big mottled eel	N
<i>Gymnothorax polyuranodon</i>	Freshwater moray	N
<i>Awaous guamensis</i>	Goby	N
<i>Awaous ocellaris</i>	Goby	N
<i>Glossogobius sp.</i>	Goby	E
<i>Schismatogobius vitiensis</i>	Goby	E
<i>Sicyopterus lagocephalus</i>	Goby	N
<i>Sicyopus zosterophorum</i>	Goby	N
<i>Stiphodon rutilaureus</i>	Goby	N
<i>Belobranchius belobranchius</i>	Throat-spine gudgeon	N
<i>Giurus margaritacea</i>	Gudgeon	N
<i>Kuhlia marginata</i>	Spotted flag tail	N
<i>Kuhlia rupestris</i>	Jungle perch	N
<i>Oreochromis mossambicus</i>	Tilapia	I

Table 3. Checklist of aquatic invertebrates in the Sovi Basin. N = Native, I = Introduced.

Species Name	Status
<i>Caridina nudirostris</i>	N
<i>Macrobrachium aemulum</i>	N
<i>Macrobrachium caledonium</i>	N
<i>Macrobrachium lar</i>	N
<i>Macrobrachium latimanus</i>	N
<i>Macrobrachium lepidactyloides</i>	N
<i>Macrobrachium rosenbergii</i>	I

Table 4. Checklist of Herpetofauna found in the Sovi Basin. E = Endemic, N = Native, I = Introduced.

Species Name	Common Name	Status
<i>Platymantis vitiensis</i>	Fiji Tree Frog	E
<i>Emoia concolor</i>	Fiji Green Tree Skink	E
<i>E. parkeri</i>	Fiji Copper-headed Skink	E
<i>E. cyanura</i>	Brown-tailed Skink	N
<i>Nactus pelagicus</i>	Skink-toed Gecko	N
<i>Candoia bibroni</i>	Pacific Boa	N
<i>Bufo marinus</i>	Cane Toad	I

Table 5. Checklist of mammal species found in the Wabu Forest Reserve. N = Native, I = Introduced.

Scientific name	Common English Name	Status	IUCN Status
<i>Pteropus samoensis</i>	Samoan Fruit bat	N	VU
<i>Pteropus tonganus</i>	Tongan Fruit bat	N	LR
<i>Rattus rattus</i>	Ship Rat	I	
<i>Herpestes javanicus</i>	Small Indian Mongoose	I	
<i>Sus scrofa</i>	Feral Pig	I	
<i>Canis familiaris</i>	Feral Dogs	I	
<i>Felis catus</i>	Feral Cat	I	

Table 6. Checklist of insect families found in the Sovi Basin. %E = percent of group that is endemic to Fiji (note that these % are for Wabu and Sovi combined)

Order	Sub-order	Family	Common name
<i>Hymenoptera</i>	Apocrita	Formicidae (66% E)	ants
			wasps
<i>Lepidoptera</i>	Macrolepidoptera		butterflies
	Macrolepidoptera		moths
<i>Isoptera</i>		Termitidae	termites
<i>Tricoptera</i>			caddis fly
<i>Diptera</i>			flies
<i>Homoptera</i>		Cicadidae	cicada
<i>Hemiptera</i>			true bugs
<i>Coleoptera</i>			weevils
		Chrysomelidae (75% E)	Leaf beetles
		Tenebrionidae	Darkling beetles
		Carabidae	Ground beetles
		Elateridae	Click beetles
		Callirhipidae	
		Scolytidae	Bark beetles
		Eucnemidae	
		Cerambycidae (94% E)	Long horn
		Nitidulidae	Sap beetle
		Cucujidae	Cucujid beetle
		Lampyridae	Lightening bugs
		Scarabidae	Scarabs
Odonata	Zygoptera 1 genus E (Nesobasis)		damsel flies
	Anisoptera		dragonflies

Order	Sub-order	Family	Common name
Dermaptera			earwigs
Thysanura			silverfish
Orthoptera	Ensifera	Tettigoniidae	katydid
		Gryllaeiridae	cricket
Blattodea			cockroach

Table 7. Annotated checklist of plants observed in the Sovi Basin. Ind – Indigenous, End – Endemic, Adv – Adventitious, Nat – Naturalized, Inv – Invasive.

Family	Scientific Name	Distribution Status
Acacinaceae	<i>Citronella vitiensis</i> R. Howard	Ind
Acacinaceae	<i>Medusanthera vitiensis</i> Seem.	Ind
Acanthaceae	<i>Blechum pyramidatum</i> (Lam.) Urb.	Ind
Adiantaceae	<i>Adiantum diaphanum</i> Blume	Ind
Adiantaceae	<i>Adiantum diaphanum</i> Blume	Ind
Adiantaceae	<i>Adiantum hispidulum</i> Swartz	Ind
Adiantaceae	<i>Pteris tripartite</i> Swartz	Ind
Adiantaceae	<i>Stenochalena palustris</i> (Burm.) Bedd.	Ind
Adiantaceae	<i>Syngamma spathulata</i> (C. Christen.) Holtt	End
Agavaceae	<i>Taenitis pinnata</i> var. <i>polypodioides</i> (Baker) Holtt.	End
Alangiaceae	<i>Cordyline fruticosa</i> A.Chev.	Ind
Anacardiaceae	<i>Alangium vitiense</i> (A.Gray) baill. Ex Harms	End
Anacardiaceae	<i>Buchanania attenuata</i> A.C.Sm	End
Anacardiaceae	<i>Rhus simaroubifolia</i> A.Gray	Ind
Annonaceae	<i>Semecarpus vitiensis</i> (A.Gray) Engl.	Ind
Annonaceae	<i>Cyathocalyx insularis</i> A. C. Sm.	End
Annonaceae	<i>Cyathocalyx insularis</i> A.C.Sm	End
Annonaceae	<i>Polyalthia vitiensis</i> Seem	End
Annonaceae	<i>Richella monosperma</i> A. Gray	End
Annonaceae	<i>Xylopia pacifica</i> A. C. Sm.	End
Apocynaceae	<i>Xylopia vitiensis</i> A.C.Sm.	End
Apocynaceae	<i>Alstonia montana</i> Turrill	Ind
Apocynaceae	<i>Alstonia pacifica</i> (Seem.) A.C.Sm.	Ind
Apocynaceae	<i>Alstonia vitiensis</i> Seem.	End
Apocynaceae	<i>Alyxia bracteolosa</i> var. <i>bracteolosa</i> J. W. Parham	Ind
Apocynaceae	<i>Alyxia stellata</i> (Forst.) Roem. & Schult.	Ind
Apocynaceae	<i>Carruthersia macrantha</i> A.C.Sm.	Ind, rare
Apocynaceae	<i>Cerbera manghas</i> L.	Ind
Apocynaceae	<i>Ervatamia obtusiuscula</i> Markgraf	Ind

Family	Scientific Name	Distribution Status
Apocynaceae	<i>Pagiantha thurstonii</i> (Horne ex baker) A.C.Sm.	End
Aquifoliaceae	<i>Ilex vitiensis</i> A. Gray	Ind
Araliaceae	<i>Schefflera costata</i> A.C.Sm.	End, rare
Araliaceae	<i>Plerandra grayi</i> Seem.	End
Araliaceae	<i>Plerandra insolita</i> A.C.Sm.	End
Araliaceae	<i>Plerandra pickeringii</i> A.C.Sm	End
Araliaceae	<i>Plerandra vitiensis</i> (Seem.) Baill.	End
Araliaceae	<i>Polyscias joskei</i> Gibbs	End
Araliaceae	<i>Polyscias multijuga</i> (A.Gray) Harms	End
Araliaceae	<i>Schefflera euthytricha</i> A.C.Sm.	End, rare
Araliaceae	<i>Schefflera seemanniana</i> A.C.Sm.	End
Araliaceae	<i>Schefflera vitiensis</i> (A.Gray) Seem.	End
Araucariaceae	<i>Agathis macrophylla</i> (Lindley) Masters	Ind
Araceae	<i>Alocasia macrorrhiza</i> (L.) G. Don	Adv
Araceae	<i>Colocasia esculenta</i> (L.) Schott	Adv
Araceae	<i>Epipremnum pinnatum</i> (L.) Engl.	Ind
Arecaceae	<i>Balaka longirostris</i> Becc.	End
Arecaceae	<i>Clinostigma exorrhizum</i> (H.Wendel.) Becc.	End
Arecaceae	<i>Veitchia joannis</i> H.Wendel.	End
Arecaceae	<i>Veitchia vitiensis</i> (H.Wendel.) H.E.Moore	End
Aristolochiaceae	<i>Aristolochia vitiense</i> A.C.Sm.	End
Asclepiadaceae	<i>Hoya australis</i> R.Br	Ind
Asclepiadaceae	<i>Hoya diptera</i> Seem.	End
Asclepiadaceae	<i>Hoya vitiensis</i> Turrill	End
Aspidiaceae	<i>Arachinoides aristata</i> (Forst.) Tindale	Ind
Aspidiaceae	<i>Didymochlaena truncatula</i> (Sw.) J. Sm.	Ind
Aspidiaceae	<i>Pleocnemia cumingiana</i> Presl.	Ind
Aspidiaceae	<i>Pleocnemia irregularis</i> (Presl.) Holtt..	Ind
Aspidiaceae	<i>Tectaria crenata</i> Cavanilles	Ind
Aspidiaceae	<i>Tectaria decurrens</i> (Presl.) Copel.	Ind
Aspidiaceae	<i>Tectaria godeffroyi</i> (Luer.) Copel	End
Aspidiaceae	<i>Tectaria latifolia</i> (Forster) Copel.	Ind
Aspidiaceae	<i>Tectaria vitiensis</i> Brownlie	End
Aspleniaceae	<i>Asplenium amboinense</i> Willd.	Ind
Aspleniaceae	<i>Asplenium australasicum</i> Hook	Ind
Aspleniaceae	<i>Asplenium bipinnatifidum</i> Baker	Ind
Aspleniaceae	<i>Asplenium cuneatum</i> Lam.	Ind
Aspleniaceae	<i>Asplenium polydon</i> Forster	Ind
Asteraceae	<i>Acmella uliginosa</i> (Sw.) Cass.	Adv
Asteraceae	<i>Ageratum conyzoides</i> L.	Adv
Asteraceae	<i>Bidens pilosa</i> L.	Adv

Family	Scientific Name	Distribution Status
Asteraceae	<i>Conyza bonariense</i> (L.) Cronquist	Adv
Asteraceae	<i>Crassocephalum crepidioides</i> (Benth.) S. Moore	Adv
Asteraceae	<i>Elephantopus mollis</i> H. B. K.	Adv
Asteraceae	<i>Eleutheranthera ruderalis</i> (Sw.) Schultz-Bip	Ind
Asteraceae	<i>Emilia sonchifolia</i> (L.) DC.	Adv
Asteraceae	<i>Erechtites valerianifolia</i> (Wolf) DC.	Ind
Asteraceae	<i>Mikania micrantha</i> H. B. K.	Inv
Asteraceae	<i>Synedrella nodiflora</i> (L.) Gaertn.	Adv
Asteraceae	<i>Vernonia cinerea</i> (L.) Less.	Adv
Asteraceae	<i>Youngia japonica</i> (L.) DC.	Adv
Athyriaceae	<i>Diplaziopsis javanica</i> (Bl.) C.Christen.	Ind
Athyriaceae	<i>Diplazium dilatatum</i> Bl.	Ind
Athyriaceae	<i>Diplazium echinatum</i> C.Christen.	Ind
Athyriaceae	<i>Diplazium esculentum</i> (Ret.) Sw.	Ind
Athyriaceae	<i>Diplazium harpeodes</i> Moore	Ind
Athyriaceae	<i>Diplazium proliferum</i> (Lam) Thours	Ind
Barringtoniaceae	<i>Barringtonia seaturae</i> Guppy	End
Barringtoniaceae	<i>Barringtonia edulis</i> Seem.	End
Bignoniaceae	<i>Spathodea campanulata</i> Beauv.	Inv
Blechnaceae	<i>Blechnum milnei</i> (Carr.) C. Christen.	End
Blechnaceae	<i>Blechnum orientale</i> L.	Ind
Burseraceae	<i>Canarium harveyi</i> seem	Ind
Burseraceae	<i>Canarium harveyi</i> var. <i>harveyi</i> Leenh	End
Burseraceae	<i>Canarium vanikoroense</i> Leenh.	Ind
Burseraceae	<i>Canarium vitiense</i> A.Gray	Ind
Burseraceae	<i>Haplolobus floribundus</i> subsp. <i>salomonensis</i> (C.T.White) Leenh.	Ind
Caesalpiniaceae	<i>Cynometra insularis</i> A.C.Sm.	End
Caesalpiniaceae	<i>Maniltoa minor</i> A.C.Sm.	End
Caesalpiniaceae	<i>Storckiella vitiensis</i> Seem.	End
Caesalpiniaceae	<i>Kingiodendron platycarpum</i> B.L.Burt	End
Campanulaceae	<i>Lobelia zeylanica</i> L.	Adv
Casuarinaceae	<i>Gymnostoma vitiense</i> L.A.S. Johnson	End
Chrysobalanaceae	<i>Atuna racemosa</i> Raf.	Ind
Chrysobalanaceae	<i>Parinari insularum</i> A.Gray	Ind
Clusiaceae	<i>Calophyllum amblyphyllum</i> A.C.Sm	End
Clusiaceae	<i>Calophyllum leptocladum</i> A. C. Sm. & S. Darwin	End
Clusiaceae	<i>Calophyllum neo-ebudicum</i> Guillaumin	Ind
Clusiaceae	<i>Calophyllum vitiense</i> Turrill	End
Clusiaceae	<i>Calophyllum cerasiferum</i> Vesque	End
Clusiaceae	<i>Garcinia adinantha</i> A.C.Sm. & S.Darwin	End
Clusiaceae	<i>Garcinia myrtifolia</i> A.C.Sm.	Ind
Clusiaceae	<i>Garcinia pseudoguttifera</i> Seem.	Ind

Family	Scientific Name	Distribution Status
Clusiaceae	<i>Garcinia sessilis</i> (Forst f.) Seem.	Ind
Combrataceae	<i>Terminallia</i> sp.	Ind
Combretaceae	<i>Terminalia capitanea</i> A.C.Sm.	Ind
Combretaceae	<i>Terminalia crebrifolia</i> A.C.Sm.	End
Commelinaceae	<i>Commelina diffusa</i> Burm.	Ind
Connaraceae	<i>Connarus pickeringii</i> A.Gray	End
Connaraceae	<i>Rourea minor</i> (Gaertn.) Alston	Ind
Convolvulaceae	<i>Ipomoea indica</i> (Burm.) Merr.	Ind
Convolvulaceae	<i>Merremia peltata</i> (L.) Merr.	Ind/Inv
Cunoniaceae	<i>Geissois stipularis</i> A.C.Sm.	End
Cunoniaceae	<i>Geissois superba</i> Gillespie	End
Cunoniaceae	<i>Geissois ternate</i> A.Gray	End
Cunoniaceae	<i>Spiraeanthemum serratum</i> Gillespie	End
Cunoniaceae	<i>Spiraenanthemum graeffei</i> Seem.	Ind
Cunoniaceae	<i>Weinmannia affinis</i> A.Gray	End
Cunoniaceae	<i>Weinmannia richii</i> A.Gray	End
Cyatheaceae	<i>Culcita straminea</i> (Labill.) Maxon	Ind
Cyatheaceae	<i>Cyathea affinis</i> (Forst.) Sw.	End
Cyatheaceae	<i>Cyathea alata</i> Copel.	Ind
Cyatheaceae	<i>Cyathea decurrens</i> (Hook.) Copel.	Ind
Cyatheaceae	<i>Cyathea hornei</i> (Baker) Copel.	Ind
Cyatheaceae	<i>Cyathea lunalata</i> (Forst) Copel.	Ind
Cyatheaceae	<i>Cyathea propinqua</i> Mett.	End
Cyatheaceae	<i>Dicksonia brackenridgei</i> Mett.	Ind
Cyperaceae	<i>Carex graeffeana</i> Boeck.	Ind
Cyperaceae	<i>Cyperus haspan</i> L.	Ind
Cyperaceae	<i>Cyperus pilosus</i> Vahl	Adv
Cyperaceae	<i>Cyperus rotundus</i> L.	Adv
Cyperaceae	<i>Elaeocharis ochrostachys</i> Steudel	Ind
Cyperaceae	<i>Fimbristylis dichotoma</i> (L.) Vahl	Adv
Cyperaceae	<i>Gahnia vitiensis</i> Rendle	End
Cyperaceae	<i>Hypolytrum nemorum</i> subsp. <i>Vitiense</i> (C.B.Clarke) T.Koyama	Ind
Cyperaceae	<i>Kyllinga polyphylla</i> Willd. Ex Kunth	Adv
Cyperaceae	<i>Machaerina falcata</i> (Nees) T. Koyama	Ind
Cyperaceae	<i>Pycnus polystachyos</i> (Rottb.) Beauv.	Nat
Cyperaceae	<i>Rhynchospora corymbosa</i> (L.) Britton	Ind
Cyperaceae	<i>Schoenus achaetus</i> (T. Koyama) T. Koyama	Ind, rare
Cyperaceae	<i>Scleria polycarpa</i> Boeck.	Ind
Cyperaceae	<i>Scripodendron ghaeri</i> (Gaertn.) Merr.	Ind
Davalliaceae	<i>Arthropteris repens</i> (Brack.) C.Chr.	Ind
Davalliaceae	<i>Davallia fejeensis</i> Hook	End
Davalliaceae	<i>Davallia solida</i> (Forst. f.) Sw.	Ind

Family	Scientific Name	Distribution Status
Davalliaceae	<i>Humata polypodioides</i> Brack.	Ind
Davalliaceae	<i>Nephrolepis biserrata</i> (Sw.) Schott	Ind
Davalliaceae	<i>Nephrolepis saligna</i> Carr.	End
Davalliaceae	<i>Nephrolepis tuberosa</i> (Bory ex Willd.) Presl.	Ind
Davalliaceae	<i>Nephrolepis. hirsutula</i> (Forst.) Presl.	Ind
Davalliaceae	<i>Oleandra neriiformis</i> Cav.	Ind
Davalliaceae	<i>Oleandra sibbaldii</i> Grev.	Ind
Degeneriaceae	<i>Degeneria vitiensis</i> I. W. Bailey & A. C. S	End
Degeneriaceae	<i>Degeneria vitiensis</i> I.W. Bailey & A.C.Smith	End
Dennstaedtiaceae	<i>Orthiopteris ferulacea</i> (Moore) Copeland	End
Dichapetalaceae	<i>Dichapetalum vitiense</i> (Seem.) Engl.	Ind
Dilleniaceae	<i>Dillenia biflora</i> (A.Gray) Martelli ex Dur. & Jacks.	End
Dilleniaceae	<i>Hibbertia luccens</i> Brongn. & Gris ex Sebert & Pancher	Ind
Dioscoreaceae	<i>Dioscorea nummularia</i> Lam.	Ind
Dioscoreaceae	<i>Dioscorea bulbifera</i> L.	Ind
Ebenaceae	<i>Diospyros major</i> (Forst. f.) Bakh	Ind
Elaeocarpaceae	<i>Elaeocarpus chelonimorphus</i> Gillespie	End
Elaeocarpaceae	<i>Elaeocarpus milnei</i> Seem. (E)	End
Elaeocarpaceae	<i>Elaeocarpus storckii</i> Seem. (E)	End
Elaeocarpaceae	<i>Elaeocarpus subcapitatus</i> Gillespie	End
Epacridaceae	<i>Leucopogon septentrionalis</i> Schlechter	Ind
Ericaceae P	<i>Paphia vitiensis</i> Seem.	End
Euphorbiaceae	<i>Acalypha insulana</i> Muell.	Ind
Euphorbiaceae A	<i>Acalypha insulana</i> Muell. var. <i>insulana</i> A. C. Sm.	Ind
Euphorbiaceae	<i>Acalypha repanda</i> Muell. var. <i>denudata</i> (Muell. Arg.) A. C. Sm.	End
Euphorbiaceae	<i>Acalypha repanda</i> Muell. var. <i>repanda</i> A. C. Sm.	Ind
Euphorbiaceae	<i>Acalypha rivularis</i> Seem.	End
Euphorbiaceae	<i>Austrobuxus horneanus</i> (A. C. Sm.) Airy Shaw	End
Euphorbiaceae	<i>Baccaurea pulvinata</i> A. C. Sm	End
Euphorbiaceae	<i>Baccaurea seemannii</i> (Muell.) Muell.	Ind
Euphorbiaceae	<i>Baccaurea stylaris</i> Muell. Arg.	End
Euphorbiaceae	<i>Bischofia javanica</i> Bl.	Ind
Euphorbiaceae	<i>Claoxylon fallax</i> Muell. Arg.	Ind
Euphorbiaceae	<i>Codiaeum variegatum</i> L.	Ind
Euphorbiaceae	<i>Endospermum macrophylla</i> (Muell. Arg.) Pax & Hoffm.	End
Euphorbiaceae	<i>Glochidion anfractuosum</i> Gibbs	End
Euphorbiaceae	<i>Glochidion atalotrichum</i> A. C. Sm.	End
Euphorbiaceae	<i>Glochidion bracteatum</i> Gillespie	Ind
Euphorbiaceae	<i>Glochidion concolor</i> Muell. Arg.	Ind
Euphorbiaceae	<i>Glochidion cordatum</i> Seem.	End
Euphorbiaceae	<i>Glochidion ramiflorum</i> Forst.	Ind
Euphorbiaceae	<i>Glochidion seemannii</i> Muell.	End

Family	Scientific Name	Distribution Status
<i>Euphorbiaceae</i>	<i>Glochidion vitiense</i> (Muell.) Gillespie	End
<i>Euphorbiaceae</i>	<i>Macaranga graeffeana</i> Pax & Hoffm. var. <i>graeffiana</i> A. C. Sm.	End
<i>Euphorbiaceae</i>	<i>Macaranga harveyana</i> (Muell. Arg.) Muell. Arg.	Ind
<i>Euphorbiaceae</i>	<i>Macaranga magna</i> Turrill	End
<i>Euphorbiaceae</i>	<i>Macaranga vitiensis</i> Pax & Hoffm.	End
<i>Euphorbiaceae</i>	<i>Omalanthus nutans</i> (Forst. f.) Guillemin	Ind
<i>Euphorbiaceae</i>	<i>Phyllanthus amarus</i> Schumach. & Thonn.	Ind
<i>Euphorbiaceae</i>	<i>Phyllanthus debilis</i> Klein ex Willd	Ind
<i>Fabaceae</i>	<i>Derris elliptica</i> (Wall.) Benth.	Ind
<i>Fabaceae</i>	<i>Derris trifoliata</i> Lour.	Ind
<i>Fabaceae</i>	<i>Desmodium incanum</i> DC.	Ind
<i>Fabaceae</i>	<i>Desmodium triflorum</i> (L.) DC.	Nat
<i>Fabaceae</i>	<i>Entada phaseoloides</i> (L.) Merr.	Ind
<i>Fabaceae</i>	<i>Inocarpus fagifer</i> (Parkinson) Fosberg	Ind
<i>Fabaceae</i>	<i>Macuna platyphylla</i> A. Gray	Ind
<i>Fabaceae</i>	<i>Pueraria lobata</i> (Willd.) Ohwi	Ind
<i>Flacourtiaceae</i>	<i>Caesaria richii</i> A. Gray	End
<i>Flacourtiaceae</i>	<i>Erythrospermum acuminatissimum</i> (A. Gray) A.C. Sm.	End
<i>Flacourtiaceae</i>	<i>Homalium nitens</i> Turrill	End
<i>Flacourtiaceae</i>	<i>Homalium vitiense</i> Benth	Ind
<i>Flagellariaceae</i>	<i>Flagellaria gigantea</i> Hook	Ind
<i>Flagellariaceae</i>	<i>Flagellaria indica</i> L	Ind
<i>Flagellariaceae</i>	<i>Flagellaria neo-caledonica</i> Schlechter	Ind
<i>Gesneriaceae</i>	<i>Cyrtandra coleoides</i> Seem.	End
<i>Gesneriaceae</i>	<i>Cyrtandra anthropophagorum</i> Seem.	End
<i>Gesneriaceae</i>	<i>Cyrtandra cephalophora</i> Gillespie	End
<i>Gesneriaceae</i>	<i>Cyrtandra jugalis</i> A. C. Sm.	End
<i>Gesneriaceae</i>	<i>Cyrtandra leucantha</i> A. C. Sm.	End
<i>Gesneriaceae</i>	<i>Cyrtandra milnei</i> Seem.	End
<i>Gesneriaceae</i>	<i>Cyrtandra occulta</i> A.C. Sm.	End
<i>Gesneriaceae</i>	<i>Cyrtandra trichophylla</i> A.C. Sm.	End
<i>Gesneriaceae</i>	<i>Cyrtandra victoriae</i> Gillespie	End
<i>Gesneriaceae</i>	<i>Cyrtandra vitiensis</i> Seem.	End

Family	Scientific Name	Distribution Status
Gleicheniaceae	<i>Dicranopteris caudata</i> (Copel.) St. John	End
Gleicheniaceae	<i>Dicranopteris linearis</i> (Burm.) Underwood	Ind
Gleicheniaceae	<i>Gleichenia longissima</i> Bl.	Ind
Gleicheniaceae	<i>Gleichenia oceanica</i> Kuhn	Ind
Gnetaceae	<i>Gnetum gnemon</i> L.	End
Gnetaceae	<i>Gnetum gnemon</i> L.	End
Gonystylaceae	<i>Gonystylus punctatus</i> A.C.Sm.	End
Goodeniaceae	<i>Scaevola floribunda</i> A.Gray	End
Grammitidaceae	<i>Ctenopteris contigua</i> (Forst.) Holtt	Ind
Grammitidaceae	<i>Ctenopteris seemannii</i> (J.Sm.) Copel.	Ind
Polypodiaceae	<i>Dipteris conjugata</i> Reinw.	Ind
Grammitidaceae	<i>Grammitis hookeri</i> (Brack.) Copel.	Ind
Heliconiaceae	<i>Heliconia paka</i> A.C. Sm.	Ind
Hernandiaceae	<i>Hernandia olivacea</i> Gillespie	End
Hymneophyllaceae	<i>Hymenophyllum samoense</i> Baker	Ind, rare
Hymneophyllaceae	<i>Hymenophyllum affine</i> Brack.	End
Hymneophyllaceae	<i>Hymenophyllum denticulatum</i> Sw.	Ind
Hymneophyllaceae	<i>Trichomanes aphlebioides</i> Christ.	Ind
Hymneophyllaceae	<i>Trichomanes apiifolium</i> Presl.	Ind
Hymneophyllaceae	<i>Trichomanes boryanum</i> Kunze	Ind
Hymneophyllaceae	<i>Trichomanes caudatum</i> Brack.	Ind
Hymneophyllaceae	<i>Trichomanes dentatum</i> v.d.B	Ind
Hymneophyllaceae	<i>Trichomanes endlicherianum</i> Presl.	Ind
Hymneophyllaceae	<i>Trichomanes humile</i> Forst.	Ind
Hymneophyllaceae	<i>Trichomanes intermedium</i> v. d. B.	Ind
Hymneophyllaceae	<i>Trichomanes tahitense</i> Nadeau	Ind
Icacinaceae	<i>Citronella vitiensis</i> H.Howard	End
Icacinaceae	<i>Medusanthera vitiensis</i> Seem	End
Joinvilleaceae	<i>Joinvillea plicata</i> (Hook) Newell & Stone	Ind
Lamiaceae	<i>Hyptis pectinata</i> (L.) Poit.	Ind
Lamiaceae	<i>Ocimum tenuiflorum</i> L.	Ind
Lauraceae	<i>Cryptocarya constricta</i> Allen	End
Lauraceae	<i>Cryptocarya fusca</i> Gillespie	End
Lauraceae	<i>Endiandra elaeocarpa</i> Gillespie	Ind
Lauraceae	<i>Endiandra gillespiei</i> A.C.Sm.	End
Lauraceae	<i>Endiandra reticulata</i> Gillespie	End
Lauraceae	<i>Litsea magnifolia</i> Gillespie	End
Lauraceae	<i>Litsea pickeringii</i> (A.Gray ex Seem.) Benth. & Hook. ex Drake	End
Lauraceae	<i>Litsea vitiana</i> (Meisn.) Benth & Hook f. ex Drake	End
Leeaceae	<i>Leea indica</i> (Burm f.) Merr.	Ind
Liliaceae	<i>Collospermum montanum</i> (Seem.) Skottsb.	End

Family	Scientific Name	Distribution Status
Liliaceae	<i>Rhuacophila javanica</i> Bl.	Ind
Lindsaeaceae	<i>Lindsaea harveyi</i> Carr. Ex Seem.	Ind
Lindsaeaceae	<i>Lindsaea pacifica</i> Kramer	Ind
Lindsaeaceae	<i>Lindsaea pulchra</i> (Brack.) Carr. ex Seem	Ind
Loganiaceae	<i>Fagraea berteriana</i> A.Gray ex Benth.	Ind
Loganiaceae	<i>Fagraea gracilipes</i> A.Gray	Ind
Loganiaceae	<i>Geniostoma macrophyllum</i> Gillespie	End
Loganiaceae	<i>Geniostoma rupestre</i> J.R. & G.Forst.	Ind
Loganiaceae	<i>Neuburgia alata</i> (A.C.Sm.) A.C.Sm.	End
Loganiaceae	<i>Neuburgia corynocarpa</i> (A.Gray) Leenh.	Ind
Loganiaceae	<i>Neuburgia macrocrpa</i> (A.C.Sm.) A.C.Sm.	End
Lomariopsidaceae	<i>Bolbitis rivularis</i> (Brack.)Ching	End
Lomariopsidaceae	<i>Lomagramma cordipinna</i> Holtt.	Ind
Lomariopsidaceae	<i>Lomagramma polyphylla</i> Brack	Ind
Loranthaceae	<i>Decaisnina forsteriana</i> (J. A. & J. H. Schult.) Barlow	Ind
Lycopodiaceae	<i>Lycopodium carinatum</i> Desvaux	Ind
Lycopodiaceae	<i>Lycopodium cernuum</i> L.	Ind
Lycopodiaceae	<i>Lycopodium foliosum</i> Copel.	End
Lycopodiaceae	<i>Lycopodium magnificum</i> Brownlie	End
Lycopodiaceae	<i>Lycopodium parksii</i> Copel.	End
Lycopodiaceae	<i>Lycopodium serratum</i> Thunb.	Ind, rare
Lycopodiaceae	<i>Lycopodium squarrosus</i> Forst.	Ind
Lycopodiaceae	<i>Lycopodium subtrifoliatum</i> Brownlie	Ind
Lycopodiaceae	<i>Lycopodium trifoliatum</i> Copel.	End
Lythraceae	<i>Cuphea carthagenensis</i> (Jacq.) Macbr.	Ind
Malvaceae	<i>Hibiscus tiliaceus</i> L.	End
Malvaceae	<i>Sida rhombifolia</i> L.	Adv
Malvaceae	<i>Urena lobata</i> L.	Adv
Marratiaceae	<i>Angiopteris opaca</i> Copel.	End, rare
Marattiaceae	<i>Angiopteris evecta</i> (Forst.) Hoffm.	Ind
Marattiaceae	<i>Marattia smithii</i> Mett.	End
Melastomataceae	<i>Astronidium</i> sp.	
Melastomataceae	<i>Astronidium confertiflorum</i> (A. Gray) Markgr.	End
Melastomataceae	<i>Astronidium macranthum</i> (A.C.Sm.) A.C.Sm.	End
Melastomataceae	<i>Astronidium parviflorum</i> A. Gray	End
Melastomataceae	<i>Astronidium robustum</i> (Seem.) A.C.Sm.	End
Melastomataceae	<i>Astronidium storckii</i> Seem.	End
Melastomataceae	<i>Clidemia hirta</i> (L.) D. Don	Nat
Melastomataceae	<i>Medinilla archboldiana</i> A.C.Sm.	End
Melastomataceae	<i>Medinilla heterophylla</i> A.Gray	End
Melastomataceae	<i>Medinilla longicymosa</i> Gibbs	End

Family	Scientific Name	Distribution Status
Melastomataceae	<i>Medinilla rhodochlaena</i> A. Gray	End
Melastomataceae	<i>Medinilla subviridis</i> A.C.Sm	End
Melastomataceae	<i>Melastoma denticulatum</i> Labill.	Ind
Meliaceae	<i>Aglaia archboldiana</i> A.C.Sm.	End
Meliaceae	<i>Aglaia axillaries</i> A.C.Sm.	End
Meliaceae	<i>Aglaia elegans</i> Gillespie	End
Meliaceae	<i>Aglaia vitiensis</i> A.C.Sm.	End
Meliaceae	<i>Aglaia vitiensis</i> var. <i>minor</i> A. C. Sm.	End
Meliaceae	<i>Dysoxylum hornei</i> Gillespie	End
Meliaceae	<i>Dysoxylum lenticellare</i> Gillespie	End
Meliaceae	<i>Dysoxylum quercifolium</i> (Seem.) A.C.Sm.	End
Meliaceae	<i>Dysoxylum richii</i> (A.Gray) C.DC.	End
Meliaceae	<i>Dysoxylum seemannii</i> Gillespie	End
Meliaceae	<i>Vavaea amicornum</i> Benth.	Ind
Meliaceae	<i>Vavaea degeneri</i> A. C. Sm.	End
Meliaceae	<i>Vavaea harveyi</i> Seem.	End
Mimosaceae	<i>Entada phaseoloides</i> (L.) Merr.	End
Mimosaceae	<i>Mimosa pudica</i> L. var. <i>unijuga</i> (Duchass. & Walp.) Griseb.	Adv
Mimosaceae	<i>Serianthes melanesica</i> Fosberg	End
Monimiaceae	<i>Hedycarya dorstenioides</i> A.Gray	Ind
Moraceae	<i>Artocarpus altilis</i> (Parkinson) Forsberg	Adv
Moraceae	<i>Ficus bambusifolia</i> Seem.	End
Moraceae	<i>Ficus barclayana</i> (Miq.) Summerh	End
Moraceae	<i>Ficus fulvo-pilosa</i> Summerh.	End
Moraceae	<i>Ficus obliqua</i> Forst.	Ind
Moraceae	<i>Ficus pritchardii</i> Seem.	End
Moraceae	<i>Ficus smithii</i> Horne var. <i>robusta</i> Corner	Ind
Moraceae	<i>Ficus theophrastoides</i> Seem.	Ind
Moraceae	<i>Ficus vitiensis</i> Seem.	End
Musaceae	<i>Musa paradisiaca</i> subsp. <i>sapientum</i> (L.) K. Schum.	Adv
Myristicaceae	<i>Myristica castaneifolia</i> A.Gray	End
Myristicaceae	<i>Myristica chartacea</i> Gillespie	End
Myristicaceae	<i>Myristica gillespieana</i> A.C.Sm	End
Myristicaceae	<i>Myristica grandifolia</i> A. DC	End
Myristicaceae	<i>Myristica macrantha</i> A.C.Sm	End
Myrsinaceae	<i>Discocalyx fusca</i> Gibbs	Ind
Myrsinaceae	<i>Maesa insularis</i> Gillespie	End
Myrsinaceae	<i>Maesa tabacifolia</i> Mez.	Ind
Myrsinaceae	<i>Tapeinosperma ampliflorum</i> A.C.Sm.	End
Myrsinaceae	<i>Tapeinosperma capitatum</i> (A.Gray) Mez	End
Myrsinaceae	<i>Tapeinosperma hornei</i> Mez	Ind
Myrsinaceae	<i>Tapeinosperma megaphyllum</i> (Hemsl.) Mez	End

Family	Scientific Name	Distribution Status
Myrsinaceae	<i>Tapeinosperma multiflorum</i> Gillespie) A.C.Sm	End
Myrtaceae	<i>Cleistocalyx decussatus</i> A.C.Sm.	End
Myrtaceae	<i>Cleistocalyx eugenioides</i> Merr. & Perry	End
Myrtaceae	<i>Cleistocalyx</i> sp	Ind
Myrtaceae	<i>Decaspermum vitiense</i> (A.Gray) Niedenzu	End
Myrtaceae	<i>Metrosideros collina</i> (J.R. &G.Forst) A.Gray	Ind
Myrtaceae	<i>Psidium guajava</i> L.	Adv
Myrtaceae	<i>Syzygium amicum</i> (A.Gray) C.Muell.	End
Myrtaceae	<i>Syzygium amplifolium</i> Perry	End
Myrtaceae	<i>Syzygium brackenridgei</i> (A. Gray) C. Muell.	Ind
Myrtaceae	<i>Syzygium corynocarpum</i> (A. Gray) C. Muell.,	Ind
Myrtaceae	<i>Syzygium curvistylum</i> (Gillespie) Merr. & Perry	Ind
Myrtaceae	<i>Syzygium diffusum</i> (Turrill) Merr. & Perry	End
Myrtaceae	<i>Syzygium effusum</i> (A.Gray) C. Muell.	Ind
Myrtaceae	<i>Syzygium fijiense</i> Perry	End
Myrtaceae	<i>Syzygium gracilipes</i> (A.Gray) Merr. & Perry	End
Myrtaceae	<i>Syzygium grayi</i> (Seem.) Merr. & Perry	End
Myrtaceae	<i>Syzygium leucanthum</i> Perry	End
Myrtaceae	<i>Syzygium neurocalyx</i> (A.Gray) Christophersen	Ind
Myrtaceae	<i>Syzygium purpureum</i> (Perry) A. C. Sm.	End
Myrtaceae	<i>Syzygium quadrangulatum</i> (A. Gray) Merr. & Perry	Ind
Myrtaceae	<i>Syzygium rubescens</i> (A.Gray) C.Muell.	End
Myrtaceae	<i>Syzygium seemannianum</i> Merr & Perry	End
Nyctaginaceae	<i>Pisonia umbellifera</i> (J.R. & G.Forst) Seem.	Ind
Oleaceae	<i>Jasminum simplicifolium</i> Forst. F. Fl.	Ind
Onagraceae	<i>Ludwigia hyssopifolia</i> (G. Don) Exell	Adv
Onagraceae	<i>Ludwigia octovalis</i> subsp. <i>sessiliflora</i> (M. Micheli) Raven	Adv
Onagraceae	<i>Ludwigia octovalis</i> (Jacq.) Raven subsp. <i>octovalis</i> Raven	Adv
Ophioglossaceae	<i>Ophioglossum pendulum</i> L.	Ind
Orchidaceae	<i>Acanthephippium papuanum</i> Schlechter	Ind
Orchidaceae	<i>Agrostophyllum aristatum</i> Kores	End
Orchidaceae	<i>Appendicula bracteosa</i> Reichenb.	Ind, rare
Orchidaceae	<i>Appendicula pendula</i> Bl.	Ind
Orchidaceae	<i>Appendicula reflexa</i> Bl.	Ind
Orchidaceae	<i>Arundina bambusifolia</i> Roxb. Ex Lindl.	Adv
Orchidaceae	<i>Bulbophyllum samoanum</i> Schlechter	Ind, rare
Orchidaceae	<i>Bulbophyllum sessile</i> (Koen.) J. J. Sm.	Ind, rare
Orchidaceae	<i>Bulbophyllum longiscapum</i> Rolf.	Ind
Orchidaceae	<i>Calanthe hololeuca</i> Reichenb.	Ind
Orchidaceae	<i>Calanthe triplicata</i> (Willemet) Ames	Ind
Orchidaceae	<i>Calanthe ventilabrum</i> Reichenb.	Ind
Orchidaceae	<i>Coelogyne lycastoides</i> F. v. Muell. & Kraenzl.	Ind

Family	Scientific Name	Distribution Status
Orchidaceae	<i>Coelogyne macdonaldii</i> F. v. Muell. & Kraenzl.	Ind
Orchidaceae	<i>Cryptostylis arachnites</i> (Bl.) Hassk.	Ind
Orchidaceae	<i>Cynorkis fastigiata</i> Thou.	Ind
Orchidaceae	<i>Dendrobium biflorum</i> (Forst. f.) Sw.	Ind
Orchidaceae	<i>Dendrobium macrophyllum</i> A. Rich.	Ind
Orchidaceae	<i>Dendrobium masarangense</i> Schlechter	Ind
Orchidaceae	<i>Dendrobium mohlianum</i> Reichenb.	Ind
Orchidaceae	<i>Dendrobium platygastrium</i> Reichenb.	Ind
Orchidaceae	<i>Dendrobium purpureum</i> Roxb.	Ind
Orchidaceae	<i>Dendrobium tokai</i> Reichenb. f. ex Seem.	Ind
Orchidaceae	<i>Dendrobium trilobulatum</i> Kores	End
Orchidaceae	<i>Dendrobium vitiense</i> Rolfe	End
Orchidaceae	<i>Diplocaulobium tipuliferum</i> (Reichenb. F.) Kraenzl.	End
Orchidaceae	<i>Earina valida</i> Reichenb.	Ind
Orchidaceae	<i>Eria bulbophylloides</i> C. Schweinf.	End
Orchidaceae	<i>Eria rostriflora</i> Reichenb.	Ind
Orchidaceae	<i>Flickingeria comata</i> (Bl.) A. Hawkes	Ind, rare
Orchidaceae	<i>Glomera emarginata</i> Kores	End, rare
Orchidaceae	<i>Glossorhyncha macdonaldii</i> Schlechter	Ind
Orchidaceae	<i>Habenaria superflua</i> Reichenb.	End
Orchidaceae	<i>Liparis elegans</i> Lindl.	Ind
Orchidaceae	<i>Liparis elliptica</i> Wight	Ind
Orchidaceae	<i>Liparis gibbosa</i> Finet	Ind
Orchidaceae	<i>Malaxis platychila</i> (Reichenb. f.) Kuntze	End, rare
Orchidaceae	<i>Malaxis radiculicola</i> (Rolfe) L.O. Williams	End
Orchidaceae	<i>Malaxis lunata</i> (Schlechter) Ames	Ind, rare
Orchidaceae	<i>Mediocalcar paradoxum</i> (Kraenzl.) Schlechter	Ind
Orchidaceae	<i>Oberonia equitans</i> (Forst. f.) Mutel	Ind
Orchidaceae	<i>Oberonia heliophila</i> Reichenb.	Ind
Orchidaceae	<i>Peristylus maculifer</i> (C. Schweinf.) Renz & Vodonai	Ind
Orchidaceae	<i>Phaius graeffei</i> Reichenb.	Ind
Orchidaceae	<i>Phaius tankervilleae</i> (Banks ex L'Her.) Bl.	Ind
Orchidaceae	<i>Phreatia micrantha</i> (A. Rich.) Schlechter	End
Orchidaceae	<i>Phreatia pachyphylla</i> Schlechter	Ind, rare
Orchidaceae	<i>Phreatia pentagona</i> Kores	Ind
Orchidaceae	<i>Pseuderia platyphylla</i> L. O. Williams	Ind
Orchidaceae	<i>Robiquetia bertholdii</i> (Reichenb. f.) Schlechter	Ind
Orchidaceae	<i>Sarcanthopsis nagarensis</i> (Reichenb. f.) Garay	Ind
Orchidaceae	<i>Schoenorchis micrantha</i> Reinw. ex Bl.	Ind
Orchidaceae	<i>Spathoglottis pacifica</i> Reichenb.	Ind
Orchidaceae	<i>Spathoglottis plicata</i> Bl.	Ind

Family	Scientific Name	Distribution Status
Orchidaceae	<i>Taeniophyllum gracile</i> (Rolfe) Garay	Ind
Orchidaceae	<i>Thrixspermum</i> sp.	Ind
Orchidaceae	<i>Tropidia effusa</i> Reichenb.	Ind
Osmundaceae	<i>Leptopteris wilkesiana</i> (Brack.) Christ	Ind
Oxalidaceae	<i>Oxalis corniculata</i> L.	Ind
Pandanaceae	<i>Fretcinetia urvilleana</i> Hombron & jacquinot	Ind
Pandanaceae	<i>Freycinetia caudata</i> Hemsl.	End
Pandanaceae	<i>Freycinetia hombronii</i> Martelli	Ind
Pandanaceae	<i>Freycinetia impavida</i> (Hombron & Jacquinot) Stone	Ind
Pandanaceae	<i>Freycinetia pritchardii</i> Seem.	Ind
Pandanaceae	<i>Freycinetia vitiensis</i> Seem.	End, rare
Pandanaceae	<i>Pandanus vitiensis</i> Martelli	End
Peperomiaceae	<i>Peperomia lasiostigma</i> C. DC. var. <i>lasiostigma</i> J. W. Parham	End
Peperomiaceae	<i>Peperomia purpurinodis</i> J. W. Parham	End
Peperomiaceae	<i>Peperomia subroseispica</i> C. DC	End
Philesiaceae	<i>Geitonoplesium cymosum</i> (R.Br.) A. Cunn.	Ind
Pharmacies	<i>Rhuacophola javanica</i> Bl.	Ind
Piperaceae	<i>Macropiper puberulum</i> Benth. var. <i>glabrum</i> (C. DC.) A. C. Sm.	Ind
Piperaceae	<i>Macropiper timothianum</i> (A.C.Sm) A.C.Sm	End
Piperaceae	<i>Macropiper vitiense</i> (A.C.Sm.) A.C.Sm.	End
Piperaceae	<i>Piper aduncum</i> L.	Inv
Piperaceae	<i>Piper betle</i> L.	Ind
Piperaceae	<i>Piper degeneri</i> A.C.Sm.	End
Piperaceae	<i>Piper insectifugum</i> C. DC	End
Piperaceae	<i>Piper stipulare</i> A. C. Sm. & J. W. Parham	End
Pittosporaceae	<i>Pittosporum arborescens</i> Rich ex A.Gray	Ind
Pittosporaceae	<i>Pittosporum rhytidocarpum</i> A.Gray	End
Poaceae	<i>Arundo donax</i> L.	Ind
Poaceae	<i>Axonopus compressus</i> (Sw.) Beauv.	Ind
Poaceae	<i>Bambusa vulgaris</i> Schrader ex Wendel.	Ind
Poaceae	<i>Brachiaria mutica</i> (Forssk) Stapf	Ind
Poaceae	<i>Centosteca lappacea</i> (L.) Desv.	Ind
Poaceae	<i>Chrysopogon aciculatus</i> (Retz.) Trin.	Ind
Poaceae	<i>Coix lacryma-jobi</i> L.	Ind
Poaceae	<i>Digitaria setigera</i> Roth ex Roem. & Schult.	Ind
Poaceae	<i>Echinochloa colona</i> (L.) Link	Ind
Poaceae	<i>Eleusine indica</i> (L.) Gaertn.	Ind
Poaceae	<i>Eragrostis tenella</i> (L.) Beauv. Ex Roemer & Schultes	Ind
Poaceae	<i>Eragrostis unioides</i> (Retz.) Nees ex Steudel	Ind
Poaceae	<i>Imperata conferta</i> (Presl.) Ohwi	Ind
Poaceae	<i>Ischaemum indicum</i> (Houtt.) Merr.	Ind
Poaceae	<i>Miscanthus floridulus</i> (Labill.) Warb. ex K. Schum. & Lauterb.	Ind

Family	Scientific Name	Distribution Status
Poaceae	<i>Oplismenus hirtellus</i> (L.) Beauv.	Ind
Poaceae	<i>Panicum maximum</i> Jacq.	Adv
Poaceae	<i>Paspalum conjugatum</i> Bergius	Adv
Poaceae	<i>Paspalum orbiculare</i> Forst.	Ind
Poaceae	<i>Pennisetum polystachyon</i> (L.) J.A. & J.H. Schultes	Adv
Poaceae	<i>Saccharum edule</i> Hassk.	Adv
Poaceae	<i>Sacciolepis indica</i> (L.) Chase	Ind
Poaceae	<i>Schizostachyum glaucifolium</i> (Rupr.) Munro	Ind
Poaceae	<i>Setaria glauca</i> (L.) Beauv.	Ind
Podocarpaceae	<i>Acropyle sahniana</i> Buchh. & N.E. Gray	End, rare
Podocarpaceae	<i>Dacrycarpus imbricatus</i> de Laubenfels	Ind
Podocarpaceae	<i>Dacrydium nidulum</i> de Laubenfels	Ind
Podocarpaceae	<i>Decussocarpus vitiensis</i> (Seem.) de Laubenfels	Ind
Podocarpaceae	<i>Podocarpus affinis</i> Seem.	End, rare
Podocarpaceae	<i>Podocarpus nerifolius</i> D. Don	Ind
Podocarpaceae	<i>Retrophyllum vitiense</i> (Seem.) C. N. Page	Ind
Polygalaceae	<i>Polygala paniculata</i> L.	Adv
Polypodiaceae	<i>Belvisia mucronata</i> (Fee) Copel.	Ind
Polypodiaceae	<i>Dictymia mckeei</i> Tindale	Ind
Polypodiaceae	<i>Dipteris conjugata</i> Reinw	Ind
Polypodiaceae	<i>Drynaria rigidula</i> (Sw.) Bedd.	Ind
Polypodiaceae	<i>Goniophlebium subauriculatum</i> (Bl.) Pr	Ind
Polypodiaceae	<i>Lemmaphyllum accedens</i> (Bl.) Donk.	Ind
Polypodiaceae	<i>Loxogramme parksii</i> Copel.	Ind
Polypodiaceae	<i>Microsorium alatum</i> (Brack.) Copel.	End
Polypodiaceae	<i>Selliguea feeoides</i> Copel.	Ind
Pontederiaceae	<i>Monochoria vaginalis</i> (Burm. f.) Presl	Ind
Proteaceae	<i>Turrillia ferruginea</i> (A.C.Sm.) A.C.Sm.	End
Proteaceae	<i>Turrillia vitiensis</i> (Turrill) A.C.Sm.	End
Psilotaceae	<i>Psilotum complanatum</i> Sw.	Ind, rare
Psilotaceae	<i>Psilotum nudum</i> (L.) Palisot de Beauvois	Ind
Rhamnaceae	<i>Alphitonia franguloides</i> A.Gray	End
Rhamnaceae	<i>Alphitonia zizyphoides</i> (Spreng) A.Gray	Ind
Rhamnaceae	<i>Emmenosperma micropetalum</i> (A.C.Sm.) M.Johnston	End
Rhamnaceae	<i>Ventilago vitiensis</i> A.Gray	Ind
Rhizophoraceae	<i>Crossostylis harveyi</i> Benth.	End
Rhizophoraceae	<i>Crossostylis parksii</i> (Gillespie) A.C.Sm	End
Rhizophoraceae	<i>Crossostylis richii</i> (A. Gray) A. C. Sm.	End
Rhizophoraceae	<i>Crossostylis seemannii</i> (A.Gray) Schimper	End
Rosaceae	<i>Rubus moluccanus</i> L. var. <i>austropacificus</i> van Royen	Ind
Rubiaceae	<i>Airosperma trichotomum</i> (Gillespie) A.C.Sm.	End

Family	Scientific Name	Distribution Status
Rubiaceae	<i>Antirhea smithii</i> (Fosberg) Merr & Perry	End
Rubiaceae	<i>Calycosia callithrix</i> A.C.Sm.	End
Rubiaceae	<i>Calycosia petiolata</i> A.Gray	End
Rubiaceae	<i>Dolicholobium Macgregorii</i> Horne ex Baker	End
Rubiaceae	<i>Dolicholobium oblongifolium</i> A.Gray	End
Rubiaceae	<i>Dolicholobium latifolium</i> A.Gray	End
Rubiaceae	<i>Gardenia hutchinsoniana</i> Turrill	End
Rubiaceae	<i>Gardenia storckii</i> Oliver	End
Rubiaceae	<i>Geophila repens</i> (L.) I. M. Johnston	Ind
Rubiaceae	<i>Gynochtodes epiphytica</i> (Reichinger) A. C. Sm. & S. Darwin	Ind
Rubiaceae	<i>Hydnophytum</i> spp.	
Rubiaceae	<i>Hynophytum longiflorum</i> A.Gray	End
Rubiaceae	<i>Ixora arestantha</i> A.C.Sm.	End
Rubiaceae	<i>Ixora carewii</i> Horne ex baker	End
Rubiaceae	<i>Ixora maxima</i> Seem.	End
Rubiaceae	<i>Mastixiodendron</i> sp.	
Rubiaceae	<i>Morinda bucidifolia</i> A.Gray	End
Rubiaceae	<i>Mussaenda raiateensis</i> J.W.Moore	Ind
Rubiaceae	<i>Neonauclea forsteri</i> (Seem. Ex Havil.) Merr.	Ind
Rubiaceae	<i>Ophiorrhiza laxa</i> A.Gray	End
Rubiaceae	<i>Ophiorrhiza leptantha</i> A.Gray	Ind
Rubiaceae	<i>Psychotria platycocca</i> A.Gray	End
Rubiaceae	<i>Psychotria amoena</i> A.C.Sm.	End
Rubiaceae	<i>Psychotria archboldiana</i> Forsberg	End
Rubiaceae	<i>Psychotria brackenridgei</i> A.Gray	End
Rubiaceae	<i>Psychotria brevicalyx</i> Forsberg	End
Rubiaceae	<i>Psychotria bullata</i> Seem.	End, rare
Rubiaceae	<i>Psychotria carnea</i> (Forst. f.) A.C.Sm.	End
Rubiaceae	<i>Psychotria cf. griesseifolia</i> S.Moore	End
Rubiaceae	<i>Psychotria cf. hypagyraea</i> A.Gray	End
Rubiaceae	<i>Psychotria confertifolia</i> A.C.Sm	End
Rubiaceae	<i>Psychotria crassiflora</i> Fosberg	End
Rubiaceae	<i>Psychotria gibbsiae</i> S. Moore	End
Rubiaceae	<i>Psychotria gillespieana</i> A.C. Sm.	End
Rubiaceae	<i>Psychotria glabra</i> (Turill) Fosberg	End
Rubiaceae	<i>Psychotria incompta</i> A.C. Sm.	End
Rubiaceae	<i>Psychotria leucocalyx</i> A.C.Sm	End
Rubiaceae	<i>Psychotria parvula</i> A.Gray	End, rare
Rubiaceae	<i>Psychotria pickeringii</i> A. Gray	End
Rubiaceae	<i>Psychotria scitula</i> A.C.Sm.	End, rare
Rubiaceae	<i>Psychotria st-johnii</i> Fosberg	End

Family	Scientific Name	Distribution Status
Rubiaceae	<i>Psychotria storckii</i> Seem.	End
Rubiaceae	<i>Psychotria tephrosantha</i> A. Gray	End
Rubiaceae	<i>Psychotria tetragonoides</i> Fosberg	End
Rubiaceae	<i>Psychotria turbinata</i> A. Gray	End
Rubiaceae	<i>Psychotria brevicalyx</i> Forsberg	End
Rubiaceae	<i>Psychotria bullata</i> Seem.	End, rare
Rubiaceae	<i>Psychotria carnea</i> (Forst. f.) A.C.Sm.	End
Rubiaceae	<i>Psychotria cf. grieseifolia</i> S.Moore	End
Rubiaceae	<i>Psychotria cf. hypagyraea</i> A.Gray	End
Rubiaceae	<i>Psychotria confertifolia</i> A.C.Sm	End
Rubiaceae	<i>Psychotria crassiflora</i> Fosberg	End
Rubiaceae	<i>Psychotria gibbsiae</i> S. Moore	End
Rubiaceae	<i>Psychotria gillespieana</i> A.C. Sm.	End
Rubiaceae	<i>Psychotria glabra</i> (Turill) Fosberg	End
Rubiaceae	<i>Psychotria incompta</i> A.C. Sm.	End
Rubiaceae	<i>Psychotria leucocalyx</i> A.C.Sm	End
Rubiaceae	<i>Psychotria parvula</i> A.Gray	End, rare
Rubiaceae	<i>Psychotria pickeringii</i> A. Gray	End
Rubiaceae	<i>Psychotria scitula</i> A.C.Sm.	End, rare
Rubiaceae	<i>Psychotria st-johnii</i> Fosberg	End
Rubiaceae	<i>Psychotria storckii</i> Seem.	End
Rubiaceae	<i>Psychotria tephrosantha</i> A. Gray	End
Rubiaceae	<i>Psychotria tetragonoides</i> Fosberg	End
Rubiaceae	<i>Psychotria turbinata</i> A. Gray	End
Rubiaceae	<i>Psychotria broweri</i> Seem.	End
Rubiaceae	<i>Psychotria confertifolia</i> A. C. Sm.	End
Rubiaceae	<i>Rapanea polyantha</i> A.C. Sm.	End
Rubiaceae	<i>Readea membranacea</i> Gillespie	End
Rubiaceae	<i>Spermacoce assurgens</i> Ruiz & Pavon	Ind
Rubiaceae	<i>Timonius affinis</i> A. Gray var. <i>affinis</i> J. W. Parham	End
Rubiaceae	<i>Xanthophytum calycinum</i> (A.Gray) Benth. & Hook. f. ex Drake	Ind
Rutaceae	<i>Citrus limon</i> (L.) Burm.	Ind
Rutaceae	<i>Melicope cucullata</i> A.C.Sm	End
Rutaceae	<i>Melicope vitiensis</i> var <i>vitiensis</i> A.C.Sm.	End
Sapindaceae	<i>Allophylus timoriensis</i> (DC.) Bl	Ind
Sapindaceae	<i>Elattostachys falcata</i> (A.Gray) Radlk.	Ind
Sapindaceae	<i>Pometia pinnata</i> Forst.	Ind
Sapotaceae	<i>Burckella fijiensis</i> (Hemsl.) A. C. Sm. & S. Darwin	End
Sapotaceae	<i>Burckella parvifolia</i> A. C. Sm. & S. Darwin	End
Sapotaceae	<i>Palaquium porphyreum</i> A. C. Sm. & S. Darwin	End
Sapotaceae	<i>Palaquium vitilevuense</i> Gilly ex van Royen	End
Sapotaceae	<i>Palaquium fidjiense</i> Pierre ex Dubard	End

Family	Scientific Name	Distribution Status
Sapotaceae	<i>Palaquium hornei</i> Hartog ex Barker) Dubard	End
Sapotaceae	<i>Planchonella garberi</i> Christophersen	End
Sapotaceae	<i>Planchonella umbonata</i> (van Royen) A.C.Sm	End
Saurauiceae	<i>Saurauia rubicunda</i> (A.Gray) Seem.	End
Schizaeaceae	<i>Lygodium reticulatum</i> Schkuhr	Ind
Schizaeaceae	<i>Schizea dichotoma</i> (L.) Sm.	Ind
Schizaeaceae	<i>Schizea fistulosa</i> d. Labill.	Ind
Selaginellaceae	<i>Selaginella breynioides</i> Baker	End
Selaginellaceae	<i>Selaginella distans</i> Warb.	End
Selaginellaceae	<i>Selaginella firmula</i> A. Br. ex Kuhn	Ind
Selaginellaceae	<i>Selaginella laxa</i> Spring	Ind
Selaginellaceae	<i>Selaginella rechingeri</i> Hieronymus ex Rechinger	Ind
Selaginellaceae	<i>Selaginella viridangula</i> Spring	End
Simaroubaceae	<i>Amaroria soulameoides</i> A.Gray	End
Smilacaceae	<i>Smilax vitiensis</i> (Seem.) C. DC	Ind
Solanaceae	<i>Solanum americanum</i> Mill.	Adv
Solanaceae	<i>Solanum torvum</i> Sw	Adv
Sterculiaceae	<i>Commersonia bartramia</i> (L.) Merr	Ind
Sterculiaceae	<i>Firmania diversifolia</i> A.Gray	End
Sterculiaceae	<i>Heritiera ornithocephala</i> Kostermans	Ind
Symplocaceae	<i>Symplocos leptophylla</i> (Brand) Turrill	Ind
Thelypteridaceae	<i>Christella. Parasitica</i> (L.) Lev.	Ind
Thelypteridaceae	<i>Plesioneuron prenticei</i> (Carr.) Holtt.	End
Thelypteridaceae	<i>Plesioneuron rubrinerve</i> (Mett.) Holtt	Ind
Thelypteridaceae	<i>Sphaerostephanos invisus</i> (Forst.) Holtt	Ind
Thelypteridaceae.	<i>Christella harveyi</i> (Mett) Holtt.	Ind
Thelypteridaceae.	<i>Plesioneuron rubrinerve</i> (Mett.) Holtt.	Ind
Thelypteridaceae.	<i>Sphaerostephanos unitus</i> (L.) Holtt.	Ind
Tiliaceae	<i>Commersonia bartramia</i> (L.) Merr	Ind
Tiliaceae	<i>Grewia crenata</i> (J.R. & G.Forst.) Schinz & Guillaumin	Ind
Tiliaceae	<i>Microcos vitiensis</i> A.C.Sm.	End
Tiliaceae	<i>Trichospermum richii</i> (A.Gray) Seem.	Ind
Tiliaceae	<i>Trichospermum calyculatum</i> (Seem.) Burret	End
Ulmaceae	<i>Gironniera celtidifolia</i> Gaud.	Ind
Ulmaceae	<i>Parasponia andersonii</i> (Planch.) Planch.	End
Ulmaceae	<i>Tremna cannabina</i> Lour.	Ind
Urticaceae	<i>Boehmeria virgata</i> (Forst. f.) Guillemain	Ind
Urticaceae	<i>Dendrocnide harveyi</i> (Seem.) Chew	Ind
Urticaceae	<i>Elatostema australe</i> (Wedd.) Hall.	End
Urticaceae	<i>Elatostema filicoides</i> (Seem.) Schoter	End
Urticaceae	<i>Elatostema insulare</i> A.C.Sm	End
Urticaceae	<i>Elatostema nemorosum</i> Seem.	End

Family	Scientific Name	Distribution Status
Urticaceae	<i>Elatostema tenellum</i> A.C.Sm	End
Urticaceae	<i>Elatostema vitiense</i> (Wedd.) A.C.Sm.	End
Urticaceae	<i>Pipturus argenteus</i> var. <i>larnosus</i> Skottsb.	Ind
Verbenaceae	<i>Faradaya ovalifolia</i> (A.Gray) Seem.	End
Verbenaceae	<i>Gmelina vitiensis</i> (Seem.) A.C.Sm.	End
Verbenaceae	<i>Premna protusa</i> A.C.Sm. & S.Darwin	End
Verbenaceae	<i>Premna serratifolia</i> L.	End
Verbenaceae	<i>Viticipremna vitilevuensis</i> Munir	End
Violaceae	<i>Agatea violaris</i> A. Gray	Ind
Vitaceae	<i>Tetrastigma vitiense</i> (A.Gray) A.C.Sm.	End
Vittariaceae	<i>Antrophyum alatum</i> Brack.	Ind
Vittariaceae	<i>Antrophyum semicostatum</i> Bl.	Ind
Vittariaceae	<i>Vaginularia angustissima</i> (Brack.) Mett.	Ind
Vittariaceae	<i>Vittaria elongata</i> Sw	Ind
Vittariaceae	<i>Vittaria scolopendrina</i> (Bory) Thwaites	Ind
Zingiberaceae	<i>Alpinia vitiensis</i> Seem.	End
Zingiberaceae	<i>Alpinia boia</i> Seem.	End
Zingiberaceae	<i>Alpinia macrocephala</i> K.Schum.	End
Zingiberaceae	<i>Alpinia parksii</i> Gillespie) A.C.Sm.	End
Zingiberaceae	<i>Zingiber zerumbet</i> (L.) Sm.	Nat

Table 8. Invasive plant and weed species recorded from the Sovi Basin. * Species included in the list of 100 of the World's Worst Invasive Alien Species (ISSG).

Species	Status	Transect 1 (T1) Upper Wainivalau	Transect 2 (T2) Mid Wainivalau	Transect 3 (T3) Upper Sovi
<i>Ageratum conyzoides</i>	weed	X	X	X
<i>Bambusa vulgaris</i>	weed			X
<i>Alpinia sp.</i>	weed		X	
<i>Clidemia hirta</i> *	invasive	X	X	X
<i>Cuphea carthagenensis</i>	weed		X	X
<i>Kyllinga polyphylla</i>	weed	X	X	X
<i>Hyptis pectinata</i>	weed		X	X
<i>Eichhornia crassipes</i> *	invasive		X	
<i>Ipomoea sp.</i>	weed		X	
<i>Ludwigia octovalvis</i>	weed	X	X	X
<i>Merremia peltata</i>	invasive		X	X
<i>Mikania micrantha</i> *	invasive	X	X	X
<i>Paspalum conjugatum</i>	weed	X	X	X
<i>Piper aduncum</i> *	Invasive	X	X	X
<i>Psidium guajava</i>	weed		X	X
<i>Solanum torvum</i>	weed		X	
<i>Spathodea campanulata</i> *	invasive	X	X	X

ATTACHMENT 3:

WORKPLAN CATEGORIES

SOVI WORKPLAN PRIORITIES

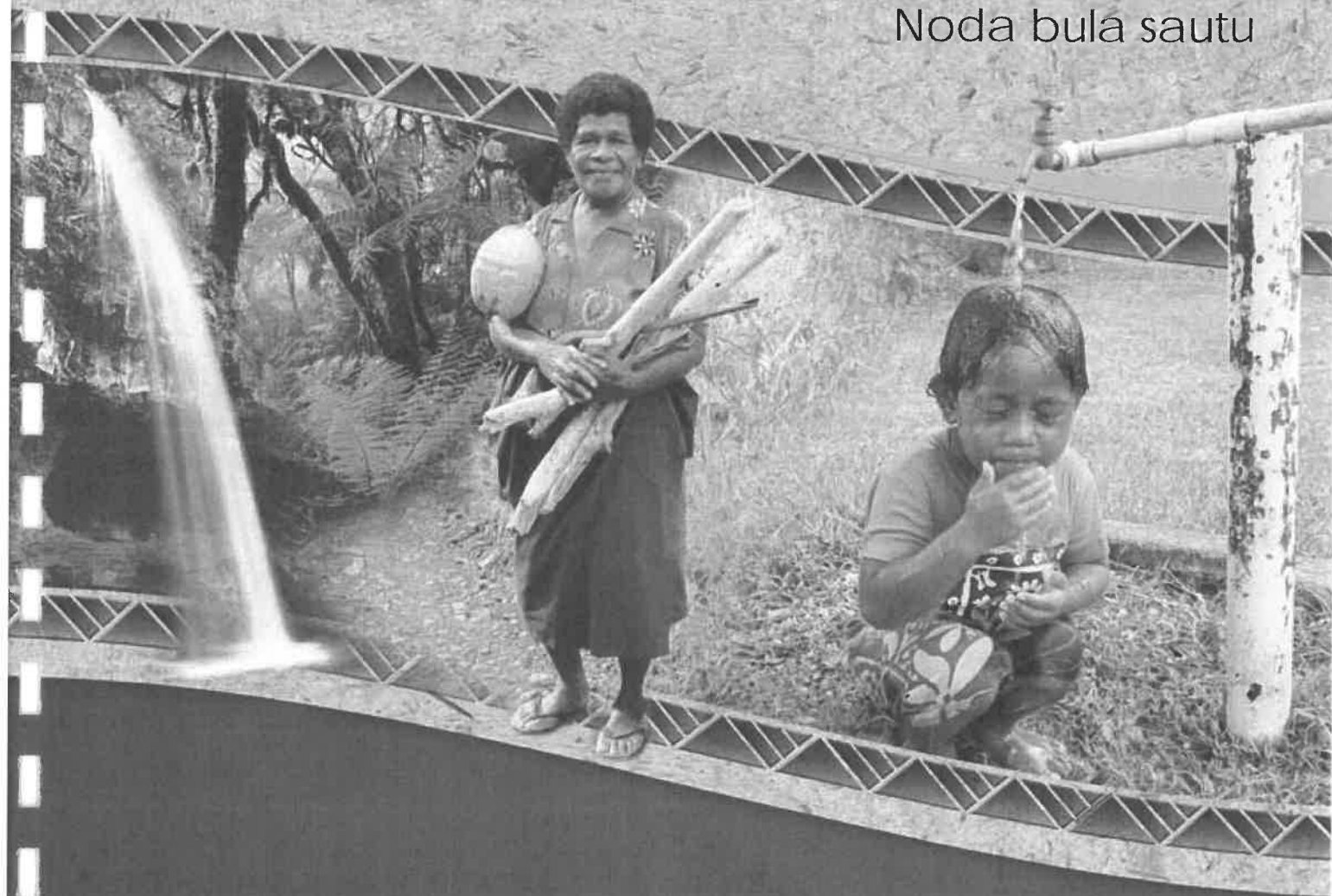
1.0 Governance and Development			
Work plans, budgets		Strategy 1.1 Ensure accountability and transparency to partners and the public. Output 1.1a Timely and regular reporting on NTF activities to targeted stakeholders and the public. Output 1.1b Operating management and financial procedures developed and followed.	
Annual plans budgets/ review			
Quarterly work plans/ budgets/ review.			
Activity work plans and budgets			
Personnel management			
Job descriptions			
Development of staff management systems.			
Staff performance reviews			
Finance and accounting activities.			
Management Planning	Management Planning		
Preparation of draft material	Preparation of draft material	Strategy 1.3 Regular monitor the management of all sites. Output 1.3 Activity on status of all heritage sites regularly reported.	
Staff input and stakeholder consultation	Staff input and stakeholder consultation		
Preparation of draft management plans	Preparation of draft management plans		
Preparation of final management plan	Preparation of final management plan		
Reporting			
Monthly progress reports			
Six month reports			
Annual reports			
2.0 Community Participation			
Project co-ordination and advocacy			Strategy 2.2 Collaborate and combine efforts with relevant agencies working with local communities Output 2.2 Community activities of the NTF are integrated into the community work plans of the Fijian Affairs Board
Conservation promotion meetings	Meetings/workshops with national and provincial agencies to promote conservation objectives		
Conservation co-ordination meetings	Meetings with provincial/ tikina authorities to improve co-ordination, and address activities that may impact on Sovi		
Framework Development			
Community Agreements			

2.0 Community Participation		
(etc. remaining headings to be determined e.g. Development of organisational capacity. Development of systems and rules. Study visits)		Strategy 2.3 Develop more interactive community conservation programmes
Community Conservation & Development Trust <ul style="list-style-type: none"> - Trust Meetings - Applications - Project Monitoring - Reporting 		Output 2.3 Increased community participation in heritage site programmes and activities
3.0 Capacity Building		
Training and meetings		Strategy 3.1 NTF staff undertake relevant training and learning programmes
Operational Management Training		
Training courses	All staff training courses should be listed in the work plan under this heading	Output 3.1a NTF staff trained in administrative and technical activities
Workshops		
Study tours		Output 3.1b NTF staff with a greater familiarity on other heritage sites in Fiji Output 3.1 c NTF staff learn from overseas heritage site programmes and overseas heritage site staff learn about Fiji sites
5.0 Financial Sustainability		
Sovi Basin Endowment Trust		Strategy 5.1 Explore and secure access to external sources of funding and investment for heritage conservation Output 5.1a Funding secured from grants and bilateral donors.
Infrastructure		
Construction of SBPA office		
Other buildings	Construction of other SBPA buildings	Strategy 5.2 Promote and Market the NTF sites to specific target groups
Electricity, water, toilets, telephone lines.	Installation/ completion of these services.	

5.0 Financial Sustainability		
Signs, fences, roads, parking areas.	Erection/construction of these facilities	Output 5.2 a Heritage sites and buildings made more attractive and interesting
Maintenance/repair.	Includes maintenance to the outside of buildings and all other infrastructure	
Landscaping.	Includes improvements to areas around buildings and tree planting.	
6.0 Strengthened Partnerships		
SBPA Steering Committee		Strategy 6.1 Formalise relationship with existing local partners for implementation of specific activities Output 6.1 Memorandums of Understanding (MoU) and Memorandum of Agreement (MoA) on activity implementation signed between local partners and NTF.
SBPA Steering Committee Meetings		
Other Meetings		Strategy 6.2 Cultivate new relationships with relevant local and overseas entities. Output 6.2 New partnerships developed with local and overseas organisations.
7.0 Sustainable Management of Heritage Sites		
Communication	Radios/mobile phones (as determined)	Strategy 7.1 Develop and implement sustainable management plans, including monitoring and evaluation procedures, for heritage sites Output 7.1a Ecological survey carried out in the natural heritage sites Output 7.1 b Natural heritage site management plans, including monitoring and evaluation procedures, developed and endorsed by stakeholders.
Reference material, technical publications.	Includes purchase of books, texts, reports	
Field Monitoring		
General patrolling/ ranging	Field inspections, visits for familiarisation, general monitoring, and awareness and enforcement purposes.	
Field monitoring records	Includes development of monitoring/ ranging rosters, and recording activities; back to office reports	
Enforcement activity and signs	Participation in enforcement activity and making and erecting signs	
Maps & Photos	Copies of cadastral maps; Sovi survey; aerial and satellite photos	
Boundary Demarcation	Incl. communication with DoF; and record of meetings; awareness raising with communities.	

Taveuni National Park

Noda iyaubula
Noda bula sautu



CAKAUDROVE PROVINCIAL OFFICE


NatureFiji
Mareqeti Viti



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1.0 Introduction

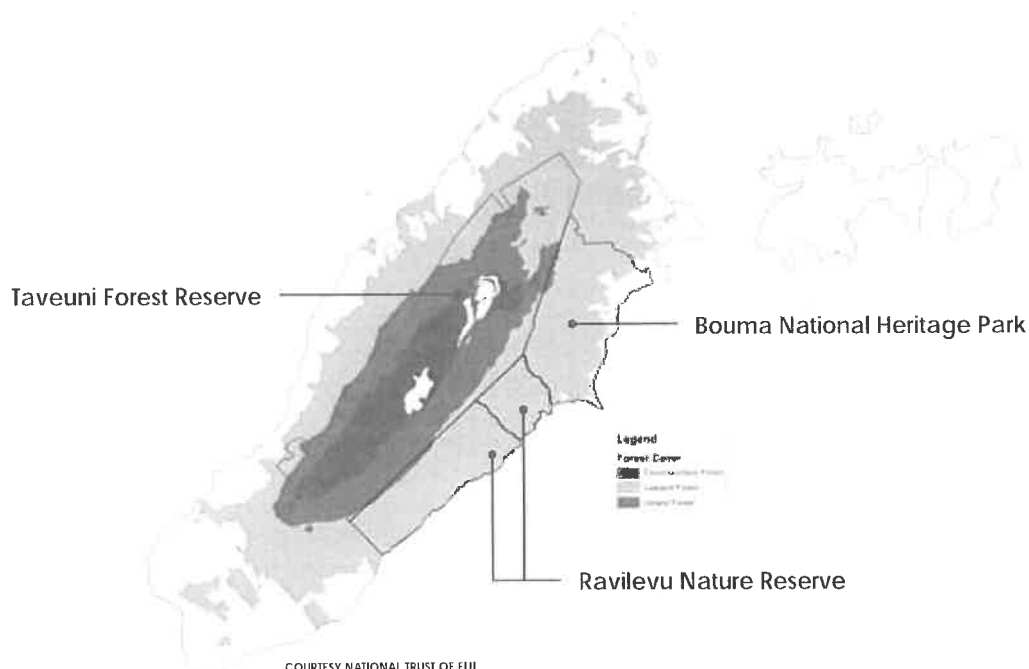
Located in the Province of Cakaudrove, the island of Taveuni is Fiji's third largest island. Since the 1980s, the National Trust and the Fiji Department of Forests have been advocating for the merger of the Ravilevu Nature Reserve, Taveuni Forest Reserve and the Bouma National Heritage Park to form the Taveuni National Park. In 1993 the Fiji Department of Environment proposed the 'Integrated Development Plan for Taveuni' supporting this combination to better promote the wilderness and cultural features of Taveuni to harness Taveuni's tourism market to its full potential.

In the year 2006 Stuart Chape, SPREP (Secretariat of the Pacific Regional Environmental Program), prepared an assessment of Taveuni forests for Government on suitability for the World Heritage Tentative List. This very positive assessment ranked Taveuni above the Sovi Basin (see Section 7) for listing.

Not until 2009 were landowners informed about plans which had been around for 30 years on possible Protected Area (PA, see Section 3) development, and the potential of Taveuni's forests for conservation.

If there is one conspicuous lesson of the lead up work of the Sovi Basin PA project, it was that there was no real progress until the landowners and the Fijian administration took ownership of the process. Getting the landowners involved in the PA discussions is the main objective of this project.

This document aims to give a brief background to Taveuni's protected areas, Taveuni's unique landscapes and species, aspects of Fiji's protected areas that landowners must take the time to understand. It also describes why combining Taveuni's existing PAs into one National Park, and its nomination as a World Heritage Site will be beneficial, not only to landowners, but also to farmers, tourism operators and other residents of Taveuni. Getting the landowners involved in the PA discussions is the main objective of this project; and we hope that the topics covered here will help facilitate these discussions.



1.1 Historical Overview

- 1980 – National Trust of Fiji first advocates the merger of Ravilevu Nature Reserve (NR) and Taveuni Forest Reserve (FR).
- 1988 – Dept. of Forests recommends combining Ravilevu NR and Taveuni FR as a single PA.
- 1991 – Bouma National Heritage Park established.
- 1992 – State of the Environment Report and National Environment Strategy identify combined Ravilevu NR and Taveuni FR as a national priority PA.
- 1992 – Dereservation of parts of the Forest Reserve including areas with encroachment.
- 1993 – Department of Environment issues a major proposal '*Integrated Development Plan for Taveuni*' supporting the combination.
- 1999 – National Biodiversity Strategy and Action Plan confirms combined Ravilevu and Taveuni FR as a national priority PA. Endorsed by Cabinet in 2003.
- 2005 – Logging and encroachment in the Taveuni FR reported.
- 2006 – Combining the two reserves advocated in a Management Plan prepared for Ravilevu NR.
- 2006 – Stuart Chape, SPREP (Secretariat of the Pacific Regional Environmental Program), prepares an assessment of Taveuni forests for Government on suitability for the World Heritage Tentative List. Very positive assessment – ranks Taveuni above Sovi for listing.
- 2009 – MareqetiViti undertakes awareness work with landowners on biodiversity conservation and the importance of the PAs, for National Trust and the Provincial Office.



2.0 World Heritage Listing

The project will work with the relevant government departments to have the forests of Taveuni placed on the World Heritage Tentative List (see Section 6.1). When this happens funding is available for comprehensive consultation with landowners and other stakeholders before a decision is made for applying for full listing as a World Heritage Site.

2.1 Taveuni – World Class Wildlife and Landscapes

2.1.1 Special Landscapes on Taveuni

Taveuni's outstanding landscape qualities are derived mainly from its tropical forest cover. From all points around the Taveuni coastline, there are views of the undisturbed, densely forested uplands. Frequently cloud and mist-capped, the rugged central range dominates the landscape with characteristic emergent volcanic cones. From the peaks of the central range descend the long symmetry of old lava flows covered with dense rainforest. Waterfalls, rivers and clear water streams abound on the island, and the forests are unusually lush with their abundance of ferns and epiphytes. The Ravilevu NR has particularly high landscape values. There are a number of spectacular waterfalls near the coast and some fall straight into the sea.

2.1.2 Fiji's Endemic Species on Taveuni

There are 17 Taveuni endemic plant species, 5 Fijian endemic amphibians and reptiles, 7 Taveuni endemic bird races and 15 Fijian endemic bird species (out of a total of 45 bird species), and one endemic mammal – Beka Mirimiri. Within a Fiji national and a Pacific regional context Taveuni is clearly of outstanding heritage value in terms of its biodiversity values.

- Of the 497 plants recorded from Taveuni, 182 or 37% are Fiji endemics. In terms of Taveuni endemics, there are 17 endemic plant species, including 3 palms; 18 new fern records have been recorded from Des Voeux peak, including 3 species new to Fiji. The Fijian iconic flowering *Tagimoucia* occurs at high altitudes and has great cultural value to some of Taveuni's communities.
- Taveuni is regarded as the most important island in Fiji for the conservation of herpetofauna: 16 Fijian amphibians and reptiles occur (more than any other Fijian island).
- There are 45 native bird species recorded on Taveuni, including 15 Fijian endemic species and 7 bird races endemic to Taveuni.
- Six species of native bats comprise the mammal fauna. Of special interest is the Taveuni endemic Beka Mirimiri. A new genus has recently been established for this flying fox, previously designated as *Pteralopex*, it is the only bat in the world in the genus *Mirimiri*.

Taveuni

Special Species



Fiji Flying Fox *Mirimiri acrodonta*

One of the rarest bats in the world, the Fiji Flying Fox *Mirimiri acrodonta* appears to be confined to Taveuni's cloud forest.

Bouma Palm *Hydriastele boumae*

Named after the Bouma National Heritage Park, the Bouma Palm *Hydriastele boumae* was described in 2006.



Orange Dove *Chrysoenas victor*

Taveuni is famous amongst birders for its Orange Dove *Chrysoenas victor*.

Fiji Free-tailed Bat *Chaerophon bregullae*

The Fiji Free-tailed Bat *Chaerophon bregullae* is more commonly encountered on Taveuni than on any other island.



Alsmithia longipes

Alsmithia longipes is a recently discovered understory forest palm with a bright red emerging frond.



Blue-tailed skink *Emoia caeruleo-cauda*

In Fiji the small Blue-tailed skink *Emoia caeruleo-cauda* is only found on Taveuni.



Clinostigma exorrhizum

A palm of the cloud forest, *Clinostigma exorrhizum* is a characteristic emergent palm of Taveuni's uplands.



Red-throated Lorikeet *Charmosyna amabilis*

Once found on Taveuni, there have been no confirmed sightings of the Critically Endangered Red-throated Lorikeet *Charmosyna amabilis* for nearly 20 years.



Silktail *Lamprolia victorinae*

The enigmatic Silktail *Lamprolia victorinae* is by no means uncommon in Taveuni's undisturbed forests.



Taveuni Blind Snake *Rhamphotyphlops* sp.

Taveuni Blind Snake *Rhamphotyphlops* sp. remains undescribed, it was rediscovered in 2009, nearly 100 years after its existence was first reported.



Viti Iguana *Brachyophus bulabula*

The Viti Iguana *Brachyophus bulabula* is not commonly seen on Taveuni and is potentially threatened by the newly arrived American Iguana *Iguana iguana*.



Pilot whales

Large pods of Pilot Whale *Globicephala* sp. are commonly seen off Taveuni from time to time.



Golden Tree Crab

This Golden Tree Crab has yet to be formally identified. It was first seen in Taveuni but has since been recorded from several other islands.

- Taveuni is home to Quo, often regarded as the world's second largest beetle species with specimens sometimes reaching 14-15 cm in body length;
- Currently 21 species which are internationally or nationally regarded as threatened with extinction have been identified from Taveuni. Three of these, the tree *Syzigium phaeophyllum*, the Beka Mirimiri and the Kulawai are categorised as Critically Endangered on the IUCN Red List.

2.1.3 Why are the Wildlife and Landscapes of Taveuni so Important?

Much of Fiji's land and forest has now been impacted and modified by deforestation, commercial and subsistence agriculture, plantation timber production and/or invasive alien species. We must also remember the historic impacts of the first settlement that resulted, for example, in the extinction of many species and conversion of dry forests to grasslands.

Taveuni is one of only a very few islands where the scale of these impacts has been limited. Not only has it retained significant forest and wetland ecosystems across a full altitudinal range (ridge to reef), but also it has not been severely impacted by invasive species, in particular the mongoose. The absence of the mongoose from Fiji's third largest island has resulted in the retention not only of Taveuni's endemic fauna species but also Fijian endemics that have been extirpated or are highly threatened on Viti Levu and Vanua Levu.

The thriving agricultural industry of Taveuni can attribute its success to the Taveuni FR which was established to ensure unlimited water supply and free ecosystem services to the people of Taveuni.

2.1.4 Outstanding Biodiversity and Landscape Values in a Global Context

In the national context the combined Taveuni Forest Reserve, Ravilevu Nature Reserve and Bouma Heritage Park comprise one of the two most important conservation areas in Fiji, the other being the Sovi Basin on Viti Levu. In addition to fauna and flora species values, additional values of Taveuni are:

- a high proportion of remaining forest including "an intact ridge-to-reef ecosystem, extremely rare in the Pacific", with much of the forest unfragmented;
- the largest mongoose-free island in Fiji; and
- the largest natural freshwater wetland in Fiji – Lake Tagimoucia.

The eastern side of the island that forms the core area encompasses a sea-to-mountaintop 1,200 metres altitudinal ecocline of vegetation now rarely found in Oceania. The diverse forest types range from coastal and wetland forests, including mangroves, beach forest to cloud forests on the summits of the ridges. A second unique ecocline occurs in the vegetation sequences surrounding Lake Tagimoucia. This is Fiji's only natural example of a large freshwater lake and its value to science is greatly enhanced by the undisturbed condition of its surrounding vegetation.

Although not as large as the proposed Sovi Basin protected area on Viti Levu, the above features – in addition to its species values – make Taveuni as important in both a national and regional context.

A recent, in-depth analysis by Stuart Chape 'Islands and Ecosystems Program Manager' for Secretariat of the Pacific Regional Environment Program (SPREP), concluded that Taveuni's biodiversity and landscape values were sufficient for it to be nominated as a World Heritage Site – the highest accolade in the global context.

The spectacular natural and cultural features of Taveuni's forests together build a strong imperative for ecotourism development. International promotion of the wilderness and cultural features of Taveuni would be the key to a new heritage focus to Taveuni's tourism market.



3.0 Fiji's Terrestrial Protected Areas

3.1 What is a Protected Area?

Protected Areas have been identified in one form or another since man first appreciated the importance of his environment. There are many forms of Protected Area worldwide and several different types in Fiji. A general definition is *"A defined area, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values"*.

Fiji differs from most other countries in the world in that all but a small part of Fiji's land and forests are owned by traditional landowners who have primary authority over the land. In most cases this has resulted in much of Fiji's forests being "protected" by their traditional owners in a passive manner. As such government has not been active in setting up formal Protected Areas.

However, times are changing and landowners understand that all their resources need to be providing for their current and future well-being. Formal Protected Areas are a land use like agriculture, forestry and others which can serve landowners' current and future needs. There are major changes and values of Protected Areas worldwide and Fiji's land and forest owners need to be informed of these and start to make decisions regarding them, rather than allowing old designations and management to persist without question.

3.2 What Types of Protected Areas are there in Fiji?

There are many types of 'Protected Areas' for Fiji's forests. The variety causes confusion in terms of establishment, management authority, tenure, level of protection, legislation, boundaries and current management. They include:

Tabu areas – landowners identify areas of forest which they want preserved for cultural reasons. There are not many of these and they tend to be small.

Nature Reserves – these were set up in the 1950's specifically for wildlife values. Only two of these are important today – Ravilevu NR in Taveuni (freehold) and Tomanivi NR (freehold). The legislation for these is now outdated.

Forest Reserves – set up under the same outdated legislation for forestry-related purposes and not for conservation. However, the Taveuni FR which was declared in 1914 is maintained for conservation purposes and is leased from landowners. A recent FR set up for conservation purposes is Wabu FR (leased from landowners), which is adjacent to Tomanivi.

National Trust Reserves – the National Trust under its legislation manages sites of national heritage and these are legally constituted sites of various types such as Sigatoka Sand Dunes National Park (proclaimed by Cabinet Decree), Garrick Memorial Park (Navua – a donation of freehold land), Waisali Reserve (Savusavu – lease from landowners), Yadua Taba Iguana Reserve (lease) and the Sovi Reserve (lease with Trust Fund).

Trust Fund – the Sovi Reserve in Naitasiri-Namosi has been set up through a Trust Fund with management undertaken by National Trust of Fiji. The lease is for 50 years.

Heritage Parks and Other Community Managed Forests – There are two recognized community-owned and managed Heritage Parks – the Bouma National Heritage Park (a covenant agreement between iTaukei Land Trust Board (TLTB) and landowners, Department of Forests and NZ Government), and the Koroyanitu National Heritage Park. No lease is in place for these, as they are community-owned and managed and have received significant development assistance from NZ Government. Certain other forests are being protected and managed by communities themselves – these include forests in Natewa Peninsula, Kubulau, Gau and Kadavu.

Protected Forests – Department of Forests has classified forests throughout Fiji under several categories that relate to forest function. In 'Protected Forests' includes upland forests which are important water catchment areas, and those areas with slopes over 30° and longer than 100 metres that are considered too steep for logging. There is no lease or administration of these areas; they relate solely in respect of logging.

Taveuni

Special Landscapes



© STUART CHAPE

Waitavala Rock Slides



© STUART CHAPE

Lake Tagimoucia



© STUART CHAPE

Waitabu Marine Reserve Park



© STUART CHAPE

Des Voeux Cloud Peak



© NURIA THOMAS

Ravilevu Nature Reserve



© STUART CHAPE

Ravilevu Rock Falls



DICK WAITING

Waitabu Beach



© STUART CHAPE

Tavoro Falls

Water Catchment and Other Areas – These are quite varied and include:

- Department of Lands administers certain areas which are water catchments and which are leased from landowners – such as Savura, Vaturu;
- Fiji Electricity Authority leases the water catchment area of the Monasavu Dam;
- Rivers Fiji Ltd. leases the Upper Navua Gorge Conservation Area from the landowners and manages it as a conservation area and ecotourism initiative. This is Fiji's only Ramsar Site, an internationally designated site; and,
- Namenalala Island is leased to a resort operator but 75% of the island cannot be developed at all and must be managed as a protected area by the resort operator.



4.0 Now is the Time for Change

4.1 Ensuring that Landowners are True Beneficiaries

Currently the Taveuni FR provides very little monetary benefit to the landowners while lowland communities and lowland agriculture benefit from its important role as a watercatchment.

Landowners need to learn about other PAs in Fiji and see what benefits the landowners are accruing or it is planned for them to accrue – i.e. Sovi, Bouma, Koroyanitu, Upper Navua Conservation Area. With this knowledge, an opportunity for some of them to see PAs elsewhere in Fiji, and an understanding of the potential of Taveuni's forests for conservation development, the landowners will be in a position to voice their opinions as to what direction they want to take.

4.2 Problems with the Forest Reserve and Nature Reserve Legislation

There are fundamental problems relating to the Forest Decree 1992 and the designations of Nature Reserve and Forest Reserve for conservation leases. iTLTB will not use the Nature Reserve provision of the Forest Decree for conservation leases because it inhibits traditional landowner rights. The Forest Reserve provisions are not suitable for modern conservation needs at all.

New legislation for Protected Areas is currently being drafted and this project will assist that process to enable landowners to best benefit from conservation.

Currently there are major changes both in Fiji and internationally concerning forest management and protected areas.

4.2.1 Changes in Fiji:

- Fiji has a new Forest Policy which recognizes the importance of conservation of forests;
- Forestry Department is being re-organised as an Authority with new legislation;
- New legislation for Protected Areas is being drafted;
- iTaukei Land Trust Board is introducing a new 'Conservation' lease category;
- There is significant international interest and funding available for forest conservation in Fiji; and,
- Tourism is now the #1 national industry, and it has a major need for new attractions with many potential benefits for forest owners, as forest use by tourists is extremely under- developed.

4.2.2 Changes internationally:

- The areas of large undisturbed areas of native forest are declining rapidly making the value of the remaining forests, such as those on Taveuni and Savi, increasingly valuable in their own right as forests and not for logging or clearing for agriculture;
- Carbon credit and carbon marketing are fast emerging international schemes which forest owners will be able to participate in; and,
- The value of forests is changing from one where extraction (logging) or clearing (agriculture) were seen to be the most important uses, to the new age when the value of forests is largely for their environmental services which are now being increasingly recognized. Environmental services are provided by forests in their natural state or, if impacted, in their restored state.

The forest owners of Taveuni need to recognize these changes and start to make decisions on future uses of their forests.

5.0 Why do we Need to Modernise Taveuni's Protected Areas?

5.1 Taveuni's Protected Areas

Taveuni has three Protected Areas which together form a contiguous landscape comprising 38% of the land area of Taveuni.

The Protected Areas consist of two state reserves:

- the Taveuni Forest Reserve (FR) declared in 1914 and 11,160 ha in area; and,
- the Ravilevu Nature Reserve (NR) declared in 1959 and 4,018 ha in area.

In addition, there is the community-managed:

- Bouma National Heritage Park (NHP) established by covenant in 1990 with an area of 1,417 ha.

5.2 Legislation and Management

The two state reserves were set up in colonial times and managed today under the Forest Decree. However, Forestry Department does not have the resources or the mandate for conservation and so the two reserves receive only passive management. The Taveuni FR is nearly 100 years old and was set up when the copra industry was in its prime. It was realized then that Taveuni's geology and topography resulted in rivers and streams rapidly running dry during dry seasons; as such the headwaters of all the rivers needed protecting to ensure sustained stream flow for the coconut plantations and other agriculture in the lowlands.

The absence of management by Forestry has led to multiple encroachment into the FR as landowners and immigrants seek new fertile land as old land becomes exhausted and is abandoned. This type of agriculture is unsustainable and threatens the viability of all of Taveuni's agriculture as well as the water resources in the coastal areas.

Encroachment into the FR led to de-reservation of part of the reserve as well as all areas considered potentially suitable for logging by the Forestry Department in 1992.

The Ravilevu NR is state freehold land – it has never had any form of management other than passive management by Forestry Department.

The Bouma National Heritage Park remains under the ownership and management of the landowners under a covenant agreement with the ITLTB, Department of Forestry and Government of New Zealand. Because of its status as a community managed area, the site has received considerable support, especially from New Zealand to assist the community manage the site for ecotourism. As such it is the most successful community-managed protected area in Fiji.

5.3 Lack of National and International Recognition

While the Bouma NHP is quite well known nationally and even internationally – it is mentioned in many tourist guide books – the Ravilevu NR and Taveuni FR are completely unknown as extremely valuable protected areas. Since they receive little or no management and because the management authority (Forestry Department) has no mandate in conservation or tourism – their tourism and conservation potential has not developed at all.

However, the need for protection and their conservation and tourism potential has been recognized within Government and conservation NGO circles since 1989 when it was first recommended that the two reserves be amalgamated to form a Taveuni 'National Park'. This was recognized as a priority by the National Environment Strategy 1993 and recognized as such again in the Fiji Biodiversity Strategy and Action Plan in 1999 which was endorsed by Cabinet in

2003. Fiji has no 'National Park' legislation and so this cannot be undertaken at present, however, the new legislation currently being drafted will include such a designation.

6.0 Why is a 'National Park' Special?

In 2006 there were 6,555 national parks worldwide that met the criteria recognized by IUCN. There is no single definition of a National Park and their tenure and management vary around the world, but the following are the general IUCN criteria:

- They are not greatly altered by human exploitation and occupation, where plant and animal species, geomorphological sites and habitats are of special scientific, educative and recreative interest or which contain a natural landscape of great beauty.
- A minimum size of 1,000 hectares.
- The national government is responsible for legal protection and management.
- Visitors are allowed to enter, under special conditions, for inspirational, educative, cultural, and recreative purposes, and,
- Prohibition of exploitation of natural resources.

Today, National Parks are extremely well known all around the world and tourists and potential visitors know what to expect when they read about a National Park. Many tourists will select their destination on the basis of the presence of a National Park nearby. So a National Park on land would be extremely useful for marketing Taveuni which is currently known mainly because of its diving. If a National Park or equivalent was set up, there would be no changes to the type of management currently being undertaken at Bouma – it would remain a 'community-managed' operation, but more resources would be available. It could also be expected to attract many more tourists because of better worldwide recognition as part of a 'National Park'.

6.1 What is a World Heritage Site?

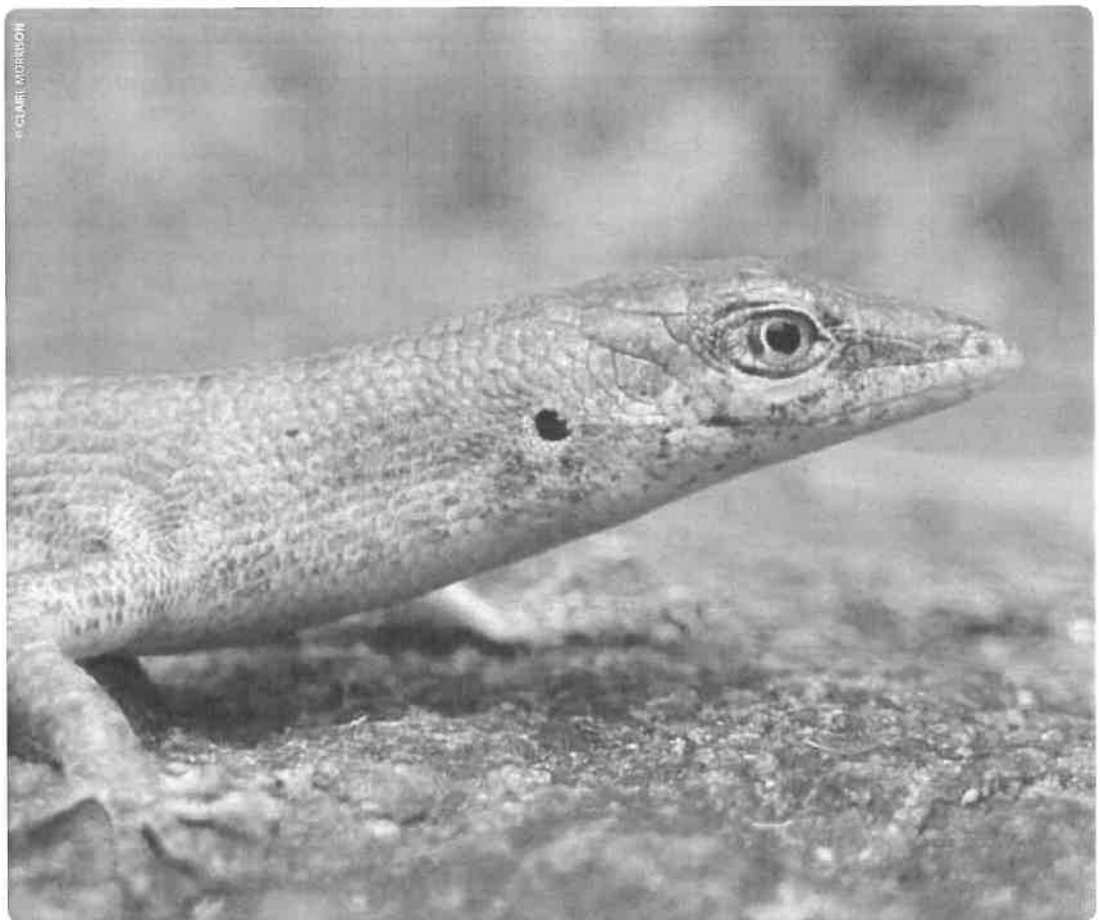
A UNESCO World Heritage Site is a place (such as a forest, mountain, lake, desert, monument, building, complex, or city) that is listed by the UNESCO as of special cultural or physical significance. Sites are selected on the basis of the overriding principle of 'outstanding universal value'. The World Heritage List represents the pinnacle of the world's natural and cultural heritage. World Heritage Sites contain some of the most famous places around the world such as the Pyramids in Egypt; Kakadu NP, Uluru NP and the Sydney Opera House in Australia; Yellowstone NP and the Statue of Liberty in the United States of America. World Heritage Sites generate enormous tourism attraction simply because they have reached the status of a World Heritage Site.

In 2011, there were only 183 'natural' World Heritage Sites; the others were 'cultural' or 'mixed' sites. Levuka has been identified as a potential 'cultural' World Heritage Site but it has not managed to develop that potential to actually

apply for the status. There are only six World Heritage Sites in the island Pacific – East Rennet Island (Solomons), Hawaii Volcanoes NP, Henderson Island, Easter Island and Lord Howe Island.

In 2006, Stuart Chape, an experienced evaluator of World Heritage Sites, prepared a report for the Government, *"Assessment of the Suitability of Placing the Taveuni Forest Reserve and Ravilevu Nature Reserve on Fiji's World Heritage Tentative List"*. Getting on the Tentative List is the first step in the World Heritage Site process. The report was extremely positive: *"...the conclusion of this review is that of all the potential sites in Fiji, Taveuni presents the best prospects for inscription on the World Heritage List as a 'stand-alone' site for its terrestrial heritage values"*. Another recommendation of the review was *"The Government should give serious consideration to the future tenure arrangements of the existing reserves, with a view to combining the existing forest and nature reserves and Bouma Heritage Park into a large, co-managed Taveuni National Park."*

For a potential forest World Heritage Site such as Taveuni, the support of the landowners is absolutely critical and the process to reach World Heritage Site status has to involve the landowners and other stakeholders in Taveuni to ensure that they are fully informed and agreeable, and participate in all decisions during what can be a long process. The current project by NatureFiji-MareketiViti is the very first discussion about 'National Parks' and 'World Heritage Sites' with the forest landowners of Taveuni.



7.0 Case Study on the Sovi Basin Protected Area

7.1 Overview

- The Sovi Basin, Waimaro is the largest remaining area of intact, undisturbed forest in Fiji. It has an area of nearly 20,000 hectares which belong to 14 mataqali from seven villages.
- Sovi was first identified as an important conservation site in 1989.
- 1996, on behalf of the landowners, NLTB "accepted in-principle the concept of environmental conservation and sustainable development of Sovi Basin".
- Little progress 1996-2004 as foreign NGO set development agenda.
- SBWG (Sovi Basin Working Group) set up in 2004 comprising Provincial Councils, NLTB, Forestry, National Trust, Environment, USP, CI and Landowners.
- In depth landowner consultations 2004-2005 to determine landowner issues and obtain consents.
- Short-term lease – 5 years issued by NLTB (2005-2010).
- Community Education fund during the short term lease – 208 awards with \$43,000 allocated.
- Major biodiversity surveys led by USP 2003-2006.
- Setting up of a Trust Fund to finance the lease and the management of the Sovi Protected Area 2005-2008.
- Fiji Water makes major donation to provide the Trust Fund with all the funds required.
- 2010-11 Final landowner consents for a 99-year lease to the National Trust acquired.
- 2011 iLTB makes lease offer to National Trust

Conclusion – this has been a long process, but much has been learned. It need not take this long for Taveuni. But the important initial step is to inform the landowners and hear their voice.

7.2 The Trust Fund

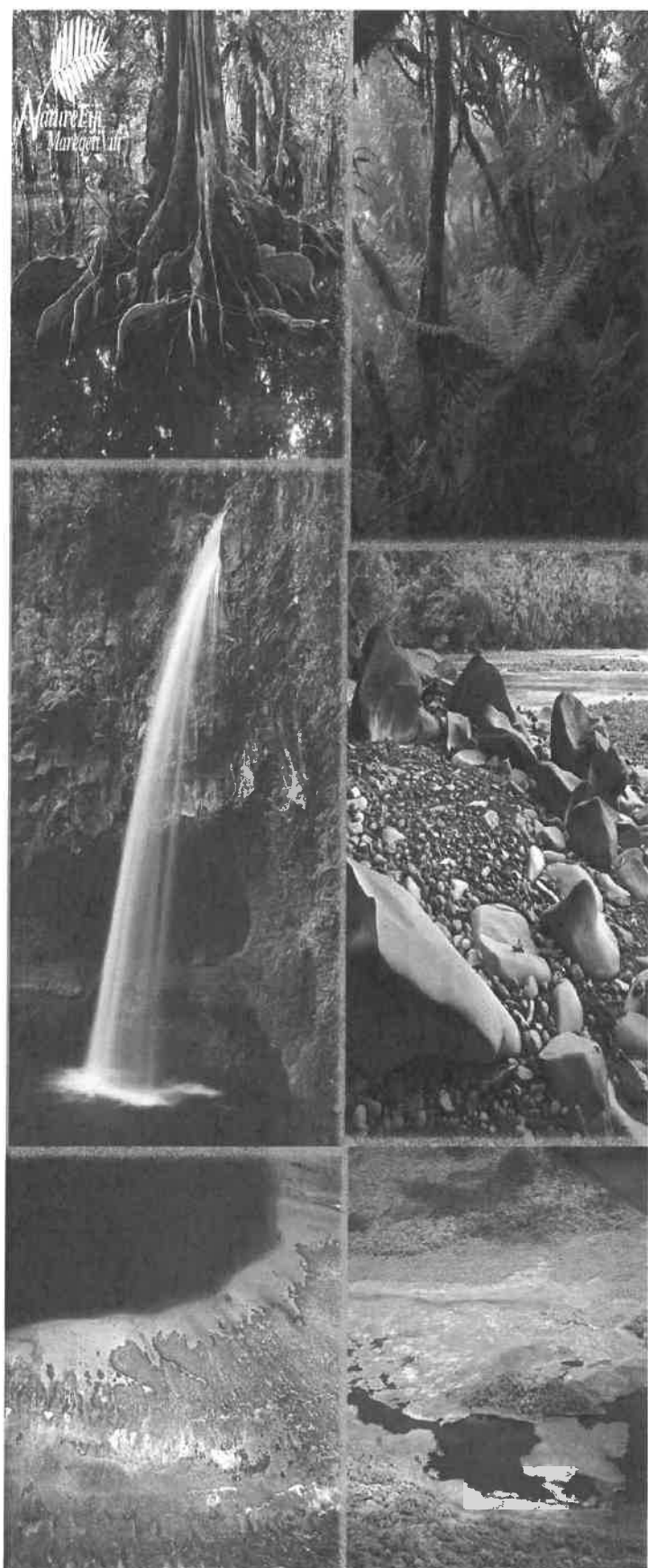
Purpose of the Trust Fund is to secure a large sum of money which is invested and the annual income is then used for the guaranteed, long-term financing for all components of the Sovi Basin PA. The Trust Fund itself is not touched and so, if properly managed continues to provide sufficient income forever, including:

- Lease and Royalties
- Lease based on UCV – countrywide assessment
- Royalty based on standing timber assessment by FD
- Paid though NLTB
- Reviewed every 5 years with max. increase of 5%
- Community Conservation & Development Fund

- Annual funding for community projects – not restricted to landowner mataqali but all the village communities as a whole:
 - Community projects can be development and/or conservation projects
 - Protected Area Management Budget
 - Managed by National Trust
 - Fund Sovi PA Administration, Conservation Officers, etc.
 - Fund annual operating budget
 - Implement co-management with landowners
 - Target 60% to go back to communities.
- Approximate requirements:
 - Trust Fund target – US\$4.5 million
 - Annual Income – F\$110,000
 - Lease & Royalties – F\$110,000
 - Community Conservation Development Fund – F\$65,000
 - Sovi Basin PA Management – F\$180,000 (target 50% to the communities)
 - Fees (NLTB) – F\$27,000

List of Abbreviations

CI	Conservation International
FR	Forest Reserve
IUCN	International Union for the Conservation of Nature
NHP	National Heritage Park
NP	National Park
NR	Nature Reserve
PA	Protected Area
SPREP	South Pacific Regional Environment Programme
TLTB	iTaukei Lands Trust Board
UCV	Unimproved Capital Value
UNESCO	United Nations Education, Science and Cultural Organisation
USP	University of the South Pacific



**ESTABLISHING
THE TAVEUNI
NATIONAL PARK
– THE NEXT
STEPS**

***“A DISCUSSION
PAPER”***

December 2012


NatureFiji
Mareqeti Viti

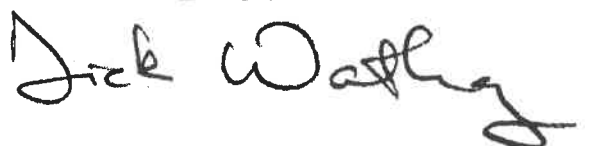
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PAPER FOR DISCUSSION PURPOSES ONLY

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Taveuni National Park: A Discussion Paper

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- Attachment 1 Record of Questions Asked in the Second Round of Consultations
(May 8-22 2012)
- Attachment 2 Taveuni Landowners Capacity Building Tour Vanua Levu, Viti Levu.
29th July – 14th August 2012

ABBREVIATIONS AND ACRONYMS

CBD	Convention on Biological Diversity
DoEnv	Department of Environment
EIA	Environmental Impact Assessment
EPS	Endangered and Protected Species Act
FD	Forestry Department of the Republic of the Fiji Islands
FR	Forest Reserve
GoF	Government of Fiji
iTLTB	iTaukei Land Trust Board
IUCN	International Union of Conservation of Nature
NBSAP	National Biodiversity Strategy and Action Plan
NFMV	NatureFiji-MareqetiViti
NGO	Non-Governmental Organization
NHP	National Heritage Park
NLTB	Native Land Trust Board
NP	National Park
NR	Nature Reserve
NRLUP	National Rural Land Use Policy
PA	Protected Area
PAC	National Protected Areas Committee
SPC	Secretariat of the Pacific Community

1 THE BACKGROUND

1.1 PURPOSE OF THIS PAPER

December 2012 saw the end of an intensive year of awareness work among the landowners of the nominal Taveuni National Park. Considerable interest and support has been generated among the landowners and other stakeholders for a national park. There are also some significant issues which need to be addressed.

The next steps in establishing the Taveuni National Park require the involvement of a wider audience, in particular the involved Government and other regulatory agencies, and a more formal administrative framework receptive to the growing interest of the landowners and able to address emerging issues.

This paper summarises the objectives of the Taveuni National Park project, the work undertaken to date, the accomplishments; and details the next steps required to maintain the momentum and establish the Taveuni National Park.

1.2 COMPONENTS OF A FUTURE NATIONAL PARK

Taveuni has two legislated Reserves and a community-managed Protected Area which together form a contiguous landscape comprising nearly 16,600 hectares of some of the least disturbed forest in Fiji, and 38% of the area of Taveuni..

The Protected Areas consist of two state reserves:

- the Taveuni Forest Reserve (FR) declared in 1914 and 11,160 ha in area; and,
- the Ravilevu Nature Reserve (NR) declared in 1959 and 4,018 ha in area.

In addition, there is a community-managed area:

- Bouma National Heritage Park (NHP) established by covenant in 1990 with an area of 1,417 ha.

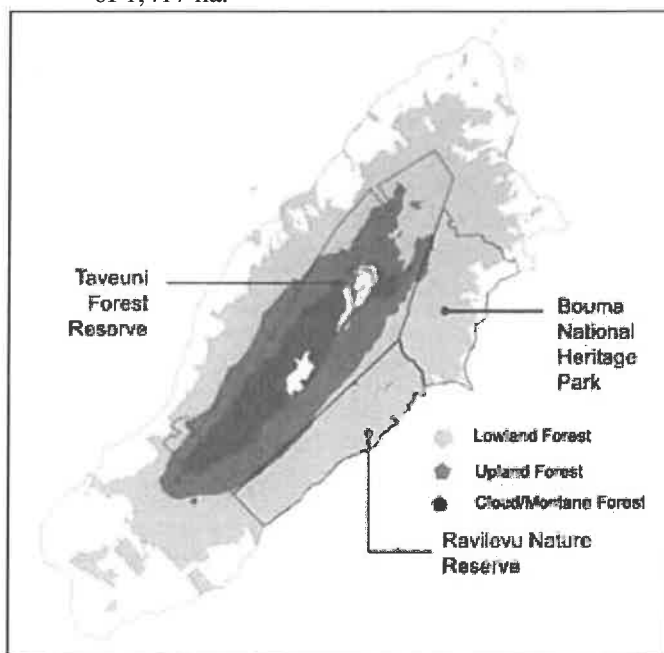


Figure 1: Taveuni illustrating the three Protected Areas which comprise the current Taveuni National Park Project

1.3 WHY TAVEUNI ?

1.3.1 Conservation Values

Much of Fiji's land and forest has now been impacted and modified by deforestation, commercial and subsistence agriculture, plantation timber production and/or alien invasive species. Taveuni is one of only a very few islands where the scale of these impacts has been limited.

Taveuni has an international reputation as an island of outstanding natural beauty, and is generally referred to as Fiji's 'Conservation Stronghold'. Not only has it retained significant forest and wetland ecosystems across a full altitudinal range (ridge to reef), but also it has not been severely impacted by invasive species, in particular the mongoose. The absence of the mongoose from Fiji's third largest island has resulted in the retention not only of Taveuni's endemic fauna species but also Fijian endemics that have been extirpated or are highly threatened on Viti Levu and Vanua Levu.

1.3.2 Ecosystem Services

Taveuni has no significant rivers, its extensive uplands are drained by many hundreds of small streams and rivers which travel quickly from the uplands to the coast. This combined with free-draining soils found over much of Taveuni render lowland areas very vulnerable to droughts. Maintaining a forest cover in the uplands is the best assurance of maintaining sustained water flow in the streams to the lowland areas. This hydrological function of the forest cover of the uplands is taken for granted but is the key to the productivity of Taveuni's lowland agricultural areas.

1.3.3 Timber Values

Taveuni's timber values are very low by comparison with most forest areas in Fiji. The original forest inventory of the Taveuni FR and Ravilevu NR identified very limited areas of potential Production Forest (Tuikoro 1984) and following submissions in the late 1980s, another partial inventory was undertaken and almost all potential Production Forests were subsequently dereserved.

1.3.4 Tourism

Taveuni is already an established tourism destination focusing almost entirely on sea or beach-based activities, and it has an international reputation for its diving. Taveuni's upland forests offer a wide variety of tourism opportunities, with its birdwatching already well established internationally because of the Orange Dove and the Silktail. Taveuni's road infrastructure almost encircles the proposed National Park, as such access is already well developed.

1.4 NATIONAL POLICY CONTEXT OF THE TAVEUNI NATIONAL PARK

The National Trust for Fiji was the first to formally recognise the need to extend the Ravilevu NR, in this case by creating a new Reserve to include Lake Tagimoucia and surrounding area (Dunlap & Singh 1980), and then to transfer management of the Reserve(s) to the National Trust.

However, it was the Ministry of Forests which first raised the concept of a National Park by combining the NR with the FR, stating that one of its strategies to achieve goals of forest conservation is to:

“set the initial stages of declaring and combining the existing Taveuni Forest Reserve and the Ravilevu Nature Reserve as Fiji’s first National Park” (Ministry of Forests - MoF 1988)

The Taveuni National Park was formally recommended by the NLTB, FD, Maruia Society report (Lees et al. 1989) which proposed the Taveuni National Park comprising the Ravilevu NR and the Taveuni FR (after dereservation of the north west section).

The National Environmental Management Project adopted the Taveuni National Park concept, and complete protection for the Taveuni FR (in addition to the NR) became a priority action for the National Environment Strategy (GoF 1993).

The proposed Taveuni National Park comprised the key element of a conceptual heritage and tourism development plan prepared for Taveuni by the NLTB in 1990, and the plan was incorporated into the appendices of the NLTB Tourism Policy Statement for 1990/95.

The Fiji Biodiversity Strategy and Action Plan (GoF 2007) adopted the combined reserves as a National Park and identified the need to combine the then recently created Bouma NHP with the two reserves as a larger National Park.

The combined “three protected area” extension was included in the Taveuni Highlands Important Bird Area – FJ04 (Masibalavu & Dutson 2006), is a designated Key Biodiversity Area (ref xx) and is recognised as a priority forest conservation area (Olson *et al.* 2009).

1.5 CURRENT ADMINISTRATIVE FRAMEWORK

1.5.1 Tenure

The Taveuni Forest Reserve is native tenure which the Government leases from 19 different landholdings belonging to 18 different mataqali residing in nine villages.

The Ravilevu NR is currently Crown Freehold tenure, a part of the Salialevu Crown Grant No 157.

The Bouma NHP is native tenure belonging to 5 mataqali residing in 4 villages.

1.5.2 Protection Status

1.5.2.1 Forest Reserve & Nature Reserve

Nature Reserves and Forest Reserves were originally gazetted under the Forest Act, CAP 150 but these were automatically included in the Forest Decree 1992 – Part III Forest Reserves and Nature Reserves (refer Box 1)

Forest Reserves are reserved for ‘forestry purposes’ – a balance of protection and production dependent on site capability, while Nature Reserves are to be managed for ‘permanent preservation’. Dereservation of both Nature Reserves and Forest Reserves can be carried out by the Minister of Forests alone.

Management of forest reserves and nature reserves

7.—(1) Forest reserves shall be managed as permanent forest in order to provide on a permanent basis the optimum combination of benefits of protection and production of which they are capable.

(2) Nature reserves shall be managed for the exclusive purpose of permanent preservation of their environment, including flora, fauna, soil and water.

(3) Any buildings, fences or enclosures erected in or maintained on a forest reserve or in a nature reserve without the permission of the Conservator shall be deemed to be the property of the State and may be disposed of in such manner as the Conservator thinks fit.

Box 1: Forest Decree 1992 – Part III Forest Reserves and Nature Reserves

1.5.2.2 Bouma National Heritage Park

The Bouma National Heritage is a covenant agreement between ITLB-landowners, Dept Forestry and the New Zealand Government). No lease is in place as it is community-owned and managed. For many years after its establishment it received significant development assistance from the NZ Government.

1.5.2.3 Other Areas

The Taveuni NP would not necessarily be confined to the areas already identified, other appropriate areas of whatever tenure could be considered for inclusion.

1.5.3 Integrated Development Plan

As a component of the National Environment Management Project and the production of the National Environment Strategy a major proposal was prepared by the Department of the Environment 1993 – ‘*Integrated Development Plan for Taveuni*’ which supported the combination of the two reserves and the establishment of the National Park.

1.5.4 iTaukei (Native) Land Trust Board Planning

During 1990-91, NLTB planned environmental tourism projects for Taveuni in addition to the Bouma project, assembling much data covering forest cover, forest policy, land ownership, conservation/heritage/potential tourism attractions, including scenic, natural, recreational, archaeological, historical, and cultural features of interest which were mapped at 1:50,000 scale. A draft Taveuni and Cakaudrove environmental tourism plan for Taveuni was prepared but not completed.

1.5.5 International Listings

1.5.5.1 World Heritage Listing

In 2006, Stuart Chape, an experienced evaluator of World Heritage Sites prepared a report for the Government “*Assessment of the Suitability of Placing the Taveuni Forest Reserve and Ravilevu Nature Reserve on Fiji’s World Heritage Tentative List*”. Getting on the Tentative List is the first step in the World Heritage Site process. The report was extremely positive “...the conclusion of this review is that of all the potential sites in Fiji, Taveuni presents the best prospects for inscription on the World Heritage List as a ‘stand-alone’ site for its terrestrial heritage values”. Another recommendation of the review was “*The Government should give serious consideration to the future tenure arrangements of the existing reserves, with a view to combining the existing forest and nature reserves and Bouma Heritage Park into a large, co-managed Taveuni National Park.*”

For a potential forest World Heritage Site such as Taveuni, the support of the landowners is absolutely critical and the process to reach World Heritage Site status has to involve the landowners and other stakeholders in Taveuni to ensure that they are fully informed and agreeable, and participate in all decisions during what can be a long process. The current project by NatureFiji-MareqetiViti is the very first discussion about ‘National Parks’ and ‘World Heritage Sites’ with the forest landowners of Taveuni.

1.5.5.2 Ramsar Site

Lake Tagimoucia has been identified as a potential Ramsar Site by the National Wetlands Steering Committee (Department of the Environment) and plans are in place to enable formal consultation with the landowners.

2 Taveuni National Park Project - 2012

2.1 BACKGROUND AND OBJECTIVES

The Taveuni National Park Project was funded by the Critical Ecosystem Partnership Fund and spanned 14 months from beginning of November 2011 to end of December 2012. The project was implemented by NatureFiji-MareqetiViti in close cooperation with the Cakaudrove Provincial Office, and in association with the National Trust for Fiji under the auspices of the National Protected Areas Committee (National Environment Council).

In outline, the objectives of the project were:

- 1/. Local forest-owning Mataqali on Taveuni, supported by the Cakaudrove Provincial Council have a well-developed unity of purpose for conservation of Taveuni's unique biodiversity;
- 2/. The landowners are in an informed position on issues relating to conservation and the Taveuni National Park; and,
- 3/. Government's long-held plan for a single protected area of internationally recognised status on Taveuni revitalized and adopted.

2.2 APPROACH

NFMV was keen to ensure that the lessons learned from the establishment of the Sovi Basin Conservation Area would be applied, and, in particular the consultation approach with the landowners (Nawadra and Masibalavu 2003)

As a result of its initial conservation and protected awareness work undertaken on Taveuni in 2009 (Thomas 2010), NFMV was aware that there was an awakening of interest among the landowners in potential conservation opportunities for their landholdings in the Taveuni FR, but also a dearth of understanding of conservation in general and the purpose or function of the Taveuni FR in its current form.

It was considered critical that the landowners would need to be in an informed position to make their own decisions on support or otherwise for conservation and for the proposed Taveuni NP. To accomplish this NFMV would prepare relevant information in the vernacular, organise a series of consultation meetings with each of the involved mataqali, and organise exchange visits with other community-run PAs in Fiji to broaden their experience and horizons.

As the consultations progressed and substantive issues emerged relevant Government departments and agencies were informed and brought into the consultation process. To date those involved have been iTaukei Land Trust Board, Dept. of Lands and Dept of Forests, in addition to the Provincial Office which has participated in all the consultations.

2.3 ACTIVITIES

2.3.1 Field Team Set Up

A project office was set up in the Cakaudrove Provincial Office in Somosomo. The field team leader was Waisele Mataitoga, an elder from Somosomo village, he was supported by a clerical officer and one or two volunteers as recorders during the consultation meetings. The field team had full time use of a 4x4 vehicle.

2.4 ACCOMPLISHMENTS

2.4.1 Project Support – Office and Materials

A project office has been established with the Provincial Office in Somosomo, and this is manned during normal working hours. It has proved popular for people wanting to learn more about the project and it has a place for visitors to sit down and read the materials which the project has produced. These include:

- Taveuni National Park Project pamphlet (English and Fijian)
- Taveuni National Park booklet (English and Fijian)
- Taveuni National Park powerpoint presentations (copies of)
- Stuart Chape's landscape photographs of Taveuni
- Map of Taveuni's terrestrial protected areas (from the National Protected Areas Committee)

2.4.2 Consultations with Landowners of the proposed Taveuni NP

There are 18 mataqali involved in the proposed Taveuni NP together with the State as owners the State Freehold Ravilevu NR.

First Round of Consultations: (22 March – 18 April). All the 18 mataqali were consulted either as individual mataqali or at Bose vakoro. Presentations were also given at the three Tikina Meetings. A presentation at the consultation meetings provided an overview of the proposed Taveuni NP with background information on conservation, ecosystem services, protected area management and tourism development. Materials in the vernacular were distributed, issues arising were discussed and recorded and the mataqali asked to discuss the proposal amongst themselves, come to the project office for further information, and prepare for a 2nd round of consultation in two months time.

Second Round of Consultations: (8-22 May). 13 of the 18 mataqali were consulted individually; five consultation meetings did not proceed for a variety of reasons. These consultations focused on the mataqali's initial reaction to the National Park proposal, and all members were encouraged to ask as many questions as possible. Records were kept of all questions asked (refer Attachment 1). This round of consultations provided marked differences in response between different mataqali. A lot of the discussion wandered, in some cases far, from conservation and the NP proposal, as mataqali unused to a forum of meeting as a group by themselves used the opportunity to raise other issues and grievances. Nonetheless, some very good questioning about the NP proposal and specific issues was received and recorded.

Following the 2nd Round of Consultation, the Tui Cakau was informed of the progress of the project and requested a follow up meeting with the Director NFMV. At this meeting he explained that he had been receiving information on the consultations, that he fully supported the manner in which this was being undertaken, and that he gave his full support for the National Park Project and concomitant tourism development in Taveuni. He requested a three year deadline for establishing the National Park.

Third Round of Consultations: (22nd October – 2nd November). Following analysis of the questions raised during the 2nd Round of Consultations, NFMV gave introductory presentations about the project to iTLTB and Dept. of Forests as there were many questions for these organisations. Subsequently, representatives from both the organisations attended all the meetings and the presence of the representatives and the answers they gave were very well received. The 3rd Round of Consultations took place after the Visit to the PAs of Viti Levu and Vanua Levu (refer 2.4.3) and the general attitude was much more positive than during the 2nd Round of Consultations.

Following the completion of the 3rd Round of Consultations thirteen of the eighteen mataqali have expressed full support to the establishment of the Taveuni NP.

Four of the five mataqali within the Vanua o Bouma have also given their support for the establishment of the NP but with the exclusion of the Bouma NHP. Mataqali Naituku of Korovou, Bouma is the only mataqali reluctant to support the formation of the NP at this point in time. Mataqali Naituku is the largest recipient of income from the Bouma NHP and currently holds the view that the NP will divert tourism interest from Bouma to other parts of Taveuni.

2.4.3 Visit to Protected Areas on Vanua Levu and Viti Levu

The Taveuni Landowners' Capacity Building tour was organized as a component of the consultation phase. Forty landowners from the eighteen mataqali involved in the Taveuni NP project participated in the tour which took place between 29th July – 14th August (refer Susu 2012 – Attachment 2).

The overall purpose of the tour was to broaden the experience and understanding of landowners of the state of conservation in Fiji today by visiting sites and talking to landowners involved in conservation and protected areas. The Roko Tui Cakaudrove accompanied the tour and his presence was very beneficial to the manner in which the visitors were received in both Viti Levu and Vanua Levu.

The opportunity was also taken to hold a meeting with Taveuni NP and other Taveuni landowners resident in Suva and to discuss the NP Proposal.

The tour was well structured with the participants divided into 4 groups and evaluation sessions were held each evening after visiting a site. Each group was then assisted in finalising a report on the tour which was circulated with the intention that it would assist the tour members relay issues that they had singled out from the various sites visited and specific issues which need to be addressed by the respective departments or agencies.

2.4.4 Provincial Council and Tikina Meetings, Government Departments and Agencies, and other Stakeholders.

Presentations on the project and its progress were given at three Provincial Council Meetings (November 2011, May 2012 and November 2012) and at all the Tikina Meetings of the three Tikinas concerned with the NP Project. During the course of the project three progress presentations were given to the Protected Areas Committee and briefings given to Forests Department, Department of Culture and Heritage, Department of Lands and the iTL TB.

2.4.5 Dept. of Forests Presence and Blue Line

The Forests Dept. showed its understanding of the gravity of the encroachment issue and its support for the project with the re-deployment of a Forest Officer during the year. The first task of the Forests Officer was to organise the clearing and marking of the Blue Line – the boundary of the Taveuni FR. The project assisted this by enabling landowners to assist with the demarcation of the boundary of their landholdings and by undertaking fauna and flora observations and monitoring during the time they were in the forest.

2.4.6 Taveuni Tourism Association

Two formal meetings were held with the Taveuni Tourism Association. Initially there appeared to be little enthusiasm for the project, however, towards the end of the project the

Association became very supportive and facilitated the donation through one of its members of office equipment and a computer for the Taveuni National Park Project Office in Somosomo.

2.4.7 American Iguana Coordination, Awareness and Training

Two phases of consultations were held for American iguana awareness and coordination (March 2012, June 2012); to prevent the establishment of populations on Taveuni. These resulted in a consolidated American iguana incursion response plan, developed by villages and business houses on Taveuni.

2.5 OVERVIEW OF THE NP PROJECT CONSULTATIONS AND THE ISSUES ARISING

2.5.1 The Consultations

Embarking on a project involving a large area of land and multiple landowners with a view to obtaining consensus for significant change will always be a challenge in the Fijian setting, and endeavouring to achieve too much too soon will likely be the greatest danger in the long run. The current consultations were organised and undertaken through the Provincial Office by an individual from Taveuni, with a very good knowledge of the traditional fabric of the island as well as current social and development issues. The consultations were planned with no objectives other than to raise the understanding of the landowners about conservation and a proposed National Park so that they have a good level of understanding of what is envisaged, can identify pertinent issues, can participate meaningfully in any decision making in respect of support for the project, and how it might develop. Great care was taken not to raise expectations, though inevitably in some cases there may be elevated ideas of what a NP will bring to landowners and how easily it may be established.

In reality, the consultations should be seen as a pre-feasibility gauging of the potential for a single large conservation area of international standing. In this respect it is clear that there is significant support for the idea of a Taveuni NP, however there are also some significant issues which need to be addressed. The real work of establishing the National Park or equivalent is only just beginning. A very large number of issues were raised and discussed during the consultations (refer Attachment 1 for a summary) many of these are not directly related to the NP project but relate to peripheral issues and especially to issues with government/agencies or differences within mataqali or villages.

The following sections summarise the important emerging issues relating directly to the NP project.

2.5.2 Taveuni's Three Protected Areas Are Already Sufficiently Protected ?

It needs to be acknowledged that the passive protection afforded by the Forest-Nature Reserve legislation, and the covenant in respect of Bouma NHP have been very successful in protecting the respective forest areas to this point in time. Nonetheless there is a common and widespread misconception that 'Forest Reserve' status can be considered as a Protected Area for biodiversity conservation purposes. This is not the case as the record of Fiji's Forest Reserves management ably illustrates. The vast majority of Fiji's Forest Reserves have been converted to mahogany plantations and/or dereserved. The Minister of Forests with approval from the Forestry Board may dereserve a Forest Reserve, the Dept. of Environment, the National Trust of Fiji and the Dept. of Culture and Heritage (World Heritage responsibility) do not have to be consulted.

Further, both Forest and Nature Reserve status under the current legislation is demonstrably unsuited to conservation in the modern era. In this respect the three key points are:

- 1). iTLTB initially attempted to use the FR-NR legislation for Sovi, but found that it was not suitable in respect of landowner traditional rights and development aspirations. As such a new Conservation Lease template has been developed and is now in use. This template has been produced for widespread use where conservation leases are required;
- 2). No right minded donor will provide funds for a Trust Fund for a site administered under the FR-NR legislation (Forests Decree 1992). The particular weaknesses are that the FR is not a protection category and both FR and NR can be de-reserved at Ministerial discretion without consultation.
- 3) Encroachment in the Taveuni Forest Reserve is severe and increasing, the current protection afforded by the Forest Reserve legislation (for whatever reason) is ineffective. To date encroachment has led only to dereservation and exclusion.

There are emerging problems with the administrative structure of the Bouma NHP, not dissimilar to those which have affected the Koroyanitu NHP since the outset, such that the covenant in place at the moment may or may not be suitable in the larger administrative framework of the proposed NP – this is discussed further below section 2.5.6.

Conclusion: A Taveuni NP requires new leasing arrangements and should be administered by the National Trust of Fiji which has the mandate to conserve Fiji's natural heritage.

2.5.3 Why a National Park ?

In 2006 there were 6,555 national parks worldwide that met the criteria recognized by IUCN. There is no single definition of a NP and their tenure and management vary around the world, but the following are the general IUCN criteria:

- They are not greatly altered by human exploitation and occupation, where plant and animal species, geomorphological sites and habitats are of special scientific, educative and recreative interest or which contain a natural landscape of great beauty.
- A minimum size of 1,000 hectares.
- The national government is responsible for legal protection and management.
- Visitors are allowed to enter, under special conditions, for inspirational, educative, cultural, and recreative purposes, and,
- Prohibition of exploitation of natural resources

Today, NPs are extremely well known all around the world and tourists and potential visitors know what to expect when they read about a NP. Many tourists will select their destination on the basis of the presence of a NP nearby.

Fiji has no legislation for NP as such – the Sigatoka Sand Dunes was established by Decree. The current project has used the NP epithet because of its suitability in the circumstances – specifically because of its connection with International Tourism. Fiji's Protected Area Legislation is currently being drafted and is expected to be completed this year. It is expected that National Park will be included as a category

Conclusion: National Park status is clearly appropriate for Taveuni. However, it will need to be more generally discussed and adopted, and, if necessary, await the legislation.

2.5.4 Tenure of the Ravilevu Nature Reserve

Discussion about the Taveuni NP has brought into the open questions concerning the tenure of the Ravilevu NR with landowning groups in Vuna and Lavena claiming part ownership. The Permanent Secretary, Department of Lands has clarified to the project that the Ravilevu NR is State Freehold. As such the NP Project has not entered into any discussions on the issue with claimants.

Conclusion: Settling outstanding issues relating to the tenure of Ravilevu is a matter between the State and the claimants and not the project. Clearly a successful resolution to the claims is important for the project, especially if it is to attract international donor funding for a Trust Fund.

2.5.5 Who is NatureFiji-MareqetiViti ?

This question was asked in Suva by Taveuni landowners resident on Viti Levu, and followed up by other questions relating to NFMV's current and future role in any NP. These questions did not arise in Taveuni where NFMV's role in organising the consultations was clearly associated with the Provincial Office. Nonetheless it is a very pertinent question going forward.

Conclusion: Whilst NFMV can still play a valuable, potentially key role as a catalyst, Government – in some form, or iTLTB or National Trust needs to be seen as the administrative force behind the project.

2.5.6 Bouma National Heritage Park

The Bouma NHP is a covenant agreement between iTLTB-landowners, Dept Forestry and NZ Government. No lease is in place as it is a community-owned and managed initiative. It has received significant development assistance from NZ Government since its inception and still requires National Trust oversight to help in its management. Bouma and to a greater extent Abaca of the 'sister' Koroyanitu NHP, were established with the intention of the developments being community-owned and managed in the wider sense of 'community'. However, in both cases narrow mataqali and even tokatoka interests too over and wide divisions now exist within the communities concerned. Whereas Koroyanitu is barely functional, Bouma continues to attract a significant number of tourists but given divisions within the community is more likely to regress rather than progress and expand in the absence of donor assistance.

Bouma, especially the influential mataqali Naituku, currently believe that the wider NP has little to offer their existing tourism development and may indeed actively harm it by attracting tourists away from Bouma. As such support for the NP is strictly limited or is opposed.

Conclusion: Bouma's lack of support for the NP proposal is an entirely understandable position given their current tourism-leader status combined with the preliminary level of consultation and discussion on the NP so far.

In contrast to Bouma's current position, the Project is of the opinion that Bouma is likely to benefit more from the establishment of the NP than any other area, simply because of its existing, accessible attractions, it is already well known outside Fiji and has twenty years of experience working with tourists. It is extremely well-placed to attract a greater share of a greater number of tourists who would come to a Taveuni NP. However, unless it can raise its standards it is unlikely to compete in the medium and longer term with better managed

attractions which are envisaged will be developed elsewhere in the NP. Further, Bouma is unlikely to expand to its full potential given its current internal conflicts, whereas, an administrative structure not dependent on inter and intra-mataqali relationships as would likely be provided through the NP set up, is much more likely to enable Bouma to reach its full tourism potential.

This is a clear example where a great deal more consultation is required.

2.5.7 Leasing of the Taveuni Forest Reserve

It was a surprise during the consultations to hear from a good number of the landowners that they were completely unaware of the status of the Forest Reserve as being leased and an annual rental being forthcoming. The presence of the iTLTB and Forests Dept during the 3rd round of consultations enabled questions to be directed to and answered by the relevant Department/agency. At this stage it is not clear whether this issue is now dealt with – it is likely that it has become more of an internal mataqali issue now.

Conclusion: That the Taveuni FR is already formally leased is of major positive assistance to the NP plans, firstly with respect to the very lengthy process of subdivision and issuing of leases, and secondly in that it means the State is already committed to a revenue stream into the NP.

2.5.8 Encroachment in the Taveuni Forest Reserve

There is serious encroachment in several parts of the Taveuni Forest Reserve. In the past encroachment of this kind but not extent has occurred and the precedent here shows that encroachment leads to dereservation. The redefinition of the FR Boundary (the Blue Line) by Forests Dept. has confirmed this. Some landowners are part of the encroachment, others are fuelling it by extracting rental from new and existing non-landowner farmers. Many landowners are not happy with it at all. As one landowner asked during the consultations:

“We the mataqali members of Nacivaciva have a beautiful forest up in the reserve which is mainly Damanu. Lately the Indian Farmers who have just migrated from Labasa began to fell this Damanu. What sort of assistance can we have ?”

Conclusion: Protection/conservation is not Forestry’s core business and this needs to be recognised at the outset. Despite the Taveuni Forest Reserve being by far the largest forest area directly under the responsibility of the Forests Dept., for nearly all of the last decade there has been no Forest Officer stationed on Taveuni. When resources are stretched, their priorities lie elsewhere.

The project believes that the encroachment in the Taveuni FR is going to be solved not by direct application of the legislation but by discussion between the relevant parties – in particular the landowners, the Provincial Office and the Provincial Administration with the assistance of Dept of Forests and Dept of Agriculture. It should be noted that the issue of unsustainable agriculture is being led by NGOs – the SPC and Teitei Taveuni. The solution must also look to the future, in particular Forests Dept. role will pass to the National Trust or to whichever organisation it is decided will lease and administer the Taveuni NP.

2.5.9 Administrative and Financial Arrangements for the NP

Understandably many of the first questions relating directly to the NP were about how it would be administered and how would landowners benefit. There was no attempt to answer these questions directly during the consultations other than to say that these would be the subject of further discussion and approval by the landowners themselves. Discussions would

then revolve around examples of existing PA arrangements elsewhere in Fiji – Sovi, Waisali, Tavuni Hill Fort, Wailotua Cave, Sigatoka Sand Dunes etc. and, indeed, Bouma NHP itself.

If there is to be a sense of common purpose in moving the NP project forward, then the NP landowners will need to meet together to discuss and resolve issues and make decisions. Now that the overall information about conservation and the NP Project is well distributed, single mataqali meetings are unlikely to promote collective decisions on issues and the future of the project but are more likely to revolve around individual mataqali issues and advancement.

Conclusion: Except where there are specific issues – Bouma, Ravilevu etc. individual mataqali meetings on the NP need to be replaced by a forum where landowner representatives can address issues and make decisions in a collective manner as the project moves forward. Representatives on the forum would be charged with relaying information and decisions back to the villages. This will need to be founded in the Provincial Office.

2.5.10 Hydropower Development

During the consultations, concerns were raised in several venues about the affect that the Somosomo hydropower scheme might have on the forests and on plans for a NP. The plans are well advanced and while they precede the current project's interest in the conservation values of Taveuni's upland forests, government departmental and NBSAP recommendations for a National Park or similar have been in existence for over 20 years. The EIA that has been undertaken of the power scheme is entirely deficient specifically because:

1. It was undertaken prior to any design either of the plant or infrastructure (specifically road);
2. The Terms of Reference either ignored the elevated conservation values and existing NBSAP plans or made entirely insufficient attention to them; and,
3. The local and public consultation was deficient.

The access road put into the site was built before the EIA was undertaken and without any design whatsoever. For much of its length within the forest it comprised little more than a box drain.

Conclusion: Given 'environmental management' on the project to date combined with the extremely large environmental footprint of several of the Chinese-contracted infrastructure projects (the nearest being the upgrade of the Buca Bay road), there is certainly justification for everyone being extremely worried about the manner in which the hydropower is going to be constructed.

There is no *a priori* reason why a mini-hydropower development should conflict with a PA or a NP, it is merely a question of scale, design and environmental management. Further, a well-designed and constructed access road to the hydro offtake site could be an important access route into the future NP.

2.5.11 State of Biodiversity Knowledge

It was readily apparent during the 2009 awareness programme and reinforced during the current one of the poor level of awareness of Taveuni's biodiversity, especially its endemic and threatened forms amongst the landowners. To counter this, there was a clear interest shown and ready show of pride on learning about Taveuni's special biodiversity attributes. The interest in undertaking boundary marking and biodiversity monitoring during the project was evident among those mataqali who participated.

Conclusion: There needs to be a greater understanding and awareness of Taveuni's biodiversity, especially amongst the youth, to facilitate support for the NP.

3 Establishing the Taveuni National Park - The Next Steps

3.1 GOALS AND PRINCIPLES OF MANAGEMENT

It is not premature to introduce clear and publicly stated principles for the management of the Taveuni NP in the lead up period because they provide an unambiguous statement of management intent which facilitates decision-making during the lead up period

3.1.1 Goals

It is recommended that management of Taveuni NP has two goals:

- To make the Taveuni NP effective in conserving indigenous biodiversity and its natural ecosystem services; and,
- To make the landowners of the Taveuni NP equitable beneficiaries of the conservation of a national asset.

3.1.2 Principles

The following principles are recommended for the management of the Taveuni NP:

1. **Conservation of indigenous biodiversity and ecosystem functions is to be the highest management priority.** This is a simple statement which reflects the original designation of the site and its status as one of, if not Fiji's most important natural heritage asset.
2. **Landowners are equitable beneficiaries of the designation of the site and any management interventions.** The intent here is to ensure that the landowners are equitable (= fair) beneficiaries of the conservation of a national asset, and that the landowners are equitable beneficiaries of any interventions or developments with economic implications (tourism, hydro etc.).
3. **Management discussion and decision-making is to be transparent and accountable.** This is to ensure that decision-making respects the multi-stakeholder requirements of the management of a national asset, as well as the landowners as equitable beneficiaries.
4. **Capacity in all relevant fields are developed at both national and local levels.** This is a commitment to human resource development.

3.2 PROTECTED AREA MODEL

3.2.1 Significance of Taveuni

There is little doubt that Fiji's two most important areas of terrestrial biodiversity are the large wilderness areas comprising the Sovi Basin and the forests of Taveuni.

In 2006, Stuart Chape, an experienced evaluator of World Heritage Sites assessed Taveuni's prospects for the World Heritage Tentative List in a report prepared for the Government (Chape 2006). Getting on the Tentative List is the first step in the World Heritage Site process. The report was extremely positive "*....the conclusion of this review is that of all the potential sites in Fiji, Taveuni presents the best prospects for inscription on the World Heritage List as a 'stand-alone' site for its terrestrial heritage values*". Another recommendation of the review was "*The Government should give serious consideration to the future tenure arrangements of the existing reserves, with a view to combining the existing forest and nature reserves and Bouma Heritage Park into a large, co-managed Taveuni National Park.*"

There has been little discussion as to suitable administrative models for Fiji's terrestrial PAs and there is no clear successful precedent in Fiji at present. Creating a Trust Fund¹ as the financial driver for a single protected area has been seen as the best option for Sovi but it is very questionable as to whether every PA, even important PAs, could or should all have a stand-alone Trust Fund.

This is a question that needs further discussion, however at this stage, given Taveuni's biodiversity significance, it is as likely as Sovi to attract international donor funding for a Trust Fund. It has two important additional attractions in this respect:

- 1) Infrastructure and tourism development on Taveuni is already well-developed and in a ready state to respond to and benefit from the flow down effects of an internationally recognised NP; and,
- 2) Government is already leasing the Taveuni Forest Reserve or >70% of the area of the NP and as such a significant portion of the recurrent funds required for the administration of the NP are already committed.

3.2.2 Learning from the Sovi Experience

The leasing of the Sovi Basin Conservation Area to the National Trust for Fiji in 2012 was the culmination of over 20 years of work on the part of many organisations and individuals, landowner patience notwithstanding. A great many lessons were learned along the way – these have not yet been reviewed and recorded as they should be. However, those involved are well aware of many of the most important lessons which if applied elsewhere would minimise the difficulties and duration of the process. Important amongst these were:

- Not to rely on off-shore based organisations and consultants but for the Government to take ownership of the project;
- The crucial need within government for a "Project Task Force or Steering Committee" with an appropriate administrative setting with correct mandate and stakeholder involvement;
- Project momentum needs to be maintained;
- Ensure there is no disconnect between the 'planners' – Suva authorities, consultants, NGOs and what the landowners understand is happening or want to know;
- Following correct protocols when working with government agencies;
- Following correct protocols in landowner consultation – approaches to be made through the Provincial Office by teams with official and recognised sanction;
- Landowner consultations cannot be rushed. They require a structured participatory process carried out over time so that all issues are adequately discussed and addressed;
- A forum for the landowners to have the opportunity to sit down and discuss issues and aspirations amongst themselves, and also with other stakeholders;
- Landowners living out of the village, especially those in employment elsewhere in Fiji, are extremely influential and often have different viewpoint from those in the village – consultation with them is vitally important;

¹ The establishment of a trust fund in order to meet lease (or part of) and royalty compensation payments and management of the NP

- Very transparent dealings in respect of any Trust Fund establishment with mechanisms to ensure appropriate awareness and understanding within both the government agencies and the landowners²;
- The inapplicability of the Forest Decree 1992 legislation for modern conservation purposes, especially in respect of equitable lease arrangements.
- The biodiversity surveys conducted in the Sovi basin and the involvement of the landowners contributed significantly to the consultations and awareness campaigns.
- While a lot of mistakes were made, the funding and expertise provided by Conservation International was pivotal from beginning to end in enabling Sovi to become a formal Protected Area. It would never have happened without them.

And more lessons ?.....

3.3 ADMINISTRATION

3.3.1 Lead Up Administrative Arrangements

To date the project has been led by NatureFiji-MareqetiViti under the auspices of the National Protected Areas Committee, and all landowner consultations have been undertaken in conjunction with the Provincial Office. There has been very limited input from other stakeholders. As discussed above this was purposeful (refer section 2.5.1).

Given the current interest and understanding of the landowners, and an understanding of the emerging issues, to take the process forward requires a more formal and inclusive administrative structure – nominally the Taveuni NP Steering Committee, on which the relevant Government Departments and agencies and other stakeholders would be represented. Government – in some form, or iTLTB or National Trust needs to act as the sponsor/secretariat for the Taveuni NP Steering Committee (refer section 2.5.5). Composition of this body and how and where it is located needs to be decided. The structure used for Sovi needs to be looked at, but may not be applicable given that the site is on Taveuni rather than an hour's drive out of Suva. Potential members include:

- Provincial Office,
- iTLTB,
- National Trust of Fiji - PAC
- Lands Department,
- Forests Department,
- Culture & Heritage Department,
- Agriculture Department,
- NFMV
- Landowner representatives
- ??District Office
- ??Taveuni Tourism Association

The function of Taveuni NP Steering Committee will be:

- 1) To act as a forum for the relevant Taveuni NP stakeholders;

² The Sovi trust fund has two broad elements. The first is to establish a trust fund whose principal can be managed in order to provide revenue/dividend sufficient to be able to meet lease and royalty compensation payments and management of the conservation area. The second element then attempts to deal with the distribution and use of the funds that are to be paid to the landowners. The mixing up of the two elements that really are quite discrete was the cause for much of the confusion and concern about the trust fund (Nawadra and Masibalavu 2003).

- 2) To confirm, or otherwise the feasibility of the Taveuni NP;
- 3) To set priorities and direction for Taveuni NP implementation/consultation activities; and,
- Other ?? What is the Steering Committee's relationship to PAC ??

3.3.2 Taveuni NP Landowner Forum

Except in individual cases, direct consultation with individual mataqali is not longer warranted and will lack transparency. A Taveuni NP Landowner Forum needs to be set up so that the landowners have the opportunity to sit down and discuss issues and aspirations amongst themselves, and also with other stakeholders.

3.3.3 Maintaining the Momentum

The project has considerable support and momentum on Taveuni – this is a great start, but the greatest challenge will be to maintain that momentum. It is very difficult to imagine how a Steering Committee based in Suva comprising busy government and other agency stakeholders will provide the necessary momentum. This combined with a pressing shortage of funds likely to be made worse by the rehabilitation requirements of TC Evan may prove problematic.

However, the GEFPAS Project has funding and part of this is already allocated for Taveuni. In light of the project's momentum to date, the authorities need to examine the priorities which the GEFPAS funding should be used for. The opportunity presented by the Taveuni NP now is highly significant but the window of opportunity for a project of this kind can close very quickly.

NatureFiji-MareqetiViti has proven it has a team on the ground which can provide a catalytic role supporting PAC and the Taveuni NP Steering Committee. However, in the absence of funding the team will have to be disbanded and the office on Taveuni closed at the end of February 2013.

3.3.4 National Park Administration

A suitable administrative structure needs to be created for the National Park, preferably some form of co-management with the landowners, however, the shape of this needs to evolve in discussion with the landowners.

3.4 RECOMMENDED NEXT STEPS

3.4.1 Taveuni NP Steering Committee

Refer section 3.3.1

PAC convene a meeting with all relevant government and other stakeholders to put in place the nominal Taveuni NP Steering Committee with appropriate institutional setting.

3.4.2 Landowner Forum

Refer sections 2.5.9, 3.3.2

A landowner forum is needed. Meetings should be convened by the Provincial Office and could be held at the Somosomo meeting house or rotated around the Tikina involved. Membership and frequency of meetings need to be decided – the latter perhaps quarterly for the next year. The forum itself will need to be serviced with pocket meetings and information dissemination, the existing NP Office should be retained for this purpose and servicing the forum would be undertaken by NFMV.

3.4.3 Fiji's World Heritage Tentative List

Refer sections 1.5.5.1, 3.2.1

Placing Taveuni on Fiji World Heritage Tentative List as recommended by Chape (2006) is clearly a priority as it demonstrates at all levels, nationally and internationally, that Fiji recognises the potential of the site.

Placement of a site on Fiji's World Heritage Tentative List does not place the Government in any irrevocable position, on the contrary it opens a funding stream for the detailed assessment of such sites which enables the studies and detailed consultation with landowners and other stakeholders to begin. It is probable (at least hopeful) that if Taveuni's forests were placed on the World Heritage Tentative List, the Environmental Impact Assessment of the Somosomo Mini-Hydro would have been undertaken with greater scrutiny and wider consultation by the authorities concerned.

Fiji can and should place all those sites shown to have potential for World Heritage listing on its Tentative List. However the evaluation of such sites should be by highly experienced personnel in the form of a detailed report such as Chape (2006).

3.4.4 Bouma National Heritage Park

Refer section 2.5.6

The issue at Bouma is an understandable one and is a clear example of where a great deal more consultation and discussion is required in a broader setting of the Provincial Office together with other government agencies and sectoral expertise. Discussion should be by no means confined to inclusion or exclusion of BNHP in any proposed NP, if necessary differential administrative arrangements can be looked at, amongst others.

3.4.5 Ravilevu Nature Reserve

Refer section 2.5.4

The Ravilevu issue will only be settled through proactive discussions between the Lands Dept. and the claimants with the Provincial Office providing local oversight and assistance. The Taveuni NP status going forward may provide a positive contribution to settling outstanding differences.

3.4.6 Leasing Arrangements

Refer sections 2.5.2, 2.5.7

The single most important issue going forward with the NP proposal is to determine the appropriate leasing conditions. The Forest Decree legislation has been found to be unusable for a conservation lease in the modern international context. iTLTB will need to examine this and apply what it has learned from the Sovi Basin Conservation Area.

One of the challenges will be the quantum of the lease. At Sovi, the lease is ultimately based on foregone timber royalties. The timber resources in Taveuni are very small by comparison with Sovi and so if the lease is to be calculated in a similar manner there will be a significant difference between the two sites which will be an issue requiring consideration.

3.4.7 Forest Reserve Encroachment

Refer section 2.5.8

Encroachment in the Taveuni FR is a serious on-going issue (and a minor issue in the NR). That there has been no effort to curtail it since the last period of de-reservation – early 1990s has only served to fuel an increasing trend. The need for a successful resolution to the encroachment issue is important not just to the Taveuni NP proposal moving forward, but to Taveuni as whole which is confronted with serious issues of sustainable agriculture, informal immigration and land leasing, apart from the contravention of the Forest Decree legislation.

Resolving the encroachment issue will not be solved by Forests Dept. alone attempting to apply the legislation, that is a certainty. The landowners will be the key to the resolution, and while any resolution will not be driven by the Taveuni NP proposal, the landowners will, in the current circumstances, surely want to know what the Forest Reserve has to offer them. The Taveuni NP discussion has already moved landowners to think about the encroachment issue which they are well aware of.

A more fruitful approach to the issue which has already been suggested by some landowners is to agree on a landowner-implemented reforestation scheme for the encroachment areas with timber, fruit or other trees. If integrated into the overall Taveuni NP process, this will have the benefit of maintaining momentum of the current work and associating the NP project with proactive beneficial action. Further, it is much more likely to attract external support, than any attempted strict application of the law.

Creating the right forum and circumstances for the resolution will require careful consideration. The Provincial Office will need to take the lead with the Forests Dept., and they will need to determine which support organisations are required.

3.4.8 Trust Fund

Refer section 3.2.1, 3.2.2

Although it remains to be discussed and decided, it would appear likely that a Trust Fund is a potential and internationally-proven mechanism through which to channel funds required for annual payment of the lease, timber royalties and management of the NP.

Unlike Sovi, financing the Taveuni NP will not have to start from a position of no funds, because the State is already paying 'lease' monies to the landowners of the Taveuni FR and whether or not this would best be capitalised in the Trust Fund or continue to be paid in parallel would need careful consideration.

The Trust Fund experience, on-going for Sovi, needs to be reviewed with a view to incorporating any lessons learned for the prospective Taveuni NP Trust Fund. One of the clearest 'lessons learned' was that to avoid confusion and mistrust – there must be very transparent dealings in respect of any Trust Fund establishment with mechanisms to ensure appropriate awareness and understanding within both the government agencies and the landowners.

Undertaking such a review should be part of a larger review of the role of Trust Funds and/or one larger National Conservation Trust Funds to assist the funding of protected areas in Fiji. PAC would appear to the organisation mandated to organise this.

3.4.9 Somosomo Mini-Hydropower

As noted in section 2.5.10, the Somosomo Mini-hydropwer development is potentially beneficial to the Taveuni NP because it can provide a good access into the NP. To achieve this will require careful design and a high standard of environmental management of the construction process.

The environmental assessment process was deeply flawed, this combined with the very poor environmental management standard of most Chinese infrastructure construction in Fiji at present, provides no confidence that anything different will occur in an area which is potentially a World Heritage Site. If Fiji is unable to enforce sound environmental management during the construction of the Somosomo Mini-Hydropower project, then it will be a clear indication to the world, that it is not going to be able to manage a World Heritage Site and it cannot keep its existing commitments to the several conventions it has signed on biodiversity conservation. It is a clear test case.

It is presumed that no construction of the Somosomo Mini-Hydro can take place until the site has been de-reserved by the State. This process should enable the environmental assessment and any construction environmental management planning to be reviewed. PAC should be take the lead with the Dept of Environment to enable this to happen.

A sound construction environmental management plan needs to be put in place and this should require monthly audits by an independent environmental specialist representing PAC and the landowners, reporting to the Environment Department and the Provincial Office.

3.4.10 Other Stakeholders

In addition to the landowners, there are many other stakeholders on Taveuni with an interest in a National Park. Some of these have already been consulted, in particular the Taveuni Tourism Association which after a slow start is now showing great interest in the proposal and has offered its assistance.

Other important stakeholders have not yet been contacted or involved about the proposal but need to be informed, these include non-landowners throughout the island and the many freehold owners. The Naqara commercial community needs to be informed, some of the illegal activities within the FR are instigated through this section of the community (i.e. timber extraction and tourist visits – without landowner permission).

There is a need also to have consultations with those ‘leaseholders’ whether formal or informal who are farming adjacent to the Blue Line to stem further encroachment.

References

- Chape, S.A.C., 2006. *Assessment of the Suitability of Placing the Taveuni Forest Reserve and Ravilevu Nature Reserve on Fiji's World Heritage Tentative List*. Unpublished Report for BirdLife International Pacific Programme, Suva.
- Dunlap, R. & Singh. B. 1980. A National Parks and Reserves System for Fiji. National Trust-World Wildlife Fund, Suva.
- GoF, 1993. *The National Environment Strategy: Fiji*. Government of Fiji. IUCN - Government of Fiji, Environment Unit, Ministry of Housing and Urban Development, Suva.
- GoF. 2007. Fiji – Biodiversity Strategy and Action Plan. (Draft endorsed by Cabinet in 2003). Department of the Environment, Suva.
- Lees, A., Weaver, S., M.Bellingham & A. Davis. 1989. *A Representative National Parks and Reserves System for Fiji's Tropical Forests*. Draft prepared for the Fiji Native Land Trust Board, Ministry of Forests, Ministry of Tourism and National Trust for Fiji. Maruia Society Policy Reports ser. No. 9. 110 pp. 4 appendices, 5 maps
- Masibalavu, V. & G. Dutson. 2006. *Important Bird Areas in Fiji: Conserving Fiji's Natural Heritage*. BirdLife International, Suva.
- MoF. 1988. Proposed Organisation Development Plan 1988-1998. Ministry of Forests, Extension Division for Conservation, Environmental and Parks Service, Suva.
- Nawadra, S. and V.Masibalavu 2003. *Sovi Basin, Independent Review*. Unpublished Report, Conservation International.
- Olson D, Farley L, Patrick A, Watling D, Tuiwawa M, Masibalavu V, Lenoa L, Bogiva A, Qauqau I, Atherton J, Caginitoba A, Tokota'a M, Prasad S, Naisilisili W, Raikabula A, Mailautoka K, Morley C, Alnutt T. 2009. Priority forests for conservation in Fiji: landscapes, hotspots and ecological processes. *Oryx* 44:57-70.
- Susu P., 2012. Taveuni Landowners Capacity Building Tour, Vanua Levu, Viti Levu, 29th July – 14th August 2012. Unpublished Report. NatureFiji-MareqetiViti Report # 2012/19, Suva.
- Thomas N. 2009. Strengthening Taveuni's Protected Areas: A Conservation Awareness Campaign. Unpublished Report. NatureFijiMareqetiViti Report # 2009/08, Suva.
- Tuikoro, U. 1984. Forest Inventory – Taveuni Forest Reserve and Nature Reserve. Unpublished Report, Forests Department, Suva.

ATTACHMENT 1

**RECORD OF QUESTIONS ASKED IN THE SECOND ROUND OF
CONSULTATIONS**

(MAY 8-22 2012)

REPORT OF QUESTIONS ASKED DURING THE
2ND ROUND OF LANDOWNER
CONSULTATIONS

TAVEUNI NATIONAL PARK PROJECT
May 2012



Waisale Mataitoga
Site Officer.

Second Phase of Awareness Meeting
Report on 2nd round of Workshops

Project Id: MV27 – Taveuni CEPF
NFMV Staff : Waisale Mataitoga, Ana Maria

Summary:

The second round of the second phase workshop was concluded on the 22nd of May at Lovonivonu Village. As with the first round of workshop, there were constraints faced which include internal differences within the mataqali's, communication breakdown with the Turaga ni Koro's and leadership differences which will need to be addressed before proceeding with the second half of the year programme.

1. Workshop Details:

A.

<i>Date</i>	<i>Village</i>	<i>Mataqali</i>	<i>Attendance</i>
08/05/2012	Lavena	Qali Matakuro	60

Comments:

Majority of those in attendance were members of the Matakuro clan in comparison to the other mataqali – Qali.

The tone of their questions is focussed on the Ravilevu Nature Reserve. Their main concern and worry is the repercussion this project might pose to the existing Lavena Eco Tourism project. They need re-assurance.

Like the other workshops questions, they are translated and are sent on to the NFMV for analysis and answers.

Questions raised by the two mataqali.

A1 Mataqali Matakuro

Group 1:

1. What benefit would it be to us if all Reserved Lands are converted into one Taveuni NationalPark.
2. Mataqali Matakuro has not been receiving its lease money for a long time. Can you explain why?
3. Why is Ravilevu a Freehold land when the traditional owners still exist?
4. Why couldn't Ravilevu be returned to its traditional owners?
5. When all Reserved Land becomes the Taveuni National Park, how will it be organised.
6. It seems that this project or development will belong to the whole of Taveuni. What benefit will the future generation reap?

Group 2:

1. Why are you trying to establish the Taveuni National Park when already in existence is the Bouma National Park?
2. Why the bulk of Lavena Land is in the Forest Reserve?
3. Why are we not receiving any lease money from the Forest Reserve? And where is that money directed to?
4. We are hesitant to agree to the combination of the Taveuni National Heritage Park because we feel that we the land owners will be totally denied.
5. Can this Reserved Forest money be a source of sustainable income to the future generation?
6. Why are we the landowners restricted to set foot on the Ravilevu Reserve?

Group 3:

1. I think the Taveuni National Heritage Park will affect the flow of tourists to our Bouma National Heritage Park, don't you think so?
2. We feel that Taveuni National Heritage Park can be a threat to our tourist attraction.
3. We own different proportion of land on the Taveuni Forest Reserve, how can we be sure of getting the correct due for that Reserved Land?
4. There was an agreement signed by the traditional owners of Ravilevu and the Government involving of the establishment of a Trust Fund, where has that fund gone to?
5. What would happen to this project if we disagree to your terms?
6. Why are we the landowners considered the last in this project?
7. From previous experiences, we have seen that communally owned project does not always run well, some corrupt people always benefit more than others, how can this be avoided?
8. Can the Taveuni National Heritage Park be opened to local people?
9. It seems that your organisation has been negotiating this project for so many years, why were we not informed?
10. We understand that Ravilevu is a Nature Reserve, what exactly is the meaning of this term "Nature Reserve"?

Group 4:

1. There are 18 mataqali who are traditionally the owners of the Forest Reserve, can we all be accessible to these Reserves?
2. How can the money from this Taveuni National Heritage Park be equally shared?
3. When did the change of Ravilevu's name to Vuna District take place?
4. Can we negotiate the money issue first before giving our consent?
5. Can the agreement signed in 1914 be revised again?
6. How will the different villages benefit from this project?

7. Taveuni originally was divided into two districts only Bouma and Vuna, when did Cakaudrove become part of Taveuni?

Group 5:

1. Why have the NLTB stop the lease money for the Forest Reserve?
2. How did Ravilevu become a Freehold land? Who gave the approval?
3. Why are we restricted to set foot on the Ravilevu Reserved Land?
4. Can the Ravilevu Nature Reserve be returned to the two mataqali that originally owned it? (Matakuro and Salialevu)
5. Why is it that the Ravilevu Nature Reserve has no lease money?
6. How is it that the RNR belongs to two mataqali?
7. Which of the two mataqali is more eligible to the Ravilevu Fund.

B] Mataqali Qali:

1. How will this project be financed if we give our consent?
2. What are the phases of this development?
3. Is it possible to construct and upgrade roads leading to the reserves?
4. How can the mataqali members be deeply involved in this project?
5. If we give our consent, who will police the encroaching farms and hunting of wild pigs in the protected area?
6. If the land is protected such activity should be prohibited, is that so?
7. What is the Governments contribution to this project?
8. What NGO is the financier of this project?

B.

<i>Date</i>	<i>Village</i>	<i>Mataqali</i>	<i>Attendance</i>
09/05/2012	Qeleni	Nacivaciva Naqeru	30

Comments:

As mentioned before, Qeleni is proving to be a difficult village to work with. This is due to the absence of the eligible leader or Turaga ni Mataqali.

An attempt to discontinue the workshop happened again. Meeting time had to be re-scheduled three times in a day. We made two trips, on the second trip we assumed everything was ready, but to the contrary. We waited for 4 hours before starting. A very negative attitude from the villages.

The Turaga ni Koro seems to have no authority to convene this meeting. On the other hand, once the meeting started the 30 participants were lively and interested.

Question Raised:

1. How will the money be distributed when this project operates? How much will be distributed to the mataqali?
2. Will the whole population of Taveuni benefit from the project?
3. How do we identify the Blue Line?
4. Who will be responsible in the day to day operation of the TNP?

5. What is the acreage of land belongs to the mataqali Naqeru?
6. Are we the mataqali members responsible for our own land area in terms of operation?
7. Who is responsible in maintaining the 180 sign board in Waiyevo?
8. We the mataqali members of Nacivaciva have a beautiful forest up in the reserve which is mainly Damanu. Lately the Indian Farmers who have just migrated from Labasa began to fell this Damanu. What sort of assistance can we have?

C.

<i>Date</i>	<i>Village</i>	<i>Mataqali</i>	<i>Attendance</i>
14/05/12	Korovou, Bouma	Vidawa Naituku	43

Comments:

Outwardly, the two mataqali appear to be friendly, but during the discussion sessions differences surfaced. Looking back at the initial stage of the BNHP, the whole vanua of Bouma was deeply involved and everyone had taken it upon themselves that the project would be communally owned for they had all contributed in building it. When the money started to roll in, the differences began. Mataqali Naituku which has the most land, developed a self-centered attitude. The rift has widened and deepened over the years. However, only a small group of the Naituku clan are making the decisions. It has got to the extent that the Turaga ni Mataqali is sometimes denied and bypassed in decision making. The fear that this could happen again with the establishment of the TNP is a sad thought. Differences need to be addressed at source.

Questions Raised:

1. How will this project be financed if we give our consent?
2. What are the phases of this project?
3. Is it possible to construct and upgrade the road leading to the Reserved Land?
4. How can the mataqali members be deeply involved in this project?
5. If we give our consent who will police the encroaching farmers and hunting of wild pigs in the protected area?
6. If the land is protected such activity should be prohibited, is that so?
7. What is the Governments role and contribution to this project?
8. What international NGO is the financier of this project?
9. What will be the future of the BNHP if it is going to be converted to TNP?
10. Can this project be implemented only in areas which are not part of the BNHP?
11. Why and what else do you want to protect and reserve when all these land are already protected by the Government and BNHP?
12. What will be the future of the reserve forest if it's going to be TNP?

13. What assistance can you give to the forest known to be destroyed already?
14. Will this project include the protections of Rivers and sea?
15. What will happen to the name Bouma National Heritage Park if the combine reserves be known as Taveuni National Park?
16. Why should it be called the Taveuni National Park when most of the special species of plants and birds are only found here in Bouma?
17. What has happened to the lease money for the Forest Reserve, it has never been paid to the mataqali Vidawa?
18. What is the reason for combining all the reserve land and protected areas with the BNHP?
19. What would happen if we do not give our consent to the amalgamation of all the Reserve land to be TNP?
20. We had been keeping our environment for quite sometimes, what else is there that you want to do?
21. We of Bouma have the most acreage of land on the Taveuni FR, why should it be combined with the others.
22. What is the objective of having a TNP?
23. What Prosperity there is in reserving our Natural Resources?
24. What is the meaning of the name Taveuni?
25. Who will benefit if we protect and reserve our Environment?
26. Whose voice and opinions should be considered in this project?
27. What is the meaning of Poverty in a prosperous environment?
28. Please clarify the differences between a rich life and a prosperous life.
29. Would it be possible that archaeologists be engaged to restore our historical sites and historical base?
30. Why is it that NLC does not pacify us but only bring in more confusion?
31. Can our Traditional Base and historical war forts be protected?
32. We have two mataqalis in here, one of them has no land in the BNHP. How can they benefit from this project?
33. Will this project affect our current system of running BNHP?
34. Why isn't the Government involved in this workshop?
35. We suggest that the BNHP remain as it is and only use the Forest Reserve up in the blue line as TNP.
36. Who will be responsible in distributing equally the fund gained from this TNP?
37. Can we harvest trees for logging and housing?
38. Doesn't the TNP contradict the NLTB policy?
39. How will the size of land reserved affects the monetary benefits?
40. Can this project provide employment for the mataqali members?
41. If combined will it be a source of income to us?

D.

<i>Date</i>	<i>Village</i>	<i>Mataqali</i>	<i>Attendance</i>
15/5/12	Tavuki	Vusaratu	30

Comments:

This second attempt of workshop is focussed on the chiefly mataqali Vusaratu. In attendance were 10 elderly male and female in the 50 years over group, and 20 young people. The workshop had to be convened at 7.30pm to be convenient to everyone.

Message of the workshop was well received. Participants were keen to listen and were responding positively.

Feedback questionnaires are indicative of their support for the project. However their questions to the workshop conductors require clarifications to issues that are not so clear to them. All questions posed were translated to English and are being forwarded to NFMV to be answered by relevant departments.

Turaga ni Koro's organisation for the workshop is highly appreciated. Tavuki village so far has shown the depth of knowledge on conservation already acquired from previous workshops.

Questions Raised:

1. How will the landowners be the beneficiaries of this project if approved?
2. What are the phases of this development?
3. Can the road to the Forest Reserve first be improved before proceeding with the project?
4. What assurance can we be given to confirm that the mataqali members will be deeply involved in this project?
5. How can we be more vigilant in protecting the Forest Reserve from the wild pig's hunters and encroaching farmers?
6. What is the role of the Government in this project?
7. What NGO is supporting and financing this development project?
8. What agreement is involved in signing the bylaws of this project?
9. Which of these groups will run the TNP, the landowners, government or the NGO?
10. What adversities would we face if we disapprove to the idea of combining all the three Reserved Land into the TNP?
11. What advantage would we get if we say to the formation of the TNP?
12. Can we sight the draft of the terms and condition of combining all the Reserve Land on Taveuni before the final approval?
13. Does this TNP means marketing or advertising Taveuni to the world?
14. How much division will the profit from the TP be divided into?
15. What percentage of the fund will go to the landowners?
16. If we want to advertise some specialities from our side of the Forest Reserve, will we be doing it ourselves or will the administrators of the TNP do it for us?

17. The TNP will be a fantastic idea if only the landowners benefit the most from it.
18. Is the objective of the TNP Godly?
19. When the landowners approve of the Taveuni, will the authority to cut down trees for their housing be still given to them?
20. How will the profit from this TNP be divided amongst landowners?
21. Can the boundaries of our land be surveyed?
22. What would happen if two mataqali own the same Forest Reserve?
23. Will the landowners be victimised if they do not give their consent to the formation of the TNP?
24. What would happen if there is a division within the mataqali?
25. We have got a lake on our land, and people go up there to see, but we do not get anything from it, why is that?

E.

<i>Date</i>	<i>Village</i>	<i>Mataqali</i>	<i>Attendance</i>
22/05/12	Lovonivonu	Valelevu	20
		Cakaudrove	7
		Lawaki	5

Comments:

In attendance were 4 elderly and 28 young people.

This is the first round and second round workshop together for this group. The questions raised and comments in the evaluation forms indicated their attitude towards the project.

There could be more mataqali members in attendance. If there are any differences, I hardly see it but as usual, when things get deeper it will surface. A clear indication of who is the Turaga ni Mataqali is something that has to be recognised and helps establish the progressive work. This is something we have to consult with the Provincial Office.

Questions Raised

1. Is it possible to have as many workshops organised on the topic Nature Reserve and Conservation?
2. Can we be given the freedom to visit the Reserve land on our island?
3. How is a PA or Nature Reserve in our village funded?
4. When the Nature Reserve is surveyed there should be one mataqali member to accompany them, can that be done?
5. How are you paid when you go around conducting workshops in all villages on Taveuni?
6. If we want to assist you can we make an application to your office?
7. If we want to go with you on this trip to Viti Levu, who will fund our trip?
8. Can we establish an Eco Tourism project in Lovonivonu?

9. How much lease money should the mataqali Valelevu get from the Taveuni Reserved Forest?
10. Where on Delai Lovonivonu is the actual Blue Line?
11. Is there a standard distance from the Blue Line to the sea?
12. How many Blue Lines are there altogether on the TFR?
13. When can the lease money from this FR be increased?
14. Can we protect our forest just for certain years and then be given the right to do logging and selling?
15. What benefit would this project bring to us?
16. How do you know the number of acres belonging to each mataqali in the FR?
17. In what way can our traditional and historical war forts be developed into an Eco Tourism centre.
18. We would like to have our land in the FR be surveyed again so as to consolidate the rightful size of land belonging to our mataqali, can this be done?
19. How can this special FR lease money be separated from any other lease money paid to our mataqali?
20. Can the waste management group be establish here in Taveuni to see the proper disposal of rubbish?
21. Where is the actual boundary of the FR?
22. What is Mareqeti Viti?

F. Village – Vidawa Mataqali – Lekutu

Questions Raised:

1. Will not the BNHP be affected when the TNP is establish
2. If the TNP eventuate, how will its fund be divided? Will the mataqali with more land gets more money or will it be a standard numeration for all our mataqali?
3. Can this project be a source of employment for mataqali members?
4. What will happen to the lease money from the Government when all the FR is combined as the TNP?
5. Will the TNP focus only on tourism or will there be other aspect of conservation highlighted as well?
6. Will there be other similar project to follow this TNP project?
7. Won't this project destroy the trees up in the forest?
8. Our mataqali cannot convene an amicable meeting because of leadership dispute, will this affect our decision on the establishment of the TNP issue?

9. We requested for your assistance on the Lagiloa land dispute, can the boundaries be surveyed again?
10. If we approve of the TNP, what's next?
11. We need a confirmation on the boundaries of Lekutu and Vunivasa Estate, we request for a surveyor to do the work
12. We the members of the i tokatoka Matanaira, requests that the NLC confirms to us the rightful person for the Tui Lekutu. There is so much dispute on this issue. We want to live in harmony with everyone, for all this project can bring prosperity if we have unity. Can you assist us in the resolving of this minor issue?
13. We request that the landowners be employed when the project is in progress.
14. We have been able to protect our land so far, our forest the BNHP has been our pride, our question is what will the TNP bring to us?
15. Will the mataqali members have a share from this project or the money be given to the village for general ownership?
16. When we try to combine the BNHP with the Taveuni Forest Reserve, we need a confirmation to the actual boundary of the mataqali Lekutu land. Can this be done for us?
17. What is the real reason and objective to your intention of combining the Taveuni Forest Reserve, BNHP and the Ravilevu NR?
18. Will we remain landowners after the establishment of the TNP or the land will be owned by the National Park?
19. Can you clarify to us the actual size of our land in the Forest Reserved by the Government?

Conclusion:

1. Most of the mataqali prefer to merge the meetings and workshop together as in their traditional system rather than having individual mataqali meetings.
2. Most of the mataqali concerned have leadership differences. This needs to be addressed with the Provincial Office.
3. Some of the questions raised during the workshops were one way the mataqali members vented their anger because of the differences in the mataqali. There hasn't been any forum to let them air out their differences thus they grab the opportunity.
4. Villages in the BNHP are well aware of what is required, but there are two issues which should be of concerned are: a) as their project continue to operate, differences between the mataqali emerge and certain tokatoka slowly tries to take control. Their administration does not appear to be able to address this.
b) Currently, all the mataqali in the vanua Bouma are wary of the TNP as it may disturb their area, and the present progress of their tourism operation.

5. The Turaga Tui Cakau has gladly received and welcomes the project after the presentation made to him on the 24th of May. He has in return offered his assistance one way or the other. His experience from his 20+ years of service with the NLTB and as a former Land Minister with the SDL Government and his influence as the paramount chief of Cakaudrove will have a great impact on the project.
6. A 20 minutes presentation on the Project was made at the Cakaudrove Provincial Council on the 30th May. The Council has gladly welcomed the project and have given their support to see the eventuation of the project.
7. We have attended a meeting with the Taveuni Hotel and Tourism Association. Whilst they show interest in the TNP, they have their own agenda, so approach has to re-looked at should we need their support.
8. As of now, we have had meetings with 14 mataqali and there are 4 more to be covered to complete the first half of the year programme. The organising of the planned Viti Levu and Vanua Levu trip is in progress and we are confident that we'll be able to meet with the 4 mataqali before the trip in July. Although there are constraints faced throughout the consultation process, at the same time there are more people who are very positive and supportive of the project.

With the involvement of the Turaga Tui Cakau and the commitment by the Provincial Office, we are looking forward to good progress in the second half of the year.

ATTACHMENT 2
TAVEUNI LANDOWNERS CAPACITY BUILDING TOUR
VANUA LEVU, VITI LEVU
29TH JULY – 14TH AUGUST 2012



Taveuni Landowners' Capacity Building Tour

Vanua Levu, Viti Levu

29th July – 14th August 2012

Summary of Participants' Reports



CRITICAL ECOSYSTEM
PARTNERSHIP FUND

Cakaudrove
Provincial
Office



Taveuni Landowners Capacity Building Tour
Vanua Levu, Viti Levu
29th July – 14th August 2012
Summary of Participants' Reports

Report number: 2012/19

Date: 07th September 2012

Report prepared by: Perina Susu
Volunteer
Taveuni National Park Project

Report authorized by:

.....

Nunia Thomas

Conservation Coordinator

Cover photograph: Taveuni Landowners at the Sigatoka Sand Dunes

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1.0 Introduction

The Taveuni Landowners' Capacity Building was organized as part of the Taveuni National Park Project consultation phase. Forty landowners from the eighteen (18) mataqali owning land in the Taveuni Forest Reserve, Ravilevu Nature Reserve and Bouma National Heritage Park participated in the tour.

The major objectives of the tour:

- Was for the landowners to observe, and witness the management of the few protected areas in Fiji.
- Discuss with other landowners on the management and set up of their parks/ protected areas.
- Discuss with organisations/ stakeholders responsible of their role with landowners on the establishment of the protected areas they are responsible in.
- Sightseeing, and re-establishing traditional ties of the Vanua Lalagavesi and all the Vanuas we visited – Wainibuka, Drauniivi, Nadi, Namatakula, Naitasiri.
- Cakaudrove Provincial Office and CYMST – relating of their work plan to the Cakaudrove people in the urban areas.

The members of the tour were divided into four sub-groups (See Annexes 1 & 2 for group membership) in which they made guided discussions of the sites visited (See Annex 3). This report is a collation of the reports from the four sub-groups within the tour. We anticipate that this report will assist the tour members relay issues that they had singled out from the various sites visited and needs to be addresses by the suitable departments or agencies.

The tour group departed Taveuni on Sunday the 29th of July and returned on the island on the 14th of August (Annex 4).

2.0 Tour Report

The group was divided into four (4) sub-groups of ten from each mataqali (Annex 1). The report below includes their views on all the sites visited.

2.1 Day 1- Monday 30/07/12



Figure 1: Members of the tour group at the Waisali Forest Park

2.1.1 Waisali Forest Reserve

The team departed the Cakaudrove Provincial Office Complex at 9am Monday 30th of July. The Roko Tui Cakaudrove (Ro Aca Mataitini), Vice Chairman of the Cakaudrove Provincial Council (Ratu Sairusi Daugunu) and the Chairman of the Cakaudrove Yaubula Management Support Team (Joni Vakamino) joined the group from here.

The team was welcomed by Mr. Renuka at the Park before he gave a brief of the establishment and management of the Park. The group then toured around the park before convening again at the park foreground for a briefing by the National Trust of Fiji officer, Mr. Joe Ravuso.

2.1.1a Summary of group reports:

- First Impression – Beautiful Scenic view.
- Forest Park – Richly conserved forest.
 - Tracks nicely built with minimum damage to surrounding trees and shrubs.
 - Restrictions on its streams and rivers – richness of freshwater species.
 - High number of indigenous hardwood variety.
 - Serves as a hardwood nursery.
 - Clear signboards of trees, shrubs and palms detailing its scientific names, Fijian names, Status and its Description and Uses.
- Good relationship between the National Trust and the Landowners.
- National Trust manages the project on behalf of the landowners.

- Landowners not easily influenced by proposals and offer made by the saw-milling companies
- The landowners have prioritised the Forest Park as a Conservation Park for the future generation. Second priority is their eco-tourism project.
- Same situation as that of the BNHP, wherein landowners are co-manager of the park with NT.
- Lesson learnt from this visit is that Taveuni has a more outstanding landscape qualities which are derived from its tropical forest cover, however majority of its landowners are not aware of what Taveuni has to offer. This can be witnessed on this visit to the Waisali Forest Reserve, as Taveuni landowners appreciate the quality of the unexploited forest at Waisali, yet, if they get to conserve their forest and wildlife, their social and economic return will be much higher than that of Waisali.

2.2 Day 2 – Tuesday 31/08/12

Travelling day for the group. Departed Nabalebale village at 5am and reached Nabouwalu at 9am. The boat M.V Spirit of Harmony left Nabouwalu at 11am and reached Natovi at 3.30pm and the bus reached Wailotua Village at about 5pm. Ms Nunia Thomas and Ms Kelera Macedru were already at the village to welcome the touring group. Traditional ceremonies of sevusevu, then followed before we were taken to our respective houses.

2.3 Day 3 – Wednesday 01/08/12

The group had morning devotion at 6am and breakfast at 7am and were informed of the tour into the cave. The group were then divided into their respective four groups, assigned with their tour guide and given the instructions of what to expect inside the cave.



Figure 2: Members of the tour group at the entrance of the Wailotua bat caves, with the Tui Wailevu (standing 4th from left).

2.3.1a Summary of group reports: Wailotua Cave

- Uniqueness of the cave. – Lime stone like wall.
- Bat waste.
- Different types of stone.
- Landowners very knowledgeable about the history of the caves as passed on from generation to generation. No proper documentation of the history of the cave.
- Not all landowners participate in the management of the cave.
- Different presentation content by the tour guides.
- Improvement of the cave's management depends entirely on the landowners desire to involve NGO's or government departments.

2.3.2 Rewasa Village, Naroko.

The group departed Wailotua at 10am for Rakiraki. We arrived at the Conservation International Office at about 12pm and were welcomed by Mr. Nemani who is the officer in charge of the CI's project in Rakiraki. The groups were then briefed on CI's project before we departed for Rewasa village. Also present at the presentation was the Assistant Roko Ra, and the Provincial Administrator Ra.



Figure 3: Members of the tour at Conservation International's Rakiraki office.

2.3.2a. Summary of group reports:

- Close relationship between the CI, Provincial Office, Forestry Dept and Provincial Administrator
- Thorough research done in 2008 by USP researchers. Result submitted to Provincial Office Ra, thus the establishment of the Project.
- Proper documentation of the research by USP has assisted other government department's projects within the province.
- Landowners fully involved in the project; from provision of land for planting, nursery stage, planting and maintenance.

- Benefits given to the landowners are commendable. This includes bee farming, pineapple/pawpaw/ginger model farms and fish ponds. Landowners are also paid by the CI in the maintenance of the project.
- Workshops delivered to the landowners by CI and other departments have enabled the landowners to fully trust the donors on their intended project.
- This project has been another source of income to the landowners.
- Unsuitable place of presentation at the CI office.
- Late lunch. Fijian protocol took much of the time.
- Can we have this sort of project in Taveuni or other parts of Fiji and not concentrate only in Ra?

2.3.3 Drauniivi Village

After the sighting of the re-planted forest in Rewasa, the group had a half an hour stop at Rakiraki town before departing for Drauniivi Village. We treated to a fully traditional welcome of i vakasobu and qaloqalovi. This signifies the close traditional links between the vanua Lalagavesi and the vanua Vatukaloko.



Figure 4: Members of the tokatoka Nabuya, in Drauniivi Village (LHS) presenting the 'ivakasobu' (traditional welcome) to the elders of the tour group (RHS)

2.4 Day 4 – Thursday 02/08/12 Drauniivi Village/Lautoka

2.4.1a Summary of group reports: Fiji Water Factory

- Professional management of the company. Use high tech machines since their operation is global.
- Company has an excellent marketing system which is globally known.
- Landowners have no say in the management of the company since the plant is on Crown Lease Land.
- The factory is owned by an American couple who bought the plant from its previous owner who bought the land from the Government.

- No financial benefits or employment priority given to the landowners, rather they are given employment when applied for.
- Government should assist landowners in the reviewing of the title of the land.
- iTLTB to assist landowners in the reviewing of Crown Land, i.e. landowners to have a say in its development.
- Company has greatly promoted Fiji to the world.
- Very hospitable staff.

2.4.2 Lautoka

Cakaudrove /Taveuni people living in Lautoka welcomed the group at the FSC Hall at about 4pm. Dinner was served at 7pm before we had an early night for the long travel to Navilawa on Day 5.

2.5 Day 5 – Friday 03/08/12 - Naivilawa Village, Yakete, Ba.

The group left Lautoka at about 9am for Naivilawa and were accompanied by the National Trust of Fiji Officer responsible for the Naivilawa project.

2.5.1a Summary of group reports:

- Management of the Park: - mataqali is managing the project.
 - Uniting of the Vanua
 - Advance consultation
 - Provision of lodge and home stay to the visitors.
 - Financial programme is well planned.
- Landowners fully involved in the management of the project:

Board (comprised of landowners) →Project Managers →National Trust.

- Project is on Native Land.
- How can the Taveuni landowners contribute in the development of the Nature and Forest Reserve?
- Will we have any say in the establishment of the Taveuni National Park when the two PA are on Nature and Forest Reserve?
- Landowners are fully involved in projects on Native Land rather Crown Land.
- Naivilawa Project is similar to the BNHP – community managed project.
- Mataqali members in the urban areas supportive of the project as witnessed in their involvement in the marketing of the project. This shows that all the landowners were aware of the establishment and purpose of the project.

2.5.2 Cakaudrove/Taveuni Lautoka meeting.

One of the major objectives of the tour was also to inform the landowners living in the urban areas of the Taveuni National Park Project. The Project Manager – Waisale Mataitoga presented the TNPP together with the purpose of the tour. CYMST chairman and the Roko Tui Cakaudrove also presented the audience with the news from the Provincial Office. No questions were raised with regards to the presentations made by the NFMV.

2.6 Day 6 – Saturday 05/08/12 - Nadi

The group departed Lautoka for Nadi by 11am and were billeted at the Nakavu Village Hall. As in Lautoka, Taveuni landowners living in Nadi catered for the group for the two days spent in Nadi. A similar meeting to that held in Lautoka was held on the Sunday evening whereby presentations were made from the NFMV, CYMST and the provincial Office.

The group departed Nadi for the Sigatoka Sand Dunes on the morning of Monday the 6th of August.

2.7 Day 8 – Monday 06/08/12 - Sigatoka

2.7.1 Sigatoka Sand Dunes

2.7.1.a Summary of group reports:

- Fiji's first National Park and is totally administered by the National Trust of Fiji.
- Park is on Crown lease land, no clear indication of the rightful landowner.
- Park serves other purposes apart from it being a national park which includes: - training ground for various sporting teams
 - Educational and research sites for USP and other overseas institutions.
 - Eco – tourism.
- Advantage of it being on Crown lease land:
 - Quick development - no consultation with landowners.
 - Government has the say in the development of the park.
- Project on Native lease – major obstacle is the consultation process whereby landowners to all agree to the development.

2.7.2. Tavuni Hill Fort

2.7.2.a Summary of group reports:

- Conserving of the old village and war sites.
- Selecting of the right personal for the management of the project. Need transparency in its management.
- Landowners to make fully utilise the benefits given by donors.
- Tour guides to be well versed with the purpose of the project. I cases of forts, should know the history of the site. Thus landowners to document all the history of their forts.

2.8. Day 9 Tuesday 7/08/12

This was another travelling day for the touring group. The group spent the night at Namatakula village and left at about 9am for Kula Eco Park. From the Kula Eco Park the team headed straight to Suva for the trip up to Nadakuni Village, Naitasiri. We were greeted again with a full traditional welcome ceremony with the Nadakuni elders clarifying the traditional ties between the vanua Nadakuni and the vanua Lalagavesi.

2.8.1. Kula Eco Park

- Park is professionally managed. Even though it is managed as a business, it also at the same time conserves and breeds some of Fiji's endangered land birds and reptiles (iguana).
- Also serve as an educational resource to students.
- Tour guides are well informed of the Parks management and activities.
- Group so blessed to see some of the endangered land birds of Fiji.

2.9 Day 10 Wednesday 08/08/12 – Nadakuni Village, Naitasiri.

Conservation International personal, Mr. Vilikesa Masibalavu presented the Sovi Basin Project to the group. Being a landowner himself it was easy for the group to grasp the information needed for them to know in terms of the establishment of the Taveuni National Park.

2.9.1a – Summary of group reports: Sovi Basin Project

- Selecting of the right person in the consultation phase of the project.
- Clear communication channels followed by the project officers. Landowners informed of the progress of the project.
- Major hinderance – One mataqali not adhering to the process. Excuse given, they were not informed of the project progress.
- Presentation made to the landowners during the consultation phase was thorough, i.e. presented with the pros and cons of the project. Landowners know their role in the project.
- The group get to know the difference between what's Conservation lease, Nature Reserve and Forest Reserve.
- Purpose of conserving the basin, not only for the future generation of the 13 mataqali but for Fiji as a whole in terms of educational and research purpose, marketing of Fiji's rich biodiversity and the conserving of a number of Fiji's endangered land birds.
- Differences with Taveuni – the two PA's in Taveuni are already leased by Government.
- This is a co-managed project (landowners and NT). Landowners given the authority for the use of the basin for traditional and educational purposes only but not for commercial use.
- Clear financial statements, which can be due to the set up of the board or trusts who overlooks all the financial dealings. (Selecting of trustworthy people to be in the board).

2.10. Day 10 –Thursday 09/08/12 - Nadakuni/Colo-i-Suva

The group presented their itatau to the elders of Nadakuni before we departed for the Colo-i-Suva Forest Reserve.

2.10.1a Summary of group reports: Colo-i-Suva Forest Reserve

- Ministry of Forestry fully responsible for the management of the reserve.
- MoF leasing the land from landowners (Kalabu)
- Landowners have no say in the development of the park. MoF responsible of the development of the Park.
- Even though there are park restrictions, the public still violates these restrictions. Need full time park rangers.

2.10.1 Nasova Dinner & Meeting

The group were hosted to dinner by the Cakaudrove Police Officers based in Nasova on the evening of the 16th of August (Thursday) wherein 20 officers were present. Presentations of the Taveuni National Park Project, CYMST and Cakaudrove Provincial Council news were made to the officers. NFMV presentation on the TNPP was basically on the purpose of the project and also the progress of the project to date.

2.11. Day 11 Friday 10/08/12 – Taveuni/Suva meeting & dinner

The group attended the USP Open Day in Laucala and later were hosted to dinner by the Taveuni people residing in Suva.

2.11.1 Toorak

Even though only a handful of Taveuni people attended this meeting, the queries raised with regards to the TNPP project shows the need to clarify more issues to the Taveuni landowners residing in Suva.

Issues raised during this meeting include:

- Who and What is Nature Fiji/Mareqeti Viti.?
- What are their intentions in the establishment of the Taveuni National Park?
- How will the BNHP be affected if it is combined with the two PA's when it is already running on its own?
- The need to clarify the rightful ownership of the Ravilevu Nature Reserve. (Question raised by a member of the mataqali Vusaratu in Vuna.)
- The purpose of the trip. Landowners not to be bribed by such trip so they can easily say yes to the establishment of the project.
- NFMV needs to clarify to the landowners of the pros and cons of the project.
- How will the economic benefits of the project reach each individual mataqali members?

- Will the lease money be equally shared amongst the 18 mataqali or according to the sizes of their piece of land?

2.12. Day 13 Saturday 11/08/12 & 14 – Sunday 12/08/12

Group members were given opportunity to visit their families before convening again at the Nadera Parish Hall on Sunday 12th of August for a last meeting with landowners in Suva.

The team departed Suva at 4am for Natovi and crossed over to Nabouwalu via the M.V.Spirit of Harmony. The team spent the night in Savusavu before catching the M.V. Lomaiviti Princess for Taveuni on the morning of the 14th of August.

3.0 Conclusion

These were a few issues raised by the four groups during the tour:

- Importance of conserving our Forest and preventing the encroachment of agricultural activities into the Forest Reserve. Conserving of the Reserves has enabled researchers to identify the uniqueness of Taveuni's landscape and biodiversity thus the proposal of the Taveuni National Park.
- Clarifications of the differences in the Protected areas; Conservation Lease, Nature Reserve, Forest Reserve. Landowners need to know its advantages and disadvantages and their role in its development.
- Each mataqali within the island should know what they can offer to the TNP upon its establishment in terms of their resources.
- NFMV should clarify to the landowners on the management plan carried out in the few PA's and National Parks in Fiji. E.g. Projects where it is co-managed, solely managed by NT or Government or community based.
- Clarification on the lease money currently being given for the two PA's in Taveuni. How is it being distributed?
- Rightful owner of the Ravilevu Nature Reserve.
- A second round of meeting with mataqali members residing in the urban areas. Presentation to be very informative so as mataqali members not to have any excuses as witnessed in the Sovi Basin Process.

Annex 1. Membership of the Tour Sub-groups

Group 1:

	NAMES	VILLAGE	MATAQALI
1	Paula Manaua	Qeleni	Naqeru
2	Inoke Saqa	Lamini	Valelevu
3	Fabiano Feoko	Lovonivonu	Lawaki
4	Vilise Rabitu	Tavuki	Vusaratu
5	Sipiriano Qeteqete	Lavena	Matakuro
6	Vilimone B	Lavena	Matakuro
7	Pelasio V	Vidawa	Lekutu
8	Benedito	Korovou	Naituku
9	Bonevasio Koroduadua	Welagi	Navusayadi
10	Tulia Rakaidawa	Welagi	Nasuva
11	Samuela Tui	Vuna	Wainiyaku

Group 2:

	NAMES	VILLAGE	MATAQALI
1	Mikaele Tawake	Navakaoa	Naqeru
2	Lisco Radagadaga	Tavuki	Vusaratu
3	Mikaele W	Lavena	Matakuro
4	Semi Cagilaba	Somosomo	Valelevu
5	Iowani Ledua	Somosomo	Valelevu
6	Inoke Seru	Vuna	Navesi
7	Jone T	Korovou	Naituku
8	Anamaria Tiko	Vldawa	Lekutu
9	Nicholas Naceba	Welagi	Navusayadi
10	Ratu Seru Buliruarua	Somosomo	Valelevu
11	Alipate Uluibau	Qeleni	Nacivaciva

Group 3:

	NAMES	VILLAGE	MATAQALI
1	Berenado S	Lavena	Matakuro
2	Vueti Logayau	Lamini	Valelevu
3	Vatili Tikonalaivalu	Lovonivonu	Valelevu
4	Paulo Mualevu	Tavuki	Vusaratu
5	Eferemo S	Lavena	Qali
6	Penijamini L	Korovou	Vidawa
7	Atonio Apole	Vidawa	Lekutu
8	Perina Susu	Welagi	Nasuva
9	Sitiveni Tiko	Naiviivi	Korovatu
10	Sairusi Daugunu		

Group 4:

	NAMES	VILLAGE	MATAQALI
1	Alusio Neori	Qeleni	Nacivaciva
2	Mikaele Talemate	Lamini	Valelevu
3	Josivini	Lovonivonu	Cakaudrove
4	Mika Pau	Korovou	Vidawa
5	Suliano N	Vidawa	Lekutu
6	Orisi Seruitanoa	Somosomo	Valelevu
7	Lario	Lavena	Qali
8	Laisiasa Tuimouta	Navakawau	Waimakilu
9	Alifeo	Vidawa	Lekutu
10	Joni Vakamino		

Annex 2. Tour Group List:

	NAMES	VILLAGE	MATAQALI
1	Mikaele Tawake	Navakacoa	Naqeru
2	Alusio Neori	Qeleni	Nacivaciva
3	Paula Manaua	Qeleni	Naqeru
4	Alipate Uluibau	Qeleni	Nacivaciva
5	Vueti Logayau	Lamini	Valelevu
6	Inoke Saqa	Lamini	Valelevu
7	Mikaele Talemate	Lamini	Valelevu
8	Fabiano Feoko	Lovonivonu	Lawaki
9	Vatili Tikonalaivalu	Lovonivonu	Valelevu
10	Josivini	Lovonivonu	Cakaudrove
11	Vilise Rabitu	Tavuki	Vusaratu
12	Paulo Mualevu	Tavuki	Vusaratu
13	Lisco Radagadaga	Tavuki	Vusaratu
14	Sipiriano Qeteqete	Lavena	Matakuro
15	Berenado S	Lavena	Matakuro
16	Vilimone B	Lavena	Matakuro
17	Mikaele W	Lavena	Matakuro
18	Eferemo S	Lavena	Qali
19	Lario	Lavena	Qali
20	Jone T	Korovou	Naituku
21	Benedito	Korovou	Naituku
22	Penijamini L	Korovou	Vidawa
23	Mika Pau	Korovou	Vidawa
24	Atonio Apole	Vidawa	Lekutu
25	Pelasio V	Vidawa	Lekutu
26	Suliano N	Vidawa	Lekutu
27	Semi Cagilaba	Somosomo	Valelevu
28	Iowani Ledua	Somosomo	Valelevu
29	Orisi Seruitanoa	Somosomo	Valelevu
30	Nicholas Naceba	Welagi	Navusayadi
31	Adi Ana Qereitoga	Welagi	Nasuva
32	Bonevasio Koroduadua	Welagi	Navusayadi
33	Tulia Rakaidawa	Welagi	Nasuva
34	Ratu Seru Buliruarua	Somosomo	Valelevu
35	Inoke Seru	Vuna	Navesi
36	Laisiasa Tuimouta	Navakawau	Waimakilu
37	Samuela Tui	Vuna	Wainiyaku
38	Waisale Mataaitoga	Somosomo	Valelevu

39	Perina Susu	Welagi	Nasuva
40	Anamaria Tiko	Vldawa	Lekutu
41	Alifeo	Vldawa	Lekutu
42	Sitiveni Tiko	Naiviivi	Korovatu
	Savusavu (CYMST & CPC)		
43	Roko Tui Cakaudrove - Ro Aca Mataitini		
44	Sairusi Daugunu		
45	Joni Vakamino		
46	Sekaia Malani		
47	Pateresio		

Annex 3: Evaluation Questions

Evaluation Questions

Waisali Forest Park

1. List 10 new things you learnt in terms of:
 - a. The management of the Waisali Forest Reserve?
 - b. How the landowners are involved in the project?
 - c. How was the reserve established?
 - d. Who manages the Waisali Forest Park?
2. List 5 new things you liked about the Waisali Forest Park?
3. List 5 things you did not like about the Waisali Forest Park?

Wailotua Village

1. List 10 new things you learnt in terms of:
 - a. The management of the Wailotua caves ecotourism?
 - b. How are the landowners involved in the project?
 - c. Do all the members of the mataqali/ yavusa participate in the project?
 - d. What are the benefits of the project to the landowners?
2. List 5 things you did not like about the Wailotua trip?
3. List 5 new things you liked about the Wailotua trip?

Rewasa Village

1. List 10 new things you learnt in terms of:
 - a. The management of the CI project?
 - b. How are the landowners involved in the project?
 - c. How was the project established?
 - d. Who manages the project in the village?
2. List 5 new things you liked about the Wailotua trip?
3. List 5 things you did not like about the Wailotua trip?

Fiji Water/ Drauniivi Village

1. List 10 new things you learnt in terms of:
 - a. The management of the project?
 - b. How are the landowners involved in the project?
 - c. How was the project established?
 - d. Who manages the project in the village?
 - e. What benefits have the landowners received from the project?
 - f. What is the landownership of the Fiji Water project (Native land or crown land)?
 - g. Would you like to know more about how a crown lease agreement and a native lease agreement works?
2. List 5 new things you liked about the Fiji water/ Drauniivi trip?
3. List 5 things you did not like about the Fiji water/ Drauniivi trip?

Navilawa

1. List 10 new things you learnt in terms of:
 - a. The management of the project?
 - b. How are the landowners involved in the project?
 - c. How was the project established?
 - d. Who manages the project in the village?
 - e. What benefits have the landowners received from the project?
 - f. What is the landownership of the Navilawa project (Native land or crown land)?
 - g. What do you see is the difference between a project on Native land versus a project on crown land?
 - h. How do you think this applies to Taveuni?
2. List 5 new things you liked about the Fiji water/ Drauniivi trip?
3. List 5 things you did not like about the Fiji water/ Drauniivi trip?

Sigatoka Sand Dunes

1. List 10 new things you learnt in terms of:
 - a. The management of the project?
 - b. How are the landowners involved in the project?
 - c. How was the project established?
 - d. Who manages the project?
 - e. What benefits have the landowners received from the project?
 - f. What is the landownership of the Sigatoka Sand Dunes National Park (Native land or crown land)?
 - g. What do you see is the benefit of a project on crown land?
 - h. What do you see is the disadvantage of a project on native land?
 - i. How do you think this applies to Taveuni?
2. List 5 new things you liked about the Sigatoka Sand Dunes trip?
3. List 5 things you did not like about the Sigatoka Sand Dunes trip?

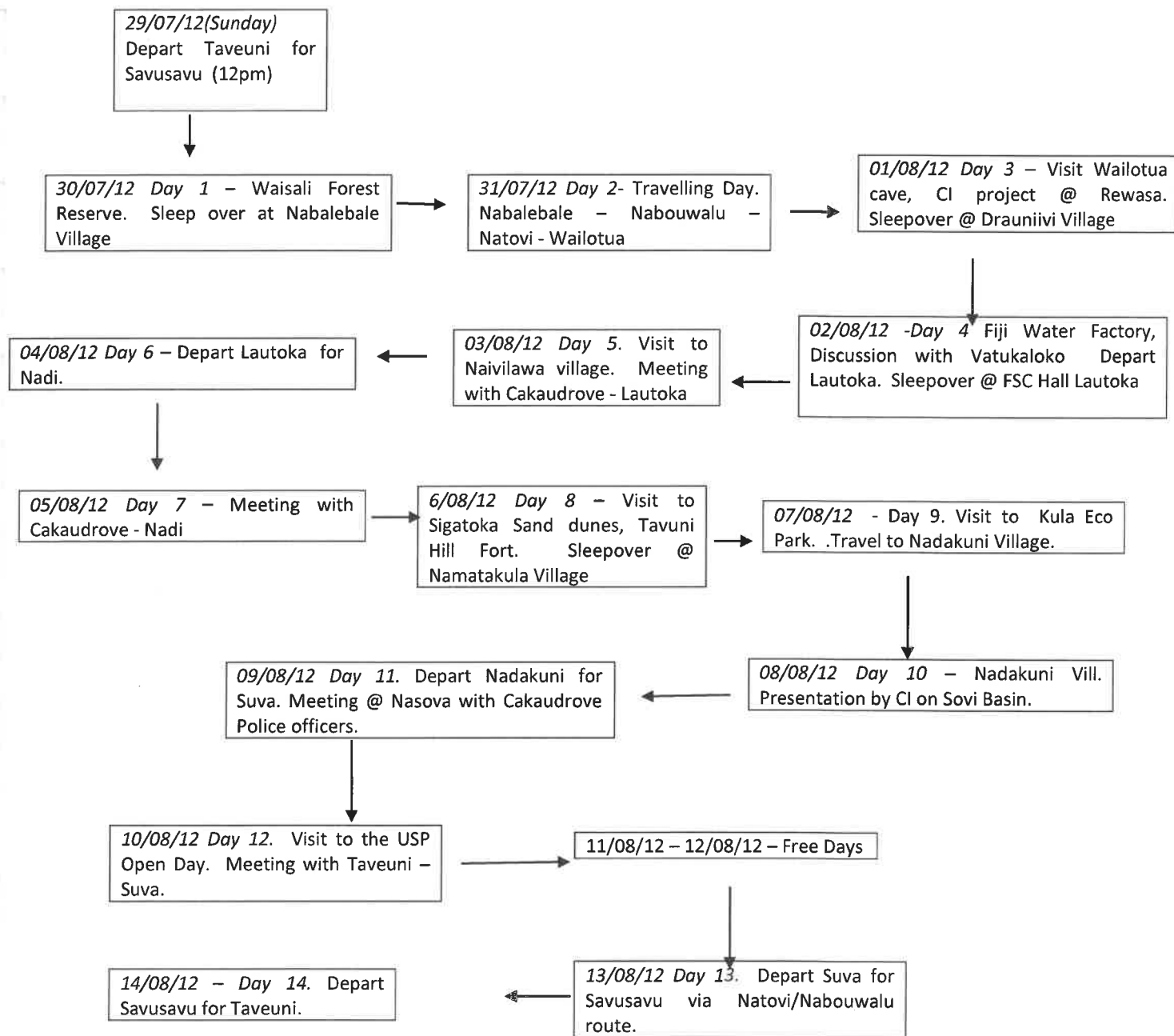
Tavuni Hill Fort

1. List 10 new things you learnt in terms of:
 - a. The management of the project?
 - b. How are the landowners involved in the project?
 - c. How was the project established?
 - d. Who manages the project?
 - e. What benefits have the landowners received from the project?
 - f. What is the landownership of the Tavuni Hill Fort (Native land or crown land)?
2. List 5 new things you liked about the Tavuni Hill Fort trip?
3. List 5 things you did not like about the Tavuni Hill Fort trip?

Kula Eco Park

1. Vola mai na yaca ni lima na manumanu vakaitaukei o mai sarava e na Kula Eco Park?
2. Vola mai na yaca ni lima na manumanu vulagi o mai sarava e na Kula Eco Park?
3. Na cava na i naki levu ni nodratou mai vakatauyavutaki kina na Kula Eco Park?
4. Na manumanu cava e so e ra sa mai vakabula, se vaka-kawa taka tiko e na Kula Eco Park?
(Captive breeding programme)
5. E na loma ni dua na yabaki, e dau lewe vica na koronivuli era dau mai sarasara e na Kula Eco Park.

Annex 4: Tour Logistics



Annex 5: Attendance Register of Meetings with Cakaudrove people at various venues

i. Nadi

<i>Name</i>	<i>Mataqali</i>	<i>Koro</i>	<i>Tikina</i>
Semi Cagilaba	Valelevu	Somosomo	Cakaudrove
Mariana Voa	Naituku	Korovou	Wainikeli
Adi Vilisi	Naco	Navakawau	Vuna
Atonio Mainavolau	Naqeru	Qeleni	Wainikeli
Mikaele Ravuama	Naqeru	Qeleni	Wainikeli
Dominiko V	Waimakilu	Navakawau	Vuna
Semesa Laladidi	Veiniu	Wai	Wainikeli
Jona Colaudolu	Waimakilu	Navakawau	Vuna
Peni Bruce	Lomanikoro	Kanacea	Vuna
Iosefo Golea	Matakuro	Lavena	Wainikeli
Onorina Qila	Naituku	Korovou	Wainikeli
Lavenia Eli	Matakuro	Lavena	Wainikeli
Patirisia Sara	Nasau	Waitabu	Wainikeli
Romanu Solimae	Matakuro	Lavena	Wainikeli
Alanieta Koro	Valelvu	Tacilevu	Naweni
Makelesi Suraki	Valelevu	Tacilevu	Naweni
Pule Senilagakali	Benauwa	Wailevu	Tunuloa
Iowane	Matakuro	Lavena	Wainikeli
Julia Maiwai	Valelevu	Naselesele	Wainikeli
Mateni	Waimakilu	Navakawau	Vuna
Maritina Siliwaliwali	Valelevu	Somosomo	Cakaudrove
Kalisito Kalougata	Naqeru	Qeleni	Wainikeli
Iokimi Digogo	Naqeru	Qeleni	Wainikeli
Eferemo Caginivula	Valelevu	Somosomo	Cakaudrove
Keren Draunidalo	Benau	Somosomo	Cakaudrove
Apete Tuimunia	Kavula	Somosomo	Cakaudrove
Lui Kaunisela	Wainiyaku	Vuna	Vuna.

ii. Sigatoka

	Name	Mataqali	Koro	Tikina
1.	Jale Lalabalavu	Valelevu	Somosomo	Cakaudrove
2.	Saula N	Valelevu	Natewa	Natewa
3.	Usaia Tuidola	Nabau	Kanacea	Vuna
4.	Tomasi Vala	Wainiyaku	Korovou	Vuna
5.	Mereadani	Kavula	Somosomo	Cakaudrove
6.	Teresia B	Wainiyaku	Korovou	Vuna
7.	Emele B	Naividamu	Wailevu	Wailevu
8.	Marica B	Loa	Lea	Navatu
9.	Tema Vueti	Valelevu	Lovonivonu	Cakaudrove
10.	Teresia T	Valelevu	Lovonivonu	Cakaudrove
11.	Meresiana D	Valelevu	Lovonivonu	Cakaudrove
12.	Adrea B	Matakuro	Lavena	Wainikeli
13.	Manasa		Welagi	Cakaudrove

iii. Nasova, Suva (Police Officers)

	Name	Mataqali	Koro	Tikina
1.	Semi Talawadua	Valelevu	Naweni	C
2.	Elia Waqasoqo	Vidawa	Korovou	Wainikeli
3.	Paul Katoni	Waisoki	Waitabu	Wainikeli
4.	Alisi Lalabalavu	Valelevu	Somosomo	Cakaudrove
5.	Timotea Valaibulu	Wailevu	Wailevu	Tunuloa
6.	Latileta Ryland	Vunivatu	Vatukaroa	Saqani
7.	Taufa Vasuinadi	Biagunu	Vuinadi	Vaturova
8.	Dominiko Valaibulu	Wailevu	Wailevu	Tunuloa
9.	Savenaca Waqa	Balabala	Vusasivo	Natewa
10.	Apimeleki Digitaki	Vatukini	Naboutini	Saqani
11.	Authur Davis	Solovetini	Savudrodoro	Nasavusavu
12.	Joji Dakuwaqa	Valelevu	Somosomo	Cakaudrove
13.	Salesetino Babakoro	Valelevu	Somosomo	Cakaudrove
14.	Luke Rawalai		Nakobo	Cakaudrove



Consultancy for the review of COHP, development of monitoring protocols and the development of a draft Code for Wood Processing

Contractors – Graham Wilkinson and Michael Mussong

Date – 16th – 20th March

Time	Monday 16 th	Tuesday 17 th	Wednesday 18 th	Thursday 19 th	Friday 20 th
8.00 – 9.00			Travel to Nadi	First flight to Labasa	Return to Suva via first flight
9.00 – 10.00	Meeting with DTUD and team	Meeting with CF to introduce the team		Meeting with DFO North & team	Meeting MoF SET & SPC team
10.00 – 11.00					
11.00 – 12.00	Meeting with DO C.E and team	Meeting with Director OHS	Meeting with DFO West & team		
12.00 – 1.00					
1.00 – 2.00	Lunch				
2.00 – 3.00	Meeting with Harvest monitoring team	Consultation with logging contractors and sawmillers in Central / Eastern	Consultation with logging contractors and sawmillers in the West	Consultation with logging contractors and sawmillers in the North	
3.00 – 4.00					
4.00 – 5.00	Meeting with sawmillers association president				
5.00 – 6.00					
			Overnight in Nadi	Overnight in Labasa	

Fiji

Forest

Certification

Standard

Final Draft

December, 2008

Please contact Deborah Sue for more information on the *Fiji Forest Certification Standard* and Forest Certification in Fiji.

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Acknowledgements

The *Fiji Forest Certification Standard – Draft 1* was developed by a broad representation of forest stakeholders in Fiji. The representatives to the Standards Committee were elected by peers in their respective social, economic and environmental interest groups, which collectively make up the Consultation Group, listed below.

The *Fiji Forest Certification Standard* was then being further refined via wide public consultation and field testing, with the guidance of the Fiji Forest Certification Working Group Committee, listed below.

Chamber	Standards Committee		Fiji Forest Certification Working Group Committee	
	Name	Organisation/Company	Name	Organisation/Company
Economic	Manasa Naiyaga	Man Industries Ltd.	Ilaisa Tulele	Fiji Pine Group
	Adriu Nabora	Fiji Hardwood Corporation Ltd.	Mark Sanderson	Fiji Hardwood Corporation Ltd.
	Naca Yalimaitoga	Fiji Pine Ltd.		
	Tavaga Tikomaimaleya	Serua Logging	Truman Bradley	Modern Furniture
Environment	Eminomi Ranacou	Vesi Consultants	Dick Watling	Environmental Consultants (Fiji) Ltd.
	Marika Tuiwawa	South Pacific Regional Herbarium		
	Francis Areki/ Kesaia Tabunakawai	Environment Non-Government Organisation representative	Suliana Siwatibau	NatureFiji/MareqetiViti
Social	Lai Cabenalevu	Toga Logging Ltd.	Aisake Saro	Fiji Mahogany Trust
	Moape Serukalou	Building, Construction Timber & Allied Workers' Union	John Paul	Building, Construction Timber and Allied Workers' Union
	Netava Bakaniceva	Native Land Trust Board		
Chair	Deborah Sue	Forestry Department	Inoke Wainiqolo	Forestry Department

A balance between the Chambers was maintained via the voting rights/positions shown above, if the employment of a conflict resolution procedure was necessary.

The development of the Standard would not have been possible without the financial support of:

- The Fiji Government, Forestry Department
- GTZ-Pacific German Regional Forestry Project
- Secretariat of the Pacific Community, Pacific Islands Forests & Trees Program

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Acronyms

CITES	Convention on the International Trade of Endangered Species
DFOs	District Forest Officers
EIA	Environment Impact Assessment
FAB	Fijian Affairs Board
FD	Forestry Department
FME	Forest Management Enterprise
FMU	Forest Management Unit
FSC P&C	Forest Stewardship Council Principles and Criteria
FSC	Forest Stewardship Council
HCVF	High Conservation Value Forest
ILO	International Labour Organization
ITTA	International Tropical Timber Association
NBSAP	National Biodiversity Strategy and Action Plan
NGOs	Non-Government Organisations
NLFC	Native Land Fisheries Commission
NLTB	Native Lands Trust Board
NTFP	Non-Timber Forest Product
OHS	Occupational Health and Safety
PPE	Personal Protective Equipment

Introduction

The Forest Certification Concept

Forest Certification is a system that takes into account interests of social groups, environmental values, in addition to economic concerns. Forest Certification began in the 1990's as a response to the European boycott of tropical timber. Harvesting of timber had a reputation for being environmentally damaging and socially unfair in developing countries, particularly those with tropical rainforests. Various certification schemes were born, with the international ones being that of the Forest Stewardship Council (founded in November, 1994) and the Programme for the Endorsement of Forest Certification (PEFC – formally Pan European Forest Certification). Today, Forest Certification is a market driven tool for sustainable forest management.

Proof that a forest is well managed for all interests is third party Certification whereby the management is audited by an accredited Certification Body (auditor) against a Standard, such as this *Fiji Forest Certification Standard*. If the forest management is certified, a label is attached to the logs harvested by the forest management company and the logs sent for processing. The labelled logs are tracked as they are processed by various companies (Chain of Custody) so that the final processor can also put a label on the final product (chipboards, furniture, etc) to say that the wood is sustainably sourced. Therefore, a customer is able to differentiate certified wood products from uncertified products and make a conscious decision for a responsible purchase.

Forest Certification is fast becoming a requirement of wood products. This is due to increasing demands from the growing socially-conscious and environmentally-aware niche markets of Europe and North America, in addition to those other countries that also supply wood products to these areas.

Forest Certification in Fiji

The Fiji Forest Certification Project has been key facilitator of forest certification in Fiji. The structure of its Steering Committee and the relationship with other stakeholders is outlined in the diagram and below.

The stakeholders of forest certification can generally be divided according to their social, economic or environmental interests. The Steering Committee thus follows the same interest groups (Chambers) with the decision-making powers evenly divided between the Social, Economic and Environmental Chambers.

The Committee with its Chair is at the core of the stakeholders and each Chamber has 2 representatives of their respective interest groups.

The Steering Committee has been responsible for major decision-making and providing the overall direction of the Fiji Forest Certification Project.

Funding agents such as SPC-Forestry (Secretariat of the Pacific Community – Forest & Trees Programme) and the Forestry Department are very close to the core of the Initiative – as shown in the ring surround the Initiative.

Other organisations such as the Fiji Pine Trust, Ministry of Indigenous Affairs, Native Land Trust Board, Fiji Pine Ltd, Fiji Forest Industries, Fiji Trade and Investment Board, WWF, National Trust of Fiji, BirdLife International are other key stakeholders of the forestry sector and forest certification; and hence, are included in the circle of stakeholders.

The General Public and Consumers of wood products would also be forest certification stakeholders as they would be the target of awareness campaigns for sustainable forest management and certification, as well as being at the end of the Chain-of-Custody for certified wood products.

The *Fiji Forest Certification Standard* Development

The *Fiji Forest Certification Standard* has been developed along the guidelines of the Forest Stewardship Council, as selected by the multi-interest stakeholder Fiji Forest Certification Steering Committee (later to become the Fiji Forest Certification Working Group Committee). 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 Standard has been formulated by elected representatives of the social, economic and environmental interest groups that formed the National Forest Certification Standards Committee in October, 2005. Draft 1 was completed mid-2006, for which there was a Public Consultation meeting in each of the 3 Forestry Divisions by November 2006.

Draft 2 of the Standard incorporated the Public Consultation feedback and was completed by the Fiji Forest Certification Steering Committee by May 2007. Draft 2 was field tested by the accredited Certification Body, SmartWood, in October 2007 in the following 3 forest management systems:

- 1) Large plantation management company – Fiji Pine Limited
- 2) Large native forest management company – Fiji Forest Industries
- 3) Small native forest management company – Drawa Landowners Forest Management Corporative (DraFCo)

Draft 3 of the Standard integrated the recommendations of the Field Test by July 2008 and was put up for a 2nd Public Consultation in August 2008. Feedback from this Public Consultation is incorporated into Draft 4 of the *Fiji Forest Certification Standard* with the guidance of the Fiji Forest Certification Working Group Committee. Draft 4 is the Final Draft that is submitted to the Forest Stewardship Council for accreditation.

Scope of the *Fiji Forest Certification Standard*

The *Fiji Forest Certification Standard* state the level of performance required and the type of evidence that should be provided by the Forest Management Enterprise (FME) for verification by the Certification Body (auditor), to show the compliance of forest operations to the Standard during a Certification Audit.

The Standard covers all FME forest operations (e.g. nursery, planting, maintenance and harvesting) that may have an impact on the environment (FMU and landscape levels); the relationship that the FME has with local and indigenous communities in the vicinity of its Forest Management Unit(s) as well as its workforce labourers and contractors/sub-contractors.

The Standard also covers all relevant local and international laws and agreements/conventions that Fiji is a party to; in addition to areas of social or environmental significance.

The Standard can be applied to all forests types managed for the production of wood and non-wood products. The Standard for native forest types are Principles 1 to 9, while the Standard for plantation forests are Principles 1 to 10.

Fiji Forest Certification Standard and Fiji Forest Harvesting Code of Practice

The *Fiji Forest Harvesting Code of Practice* is designed to address environmentally acceptable harvesting practices to minimise 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

Fiji Forest Certification Standard & the 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.

Layout of the Standard

The structure of the Standard, as adopted from the FSC Principles and Criteria for Forest Stewardship, has four levels of hierarchy whereby there are 10 Principles (fundamental requirements of good forest management that apply everywhere), which each have a number of Criteria (which add meaning & operationality without itself being a direct measure of good forest management).

Each of the FSC Criterion was then adapted to local Fijian conditions with Indicators (which define good forest management for a forest of a specific type in a specific region) and Verifiers (which state what evidence confirms compliance with the Indicator).

These Principles, Criteria, Indicators and Verifiers are set out in a table with the relevant Principle at the top of each page, followed by the Criterion addressed, the Indicators in the left hand column and Verifiers (Means of Verification) in the right hand column.

This Standard is a living document and the list of laws and documentation required may change over time. The FME will need to adhere to any new relevant laws, requirements and technology.

PRINCIPLE 1: Compliance with Laws and FSC Principles – Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.

1.1 Forest and plantation management shall respect all national and local laws and administrative requirements.

Indicator	Means of Verification
1.1.1 Forest resource owner, licensee, contractors and subcontractors shall maintain an up-to-date list and copy of the national and local laws and regulations relevant to the forest operations undertaken, as listed in Appendix 1.	
1.1.2 Forest resource owner, licensee, contractors and subcontractors that undertake forestry operations understand and comply with the laws listed whereby <ul style="list-style-type: none"> • The contract agreement/license agreement/etc. shall contain clauses stating adherence and compliance with laws. • Forest resource owner/licensee and contractors shall have documentation/ reports on awareness workshops/training completed on laws and regulations 	
1.1.3 The FME shall maintain a transparent relationship with the Forestry Department and forward all binding agreements between the contractor and forest owner/licensee to the Forestry Department (DFOs). Applies to native forest only,	<ul style="list-style-type: none"> • Report from the Forestry Department on fulfilment of all binding agreements.

1.2 All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid.

Indicator	Means of Verification
1.2.1 The forest management enterprise (FME) shall pay all prescribed forestry taxes, royalties and fees in addition to any fees authorized in the lease agreement.	<ul style="list-style-type: none"> • A Register listing evidence, date of payment, amount paid, recipients of all relevant payments are kept and maintained by the forest management company

1.3 In signatory countries, the provisions of all binding international agreements such as CITES, ILO Conventions, ITTA, and Convention on Biological Diversity, shall be respected.

Indicator	Means of Verification
1.3.1 FME shall provide training and guidance to staff, contractors and sub-contractors and resource owners regarding international conventions and treaties.	<ul style="list-style-type: none"> • Field manuals • Licence/Contract Agreements • Field Assessment Reports

PRINCIPLE 1: Compliance with Laws and FSC Principles – Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.

1.4 Conflicts between laws, regulations and the FSC Principles and Criteria shall be evaluated for the purposes of certification, on a case by case basis, by the certifiers and the involved or affected parties.

Indicator	Means of Verification
1.4.1 Conflicts between Fiji National Laws, FSC P&C and Fiji's international commitments shall be identified.	<ul style="list-style-type: none"> Conflict identification and assessment
1.4.2 All relevant stakeholders shall be involved to achieve resolution.	<ul style="list-style-type: none"> Meeting minutes, reports or agreements.

1.5 Forest and plantation management areas shall be protected from illegal harvesting, settlement and other unauthorized activities.

Indicator	Means of Verification
1.5.1 The boundary of the FME shall correspond to the NLTB lease records and the FME boundaries shall be geographically and unmistakably defined with boundary markers (natural or man-made) reflecting geographical co-ordinates of official survey markers.	<ul style="list-style-type: none"> FME Maps and on the ground boundary markers
1.5.2 The FME shall maintain an accurate and up-to-date register with maps of all its leases.	
1.5.3 Prohibited activities defined in agreements between the Fiji Government and local communities shall be controlled whereby there are: <ul style="list-style-type: none"> A list of prohibited activities shall be publicly posted in a language(s) that the community can understand. A Record of violations and the disciplinary actions taken shall be kept. 	<ul style="list-style-type: none"> List of permitted and prohibited activities in the contract/lease agreement Violation records – occurrence & disciplinary action. Monitoring reports by community representative, the Forestry Department and Forest Manager.
1.5.4 The FME shall assign resources and carry out protection and monitoring activities in the FME	<ul style="list-style-type: none"> Bi-annual monitoring reports by community representative, the Forestry Department and Forest Manager.

1.6 Forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria.

Indicator	Means of Verification
1.6.1 The FME shall have a publicly available Vision/Policy Statement for the landscape and resource owners that specifically include a long-term commitment to FSC P&C. This Vision/Policy Statement shall be reviewed and updated periodically and shall be available in the vernacular.	<ul style="list-style-type: none"> The annual reports of interviews of forest stakeholders understand the long term commitment to FSC P&C. The Vision/Policy Statement available on the FME website and for viewing as a hard copy.
1.6.2 FME shall disclose information on all forest areas over which the FME has some degree of management responsibility to demonstrate compliance with current FSC policies on partial certification and on excision of areas from the scope of certification.	<ul style="list-style-type: none"> The Management Plans for the FMEs

PRINCIPLE 2: Tenure and Use Rights and Responsibilities - Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.

2.1 Clear evidence of long-term forest use rights to the land (e.g. land title, customary rights, or lease agreements) shall be demonstrated.

Indicator	Means of Verification
2.1.1 The FME shall provide documents and maps which clearly indicate property rights, use rights, customary rights and ownership for the lease period	<ul style="list-style-type: none"> • Copy of lease instrument that includes signed consent forms from resource owners always in possession of NLTB. Originals are kept with Licensee. • Lease map • <i>Community Resource Inventory Map</i> • Native Land Commission map • Records of consultations, discussions and decisions in the process of acquiring the lease shall be documented with date, place and participants. • List of permitted and prohibited activities in the contract/lease agreement in the 3 languages (English, Fijian and Hindi), where applicable. • MoU (Memorandum of Understanding) between NLTB, Investor and Landowner unit(s)

2.2 Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.

Indicator	Means of Verification
2.2.1 Records of consultations, discussions and decisions in the process of acquiring the lease shall be documented and recorded with date, place and participants. Additionally, a copy of lease instrument that includes signed consent forms from resource owners shall be kept by the FME.	<ul style="list-style-type: none"> • Refer to MOV for Criterion 2.1.1
2.2.2 There shall be access to natural resources as permitted by lease/concession agreement.	<ul style="list-style-type: none"> • Discussion with local communities

2.3 Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.

Indicator	Means of Verification
2.3.1 Contract/lease agreement shall contain a dispute resolution procedure. Records of all disputes (resolved, ongoing, and yet to be resolved) shall be maintained.	<ul style="list-style-type: none"> • Dispute resolution procedure • Records of all disputes

PRINCIPLE 3: Indigenous Peoples' Rights – The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognised and respected.

Advice Note: In Fiji, all landowners of Native land are indigenous. Native land accounts for about 83 percent of Fiji's total land mass. Freehold lands are owned by either indigenous or non-indigenous people. State land is solely owned by the Government. Most of the pine and mahogany plantations and production natural forest are on Native land.

3.1 Indigenous peoples shall control forest management on their lands and territories unless they delegate control with free and informed consent to other agencies.

Indicator	Means of Verification
3.1.1 All acquisition of user rights to native lands shall comply with the Native Lands Trust Act and other regulations governing native lands.	<ul style="list-style-type: none"> • Prerequisite of a Lease Consent Form shall be signed with majority consent from the resource owners • List of permitted and prohibited activities in the contract/lease agreement in the 3 languages (English, Fijian and Hindi), where applicable.
3.1.2 A Lease Consent Form shall be signed with the majority consent from the resource owners.	
3.1.3 Records of consultations and discussions in the process of acquiring lease shall be documented. (date, place, participants)	<ul style="list-style-type: none"> • Records of consultations, discussions in the process of acquiring lease shall be documented (date, place, participants) • <i>Community Resource Inventory Map</i> • Reports of awareness workshops where local communities/land owners are made aware of the lease conditions. • Records of all disputes (resolved, on-going, and yet to be resolved) shall be maintained.

3.2 Forest management shall not threaten or diminish, either directly or indirectly, the resources or tenure rights of indigenous peoples.

Indicator	Means of Verification
3.2.1 The FME shall consult with the resource owners and document all cultural and traditional rights over the use of forest resources. There shall be no evidence that the FME has diminished these documented rights.	<ul style="list-style-type: none"> • Report on Socio-economic-environmental baseline of the resource owners and local communities' forest area & existing resources • Report for community consultation & endorsement of Community Forest Management Plan. • Community Management Plan obtained via consultation with the resource owners and local communities & take into account socio-economic-environmental monitoring reports
3.2.2 The FME shall facilitate the formulation and implementation of Participatory Community Management Plans which shall contain clear objectives or goals for protection & conservation of flora & fauna within the resource owners' and local communities' forest area. The implementation of Community Management Plans shall be regularly monitored and updated.	<ul style="list-style-type: none"> • Community Management Plan • Monitoring reports of Socio-economic-environmental impact study - recommended every 5-10 years

PRINCIPLE 3: Indigenous Peoples' Rights – The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognised and respected.

3.2.3	The FME and the resource owners shall agree to any transfer of leases/titles any new lease conditions	<ul style="list-style-type: none"> Signed Lease Consent Form agreeing to transfer of lease/title from relevant stakeholders.
3.2.4	EIA summaries shall be translated into the vernacular and distributed to the resource owners.	<ul style="list-style-type: none"> EIAs summary translated and distributed to resource owners and local communities

3.3 Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in co-operation with such peoples, and recognised and protected by forest managers.

Indicator		Means of Verification
3.3.1	The FME shall identify and document places of special cultural, ecological, religious and/or spiritual significance in consultation with the resource owners.	<ul style="list-style-type: none"> Register & map of sites of special cultural, ecological, economic or religious significance to the resource owners and local communities Lease/contract agreements that provide for the protection of the special sites The special areas are clearly demarcated on the ground EIA Report
3.3.2	The FME, in consultation with the resource owners, shall develop protection measures for sites of special significance and include them in the management and harvest plans.	
3.3.3	The FME, in consultation with resource owners, shall clearly demarcate sites of special significance on the ground prior to any site disturbing activities.	
3.3.4	Resource owners should clearly indicate to the contractor all reserved and protected sites	<ul style="list-style-type: none"> Community sites demarcated in the Harvesting Plan and <i>Community Resource Inventory Map</i>

3.4 Indigenous peoples shall be compensated for the application of their traditional knowledge regarding the use of forest species or management systems in forest operations. This compensation shall be formally agreed upon with their free and informed consent before forest operations commence.

Indicator		Means of Verification
3.4.1	When there is use of traditional knowledge for commercial purposes, written agreements shall exist between the FME and the indigenous people regarding the use rights to their traditional knowledge, intellectual property rights and on terms of compensation.	<ul style="list-style-type: none"> A Lease Consent Form signed by the majority recognised resource owners and local communities' representatives expressing willingness to share particular traditional forest knowledge.
3.4.2	The agreement required in 3.4.1 shall be signed by the majority of recognised indigenous resource owners, local communities' representatives & the forest manager.	<ul style="list-style-type: none"> The Agreement signed by the majority recognised resource owners and local communities' representatives & the forest manager, including any necessary patents.

PRINCIPLE 4: Community Relations and Worker's Rights – Forest management operations shall maintain or enhance the long-term social and economic well being of forest workers and local communities.

4.1 The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.

Indicator	Means of Verification
4.1.1 First preference for employment & services shall be given to resource owners/local communities, provided that they meet the required level of skill and qualification.	<ul style="list-style-type: none"> • Documentary evidence from the FME. Can include contract for services.
4.1.2 The FME shall offer opportunities to employees to pursue continuing education and advanced training opportunities, in accordance with the FME staff development plan	<ul style="list-style-type: none"> • The employer offers all employees information about and opportunities to participate in education and training programs, including workplace safety training – documentation • The employees are satisfied with the information and the chances for participation – interview • Reports of workshops/training sessions/ individual training and achievement records

4.2 Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.

Indicator	Means of Verification
4.2.1 All forest workers shall be compliant with the OHS Act whereby the FME/contractor/ sub-contractor supplies all workers all Personal Protective Equipment (PPE)	<ul style="list-style-type: none"> • All forest workers are observed in the field with appropriate use of their PPE – listed in Annex 4. • Field observations
4.2.2 The FME shall have a health and safety manual, which at the minimum, identifies common hazards, provides instructions for preventative measures, emergency and first aid procedures, and outlines training requirements.	<ul style="list-style-type: none"> • The FME has a Health and Safety Policy Statement.
4.2.3 All contracts with contractors and subcontractors shall require adherence to the provisions of the FME's Occupational Health and Safety Manual	
4.2.4 Workers shall regularly be trained in the emergency procedures outlined in the FME's Health and Safety Manual	<ul style="list-style-type: none"> • Manual with procedures for various emergency situations, including having a vehicle equipped with radio telephone on standby.
4.2.5 Forest workers shall be trained in basic First Aid in accordance with the FME's Occupational Health and Safety Plan	<ul style="list-style-type: none"> • Forest workers with current First Aid Certificate. • A First Aid Kit is maintained and located at the work place (field).

PRINCIPLE 4: Community Relations and Worker's Rights – Forest management operations shall maintain or enhance the long-term social and economic well being of forest workers and local communities.

4.3 The rights of workers to organise and voluntarily negotiate with their employers shall be guaranteed as outlined in Conventions 87 and 98 of the International Labour Organisation (ILO).

Indicator	Means of Verification
4.3.1 All workers shall be able to form and join a trade union if they so choose without fear of intimidation or reprisal.	<ul style="list-style-type: none"> • Interviews with union representatives and workers • Collective agreements • Records of labour inspectorate
4.3.2 The FME shall be compliant with the Employment Relations Act.	<ul style="list-style-type: none"> • Interviews with representatives and workers • Collective agreements • Records of labour inspectorate

4.4 Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups (both men and women) directly affected by management operations.

Indicator	Means of Verification
4.4.1 The FME shall have an employment manual that includes, at a minimum, terms of employment, wages and benefit structure, reasons for termination, job descriptions and grievance procedure. The employment manual shall be provided to each employee. The FME shall retain signed affidavits that the employee has accepted a copy of the manual.	<ul style="list-style-type: none"> • Employment records
4.4.2 Layoffs shall be justified by the FME and carried out in ways that mitigate their social impact.	
4.4.3 Results of studies to assess the social impact of forest management practices shall be incorporated in Forest Management Plans.	<ul style="list-style-type: none"> • Accident and illness statistics are compiled and evaluated annually. • Changes in workforce structure and employment levels are documented and evaluated. • Suggestions and comments from consultations with directly interested parties are documented.
4.4.4 People and groups affected by management operations are consulted prior to the commencement of proposed forestry activities (e.g., logging, burning, spraying, and traffic) FME shall demonstrate that input from community participation and input was considered and taken into consideration when planning operations.	<ul style="list-style-type: none"> • Their participation can be verified. • Agreements are integrated into the forest Management Plan.

PRINCIPLE 4: Community Relations and Worker's Rights – Forest management operations shall maintain or enhance the long-term social and economic well being of forest workers and local communities.

4.5 Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.

Indicator	Means of Verification
4.5.1 There shall be an agreed description of the baseline social and environmental conditions of the resources, current harvest and standard of life prior to operations commencing.	<ul style="list-style-type: none"> • EIA Report • Report stating condition and quality of resources (Socio-Economic -Environmental Baseline Study Report)
4.5.2 The FME shall develop and implement a dispute resolution procedure for resolving grievances and determining compensation in consultation with relevant stakeholders. The FME shall document and maintain records of all disputes.	<ul style="list-style-type: none"> • Dispute resolution procedure/policy signed by relevant stakeholders

PRINCIPLE 5: Benefits from the Forest – Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.

5.1 Forest management should strive toward economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.

Note: The Forest Management Enterprise has the responsibility for the economic opportunities and risks resulting from his commitment to an ecologically responsible, socially beneficial, and economically viable forest management. This principle establishes the importance of the economic viability of an ecologically operating individual enterprise as well as the important role of the forestry and timber industry as a whole in the economic development of a viable rural area. Economically, sustainable forest management shall in the long run secure and create income and jobs in structurally poor rural areas.

Indicator	Means of Verification
5.1.1 The FME shall have a long-term business plan and an annual operating budget. Funds shall be allocated to carry out the Management Plan and maintain FSC certification.	<ul style="list-style-type: none"> • FME long-term business plan • FME annual operating budget • Accounting system
5.1.2 The FME shall have an adequate accounting system to record income and expenditures.	
5.1.3 The FME shall promote regional and local commercially viable "value adding".	<ul style="list-style-type: none"> • Evidence of evaluation and the promotion of commercially viable opportunities

5.2 Forest management and marketing operations should encourage the optimal use and local processing of the forest's diversity of products.

Indicator	Means of Verification
5.2.1 The FME shall evaluate and document options for optimizing forest products value and utilizing the diversity of products from the forest management unit.	<ul style="list-style-type: none"> • A report of the exercise which evaluates different options for enhancing the optimal use of forest products from the management unit
5.2.2 First preference for the processing logs shall be given to local processors, provided that they meet financial and manufacturing qualifications.	

PRINCIPLE 5: Benefits from the Forest – Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.

5.3 Forest management should minimise waste associated with harvesting and on-site processing operations and avoid damage to other forest resources.

Indicator	Means of Verification
5.3.1 The FME shall ensure that felling, skidding/yarding, bucking, sorting and handling are carried out in a way that minimizes breakage and damage while optimizing log utilization, grade and value.	<ul style="list-style-type: none"> • Waste Assessment Reports • Yield Reconciliation Report • Contract agreement specifies that FME is satisfied that all utilisable logs are removed, and that they have clearance to commence on a new coupe
5.3.2 The FME shall ensure that harvesting and post harvest activities are carried out in a way that minimizes damage to the residual stand, other ecosystem components, and special features.	<ul style="list-style-type: none"> • Field observation that FME minimizes damage from felling and removal, damage to fallen logs, natural regrowth and soils. • Tree harvesting and thinnings are guided by current best practices. • Removal of unused biomass is minimized; branches and bark pieces remain in the forest, as far as possible. • The protective measures are specified in the Management Plan and agreements with contractors. • Biodegradable oils are used in the managed forest area.
5.3.3 Controlled burning shall be prohibited in native forests.	<ul style="list-style-type: none"> • All incidences of burning are thoroughly investigated by the appropriate authorities.
5.3.4 The FME shall ensure that relevant personnel receive appropriate instruction, training and/or incentives to minimize damage to the residual stand, other ecosystem components, and special features.	<ul style="list-style-type: none"> • Training materials. • Interviews with operators regarding training in damage avoidance.
5.3.5 The FME shall consider optimal usage of waste products in line with Principle 5.	<ul style="list-style-type: none"> • FME Annual Report

5.4 Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.

Indicator	Means of Verification
5.4.1 The FME, in consultation with the local community, shall evaluate and document options for diversifying the local economy including potential production of non-timber forest products within the management unit.	<ul style="list-style-type: none"> • Report on evaluation of potential NTFPs in the FME.
5.4.2 The FME shall develop, document and implement an equitable and transparent procedure for establishing fair market value for forest products purchased and contracted services.	<ul style="list-style-type: none"> • Report on evaluation of potential NTFPs in the FME.

PRINCIPLE 5: Benefits from the Forest – Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.

5.5 Forest management operations shall recognise, maintain, and, where appropriate, enhance the value of forest services and resources such as watersheds and fisheries.

Indicator	Means of Verification
5.5.1 The FME, in consultation with the local communities, shall identify and describe the full range of forest services and resources, and the potential impact of the forest management on these services and resources.	<ul style="list-style-type: none"> • Documentation (includes Community Plan) • Interview with local community
5.5.2 Forest management practices shall be planned and implemented so as to minimise negative impacts on the value of forest services and resources.	<ul style="list-style-type: none"> • Documentary inspection and interview with local community • Field observation
5.5.3 The FME shall ensure that training and supervision is provided to forest workers in order to prevent negative impacts on these services.	<ul style="list-style-type: none"> • Training material • Field observation
5.5.4 Inspection of effects of the operation on forest services and resources shall be included in the monitoring and review processes.	<ul style="list-style-type: none"> • Documentary inspection. • Expert assessment.

5.6 The rate of harvest of forest products shall not exceed levels which can be permanently sustained.

Indicator	Means of Verification
5.6.1 The FME shall conduct a stratified forest resource inventory, appropriate to the scale of the operation.	<ul style="list-style-type: none"> • Resource inventory report
5.6.2 The replenishment rates of individual species shall be determined and documented using scientifically established growth and yield data collection and projection methods or credible growth simulation models.	<ul style="list-style-type: none"> • Species growth analysis reports (rough estimates until more accurate data is available)
5.6.3 The rate of harvest shall maintain the species diversity and abundance.	<ul style="list-style-type: none"> • Resource inventory report and projected harvesting rates according to the species growth analysis reports.
5.6.4 Harvests shall be documented by a volume, species and geographic locality and be made available to parties of interest, such as the resource owners, logging contractors, FSC auditors.	<ul style="list-style-type: none"> • Harvesting report
5.6.5 Enrichment planting shall be implemented to ensure species replenishment when natural regeneration is not adequate.	<ul style="list-style-type: none"> • Management plan • Field achievements – monthly report

PRINCIPLE 6: Environmental Impact – Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

6.1 Assessment of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources – and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.

Indicator	Means of Verification
<p>6.1.1 An assessment of the environmental impacts of harvesting and processing operations shall be completed prior to the commencement of site-disturbing activities that includes the following aspects:</p> <ul style="list-style-type: none"> i. Characterisation of ecosystems in the forest management area using biological and geo-physical information, ii. Impact on: <ul style="list-style-type: none"> - native plants, animals and ecosystems, - habitats of rare and endangered species, - forest connectivity and fragmentation, - tabu or culturally significant sites, - physical and chemical soil stability, - water resources including water quality and quantity in catchments, - downstream river and coastal systems, - Visual and aesthetic aspects, and - both larger scale landscape level and smaller stand level. iii. Impacts of: <ul style="list-style-type: none"> - Use and disposal of fuel, oil, chemicals, preservatives and non-organic waste. iv. consideration of timber species on either local and /or international endangered or threatened species of flora and fauna lists (e.g. CITES Appendix 1, any national registry). v. Community wild food sources – plants and animals. 	<ul style="list-style-type: none"> • EIA Report of the areas involved with forest harvesting, processing operations (in the cases of portable sawmills), areas surrounding the forest management unit (landscape) and any downstream ecosystems, such as river silting and/or coral reef silt smothering.
<p>6.1.2 Potential environmental impacts identified during assessments shall be considered in management and harvest planning and operations shall be designed to avoid or mitigate adverse impacts</p>	<ul style="list-style-type: none"> • EIA and monitoring reports
<p>6.1.3 Field assessments shall be documented, translated into the common local language and made available to local resource owners.</p>	

PRINCIPLE 6: Environmental Impact – Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

6.2 Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping and collecting shall be controlled.

Indicator	Means of Verification
6.2.1 Prior to the start of the operation, an assessment shall be carried out for any endemic, rare, threatened and endangered species of fauna and flora and their habitat (emphasising local anecdotal information as well as scientific inventories).	<ul style="list-style-type: none"> • Inventory or assessment report on endemic, rare, threatened or endangered species of flora and fauna and their habitats for forest operation area.
6.2.2 The FME shall facilitate the training of employees, surrounding communities and contractors in recognising endangered species of fauna and flora.	<ul style="list-style-type: none"> • Awareness Reports with local communities and forest workers. • On-site interviews
6.2.3 Conservation areas and/or habitat protection zones for rare threatened and endangered species shall be identified, mapped, and established for refuge, feeding and reproduction. These protection areas or zones shall be established using the most current and credible scientific information available	<ul style="list-style-type: none"> • List of endemic, threatened, endangered and rare species. • Conservation strategy for listed species developed with expert biological assistance. • Conservation areas and habitat zone shown on Harvesting Plan • Demarcation of conservation areas and habitat zone for threatened, endangered and rare species have been developed with expert biological assistance.
6.2.4 The FME shall ensure that all reasonable measures are taken to prevent hunting, trapping, fishing, poaching or collecting of rare, endangered or threatened species of fauna and flora	<ul style="list-style-type: none"> • Record of offenders and follow-up actions.
6.2.5 The FME shall have an established policy for areas set aside for conservation purposes.	<ul style="list-style-type: none"> • Policy in place for areas set aside for conservation purposes
6.2.6 FME shall not log in areas identified in the Preliminary List of Sites of National Significance, and biodiversity hotspots as included in the NBSAP. <ul style="list-style-type: none"> • Sites of national significance are demarcated in the Harvesting Plan and <i>Community Resource Inventory Map</i> • Natural areas of significance/ biodiversity hotspots are demarcated on the Harvesting Plan 	<ul style="list-style-type: none"> • Documentation

PRINCIPLE 6: Environmental Impact – Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including:

- a) Forest regeneration and succession.**
- b) Genetic, species, and ecosystem diversity.**
- c) Natural cycles that affect the productivity of the forest ecosystem.**

Indicator	Means of Verification
6.3.1 Key ecosystem functions, values and natural cycles shall be identified, described and documented in consultation with the resource owners.	<ul style="list-style-type: none"> Community participation report identifying and describing key ecosystem functions and values and natural cycles.
6.3.2 Forest resource structure and composition surveys/inventories shall be completed before any areas are harvested.	<ul style="list-style-type: none"> Environment Impact Assessment Report
6.3.3 Silviculture and management systems shall maintain forest composition, structure and dynamics, including: <ul style="list-style-type: none"> Species that have a population structure that does not favour their regeneration, shall be spared during harvest or become part of silviculture treatments that ensure maintenance of their natural population. The selection of tree species for harvest shall be based on the composition of the natural forest (e.g. to prevent high grading or species reduction). 	<ul style="list-style-type: none"> Management Plan shows original forest composition, structure and dynamics are maintained.
6.3.4 Natural regeneration shall be the primary means of regeneration, however if natural regeneration is not sufficient, seedling trans-location, and replanting with locally grown genetic stock shall be the preferred alternatives.	<ul style="list-style-type: none"> Management Plan shows original forest composition, structure and dynamics are maintained.
6.3.5 In order to ensure reproduction of the species in the forest management unit, parent or seed trees shall be retained, with due consideration of their density, distribution and quality.	<ul style="list-style-type: none"> Parent or seed trees are identified and marked on the Harvesting Plan and in the field.
6.3.6 The FME shall identify, document, map and facilitate restoration of degraded areas in consultation with resource owners.	<ul style="list-style-type: none"> Identification and classification of degraded sites for restoration. Field observation. FME maps FME Management Plan Restoration Plan

PRINCIPLE 6: Environmental Impact – Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.

Indicator	Means of Verification
<p>6.4.1 Forest managers shall retain representative samples of natural ecosystems. The size and configuration of the representative areas depend on the:</p> <ul style="list-style-type: none"> • extent of representation of their forest types within the landscape (less protection calls for more representative samples); • ecological importance of setting aside stands and tracts to other conservation efforts (a minimum size and ecological value is needed to make representative samples useful); and • intensity of forest management within the forest and across the landscape (a less intensively managed forest or landscape calls for less area of representative samples, and a more intensively managed forest or landscape calls for more). 	<ul style="list-style-type: none"> • Natural ecosystems identified • The FME has identified its responsibilities in respect to natural ecosystems and has a plan to implement these • Areas identified for retention are demarcated in Harvesting Plan and on the ground & are an integral part of FME responsibility. • Field and documented inspection of site
<p>6.4.2 Methodologies for characterising ecosystems found in the landscape and for determining representative samples, shall be based on conservation science, and utilise existing methodologies and databases such as Conservation Needs Assessment and Fragile Forest Types</p>	<ul style="list-style-type: none"> • The methodologies, as appropriate, are incorporated in the FME Plan which identifies its responsibilities in respect to natural ecosystems
<p>6.4.3 Continuous corridors for fauna refuge shall be maintained in the management unit.</p>	<ul style="list-style-type: none"> • Management Plans demonstrates connectivity/corridors for fauna for representative reserve areas.

6.5 Written guidelines shall be prepared and implemented to: control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and protect water resources.

Indicator	Means of Verification
<p>6.5.1 The FME shall be in full compliance with the Fiji Forest Harvesting Code of Practice</p>	<ul style="list-style-type: none"> • Documentation of compliance to the Fiji Forest Harvesting Code of Practice.
<p>6.5.2 The FME shall develop and utilise low-impact logging techniques</p>	<ul style="list-style-type: none"> • Low impact logging guidelines being used • Low impact logging techniques being used

PRINCIPLE 6: Environmental Impact – Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

6.6 Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A & 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment & training shall be provided to minimize health & environmental risks.

Indicator	Means of Verification
6.6.1 The FME shall employ silvicultural systems, integrated pest management, and strategies to control vegetation that result in the least adverse environmental impact.	<ul style="list-style-type: none"> Components of silvicultural systems, integrated pest management, and vegetation control strategies may include: <ul style="list-style-type: none"> i. creation and maintenance of habitat that discourages pests ii. creation and maintenance of habitat that encourages natural predators iii. evaluation of pest populations and establishment of action thresholds iv. diversification of species composition (see Glossary) and structure v. use of low-impact mechanical methods vi. use of prescribed fire
6.6.2 Chemical pesticides shall be used only when non-chemical management practices have been proven ineffective or cost prohibitive.	<ul style="list-style-type: none"> Documentation of strategies, experiments and trials of integrated pest management or non-chemical weed, pest and disease control.
6.6.3 The FME shall develop written strategies to control pests as a component of the Management Plan (see Criterion 7.1).	<ul style="list-style-type: none"> Management Plan has strategy for pest control
6.6.4 When chemicals are used, a written prescription shall be prepared that fully describes the risks and benefits of their use and the precautions that workers must employ.	
6.6.5 Records shall be kept to document the occurrences of pests, measures to control them, and incidences of worker exposure to chemicals.	
6.6.6 Employees shall be trained in proper the handling, storage, and disposal of chemicals. Chemicals are applied according to label directions, and protective equipment is both available and used.	<ul style="list-style-type: none"> Field observation of appropriate equipment, protective clothing, adequate training and recognised procedures for any chemical use. Records of all chemical use and incidents involving chemicals.
6.6.7 A Field Manual on proper handling, storage and disposal of chemicals shall be developed and implemented.	

PRINCIPLE 6: Environmental Impact – Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

6.6.8	Chemicals used shall be narrowly targeted to the pest being controlled.	<ul style="list-style-type: none">• Environmental impact studies and a positive register in Monitoring Reports.
6.6.9	Chemicals shall be used only when they pose no threat to supplies of domestic water, aquatic habitats, or sensitive species or plant community types.	
6.6.10	Chemicals prohibited by the FSC (FSC-POL-30-601) or those banned in Europe, U.S. and target country, or World Health Organization Type 1A or 1B and chlorinated hydrocarbon pesticides shall not be used. The exception is when a formal derogation has been granted by the FSC. In such cases, the FMO follows the terms of the approved derogation.	
6.7 Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.		
Indicator		Means of Verification
6.7.1	All non-organic waste products shall be identified and categorised.	<ul style="list-style-type: none">• Register of approved non-organic wastes used.• Field Manual on the identification, potential impacts, categorisation and appropriate disposal methods (including reusing/recycling) of non-organic waste products• Inventory of non-organic waste used on FME• List of permitted and prohibited activities in the contract/lease agreement in 3 languages (English, Fijian & Hindi), where applicable.• Violation records – occurrence & disciplinary action.
6.7.2	All non-organic wastes (such as oil, tyres, containers etc) shall be minimised, including through reusing or recycling.	
6.7.3	Environmentally appropriate methods shall be employed for the disposal of non-biodegradable wastes that cannot be reused or recycled. Disposal of all non-organic waste products shall be at legally designated disposal sites, in line with Fiji's national policies on waste disposal (Public Health Act, Environment Management Act and the Litter Act)	
6.7.4	Waste disposal procedures shall be developed and implemented.	<ul style="list-style-type: none">• Appropriate disposal facilities on-site• Procedures to remove non-organic waste from FME to approved site• Field interviews & observation• A positive register in Monitoring Reports.
6.7.5	Equipment shall not be parked in riparian management zones, near sinkholes, or ground water supplies, open water bodies (rivers, streams, creeks) where fluids can leak into them.	<ul style="list-style-type: none">• Field observation• Documentation (Field Manual)
6.7.6	Discarded equipment and parts, as well as waste oil and related containers, shall be removed from the forest and disposed of at designated off-site collection centres.	<ul style="list-style-type: none">• Field observation• Documentation (Field Manual)

PRINCIPLE 6: Environmental Impact – Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

6.7.7	Broken and leaking equipment and parts shall be repaired or removed from the forest; discarded parts shall be taken to a designated disposal facility.	<ul style="list-style-type: none">• Field observation• Documentation (Field Manual)
6.7.8	In the event of a spill of hazardous material, the FME shall ensure that the material is immediately contained, the spill is reported as required by applicable regulations, and qualified personnel are engaged to perform the appropriate removal and remediation.	<ul style="list-style-type: none">• Field Manual will detail procedures to be undertaken in the event of spillage.
6.7.9	The FME shall develop an emergency hazardous material spill plan and procedures. The FME shall train relevant workers in emergency hazardous material spill procedures.	
6.8 Use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.		
Indicator		Means of Verification
6.8.1	The FME shall have a system for the recording, monitoring and control of the use of Biological Control agents.	<ul style="list-style-type: none">• Documentation: plans, monitoring records, log books• Inspection of storage and transport facilities
6.8.2	The international agreements and national standards on the storage, transportation and use of biological control agents shall be applied.	
6.8.3	Genetically modified organisms shall not be used.	Genetically modified organisms not present
6.9 The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.		
Indicator		Means of Verification
6.9.1	The introduction of the exotic species shall not breach the Quarantine Act nor the Biosecurity Act	<ul style="list-style-type: none">• Documentation (includes certificate to import the exotic species)• Risk Assessment Report
6.9.2	Social, environmental and economic aspects shall be considered before the introduction of any exotic species,	<ul style="list-style-type: none">• Risk Assessment Report

PRINCIPLE 6: Environmental Impact – Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

6.9.3	In natural forest management, the use of exotic species is generally prohibited. Very limited exceptions are made when there are no other local species with sufficient performance to restore impoverished or degraded sites and any use shall be carefully controlled and monitored.	<ul style="list-style-type: none"> • EIA and Monitoring Reports
6.9.4	Procedures shall be in place to avoid the unintentional invasion of exotic species through ensuring any equipment arriving from other forest regions is thoroughly clean and free of soil, seed and vegetative matter.	<ul style="list-style-type: none"> • Field observation • Procedures in the Management Plan
6.9.5	The management, control and monitoring of exotic species shall be documented.	<ul style="list-style-type: none"> • EIA of exotic species on native plants, animals and ecosystems, and especially invasiveness. • Monitoring reports
<i>6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion:</i> <ol style="list-style-type: none"> <i>entails a very limited portion of the forest management unit; and</i> <i>does not occur on high conservation value forest areas; and</i> <i>will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit.</i> 		
Indicator		Means of Verification
6.10.1	FME shall not convert natural forests or other thriving non-forested ecosystem to plantations or non-forest land uses, except where the conversion meets the conditions of 6.10.2 – 6.10.3.	<ul style="list-style-type: none"> • Field observation • EIA Report
6.10.2	Prior to any conversion, conservation benefits shall be identified and assessed in cooperation with acknowledged experts.	
6.10.3	High Conservation Value Forest shall not be converted to plantation or non-forest land uses.	<ul style="list-style-type: none"> • Field observation • EIA Report

PRINCIPLE 7: Management Plan – A management plan appropriate to the scale and intensity of the operations shall be written, implemented, and kept up to date. The long term objectives of management, and the means of achieving them, shall be clearly stated.

7.1 The management plan and supporting documents shall provide:

- a) **Management objectives.**
- b) **Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands.**
- c) **Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories.**
- d) **Rationale for rate of annual harvest and species selection.**
- e) **Provisions for monitoring of forest growth and dynamics.**
- f) **Environmental safeguards based on environmental assessments.**
- g) **Plans for the identification and protection of rare, threatened and endangered species.**
- h) **Maps describing the forest resource base including protected areas, planned management activities and land ownership.**
- i) **Description and justification of harvesting techniques and equipment to be used.**

Indicator	Means of Verification
<p>7.1.1 The Management Plan and supporting documents, with consideration of scale and intensity of the operation, shall provide at least the following:</p> <ol style="list-style-type: none"> i. Resource inventories that shall include details of species composition, abundance, diameter distribution and volume, and that shall be of an intensity appropriate to the scale of the operation ii. Written operational guidelines and procedures for the layout, design and maintenance of roads and other access and extraction networks in accordance with Criterion 6.5 above iii. Written operational guidelines and rules for harvesting and extraction in accordance with Criterion 6.5 above iv. Environmental safeguards based on environmental assessments that meet or exceed the Fiji Code of Forest Harvesting Practice, and guidelines of the Ministry of Environment. v. Maps describing the forest resource base including all the information of the land use plan(s), buffer zones, road alignments, planned management activities and land ownership. vi. Description and justification of harvesting and extraction techniques and equipment to be used, clearly showing standards meeting or exceeding those of the Fiji Code of Forest Harvesting Practice. vii. Records of village meetings, consultations, visits and any negotiations involving forest management activities viii. Health and safety provisions ix. Any rules for hunting, fishing, collection and occupation, and illegal harvesting 	<ul style="list-style-type: none"> • Documentation (The Management Plan and supporting documents)

PRINCIPLE 7: Management Plan – A management plan appropriate to the scale and intensity of the operations shall be written, implemented, and kept up to date. The long term objectives of management, and the means of achieving them, shall be clearly stated.

7.1.2	A clear rationale for rate of annual harvest, species selection, minimum felling diameters, regeneration strategies and felling cycles shall be documented. Pre-harvest Inventory of all trees legally prescribed DBH ¹ and above shall be completed for blocks to be harvested. Annual harvest shall be in line with national forest policies.	<ul style="list-style-type: none"> • Documentation (The Management Plan, Harvesting Plan)
7.1.3	Subject to scale and type of operation, field level topographic maps shall be prepared before logging or road construction commence. The maps shall contain locations of: suitable for all-weather or dry-weather harvesting only; extraction (or haul) roads, log yards or ponds, main skid trails, drainage structures, set aside areas (i.e. buffer zones, protected areas, etc).	<ul style="list-style-type: none"> • Documentation (The Management Plan, Harvesting Plan)
7.1.4	Non-timber forest products shall be inventoried and their sustainable management shall be explicitly considered during planning.	<ul style="list-style-type: none"> • Documentation (Inventory report & Management Plan)
7.1.5	Disaster (fire/cyclone) management and control shall be properly evaluated and contingency procedures shall be in the Management Plan	<ul style="list-style-type: none"> • Documentation (The Management Plan)
<i>7.2 The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances.</i>		
Indicator		Means of Verification
7.2.1	The Management Plan shall be revised at least every 5 years and procedures shall be in place for incorporation of monitoring data into the management planning process	<ul style="list-style-type: none"> • Database with results of monitoring exercises. • Revised Management Plan
7.2.2	FMEs support research in areas that are relevant to management planning	<ul style="list-style-type: none"> • Research reports • Interviews
7.2.3	New information obtained by local experience and/or science, technical research or environmental assessment shall be incorporated into the management planning.	<ul style="list-style-type: none"> • Revised Management Plan
7.2.4	Socio-economic information and research results shall be incorporated into management planning.	<ul style="list-style-type: none"> • Revised Management Plan

¹ DBH: Diameter at Breast Height (1.3m from ground)

PRINCIPLE 7: Management Plan – A management plan appropriate to the scale and intensity of the operations shall be written, implemented, and kept up to date. The long term objectives of management, and the means of achieving them, shall be clearly stated.

7.3 Forest workers shall receive adequate training and supervision to ensure proper implementation of the Management Plan.

Indicator	Means of Verification
7.3.1 The FME shall develop and implement a training program that covers all aspects of implementing the management plan. Forest workers shall receive such training at least annually.	<ul style="list-style-type: none"> Records of training programmes.
7.3.2 The FME shall ensure that regular monitoring visits of forest workers are adequate to assure forest workers' compliance with the implementation of the Management Plan. The FME shall document the monitoring visits and findings.	<ul style="list-style-type: none"> Monitoring report

7.4 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the Management Plan, including those listed in Criterion 7.1.

Indicator	Means of Verification
7.4.1 The Management Plan, or a summary of it, shall be available to the public for inspection, and translated into Fijian, English and Hindi (where applicable).	<ul style="list-style-type: none"> Management Plan Summary Translated versions of Management Plan Summary
7.4.2 The existence and availability of the Management Plan or its summary is well known among forest stakeholders	<ul style="list-style-type: none"> Register of relevant stakeholders Record of enquiries made Interviews with various stakeholders.

PRINCIPLE 8: Monitoring and Assessment – *Monitoring shall be conducted appropriate to the scale and intensity of forest management to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.*

8.1 *The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations as well as the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change.*

Indicator	Means of Verification
8.1.1 Appropriate to the scale and intensity of operations a documented monitoring program shall be in place.	<ul style="list-style-type: none"> • Documented monitoring program
8.1.2 Persons responsible for implementing and maintaining monitoring programs shall be identified.	<ul style="list-style-type: none"> • Persons responsible (with job description) listed in the monitoring program
8.1.3 Local communities, resource owners and persons directly affected by the FME operations shall be consulted for the design, implementation and evaluation of the monitoring program. The FME shall demonstrate that input from community participation was considered and taken into consideration in developing the monitoring program.	<ul style="list-style-type: none"> • Documentation - Community/stakeholder monitoring consultation report. • Field observation & Interview - Community/stakeholder participation in the implementation and evaluation of monitoring programs
8.1.4 The Monitoring Program shall include: <ol style="list-style-type: none"> elements to be monitored including HCVFs as set out under Criterion 9.4; monitoring indicator(s) for each element; rationale for the selection of each element and monitoring Indicator(s); consistent and replicable monitoring procedures; the frequency and intensity of monitoring, consistent with the nature of the monitoring indicator(s), management activities, environmental sensitivity of the site, assessed risks, stakeholder concerns, performance history, and changing environmental conditions; relevant baseline information. 	<ul style="list-style-type: none"> • The Monitoring Program includes components i. to vi. described in the Indicator
8.1.5 The monitoring plan shall be periodically updated and available to those doing the monitoring or working with monitoring data; and is in a form that can be easily cross-referenced to the Management Plan.	<ul style="list-style-type: none"> • Regularly revised monitoring plan is linked to Management Plan
8.1.6 Any change in monitoring procedure shall be documented, including details of any overlapping calibration when old and new procedures are run simultaneously.	<ul style="list-style-type: none"> • Documentation of revision and justification for change in monitoring procedure(s)
8.1.7 Monitoring records shall be compiled in a secure, accessible monitoring database(s).	<ul style="list-style-type: none"> • Monitoring database(s)
8.1.8 An adequate mechanism shall be implemented for quality assurance and quality control of the monitoring program.	<ul style="list-style-type: none"> • Approved monitoring guidelines and procedures adhered to.
8.1.9 According to timeframes for monitoring each element set out in the monitoring program, the monitoring results shall be analysed, documented, summarized, and implemented.	<ul style="list-style-type: none"> • Management plans are accordingly adjusted on recommendations resulting from monitoring reports and implemented.

PRINCIPLE 8: Monitoring and Assessment – *Monitoring shall be conducted appropriate to the scale and intensity of forest management to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.*

8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators:

- a) **Yield of all forest products harvested.**
- b) **Growth rates, regeneration and condition of the forest.**
- c) **Composition and observed changes in the flora and fauna.**
- d) **Environmental and social impacts of harvesting and other operations.**
- e) **Costs, productivity, and efficiency of forest management.**

Indicator	Means of Verification
<p>8.2.1 The FME shall maintain records of standing inventories of timber and harvest volumes of timber and non-timber tree species (quality and quantity).</p> <p>For example: Significant unanticipated removal of forest products (e.g. theft and poaching) is monitored and recorded.</p>	<ul style="list-style-type: none"> • Forest product inventory
<p>8.2.2 The following forest characteristics shall be researched and monitored (with information collated in a database) for Permanent sampling plots (PSPs) and monitoring sites in the FME.</p> <ol style="list-style-type: none"> i. Timber growth and mortality (for volume control systems); ii. Stocking, and regeneration; iii. Stand-level and forest-level composition and structure (e.g., by use of tools, such as ecological classification systems); iv. Abundance, regeneration, and habitat conditions of non-timber forest products; v. Terrestrial and aquatic features; vi. Soil characteristics (e.g., texture, drainage, existing erosion); vii. Pest conditions. 	<ul style="list-style-type: none"> • Forest biological survey and stock assessment reports that form the baseline and of which the variables are entered into the database.
<p>8.2.3 The FME shall periodically monitor the forest for changes in major habitat elements and in the occurrence of sensitive, rare, threatened, or endangered species or communities.</p>	<ul style="list-style-type: none"> • Forest monitoring report
<p>8.2.4 Environmental and social impacts of forest management operations on local communities shall be monitored. Monitoring shall disaggregate information/data by gender and shall include:</p> <ol style="list-style-type: none"> i. Population and demographic changes. ii. Health status. iii. Educational status. iv. Social structures . v. Economic status, including household income and economic activities. vi. Equity and distribution of any benefits. vii. Level of employment and training received. viii. Creation or maintenance of local jobs and public responses to management activities. ix. Sites of special significance to local communities, resource (in consultation with local representatives see Principle 3). 	<ul style="list-style-type: none"> • Socio-economic and environment and monitoring report

PRINCIPLE 8: MONITORING AND ASSESSMENT – *Monitoring shall be conducted appropriate to the scale and intensity of forest management to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.*

8.2.5	<p>The environmental effects of site-disturbing activities shall be monitored (e.g., road construction and repair, harvesting, and site preparation).</p> <p>For example:</p> <ul style="list-style-type: none"> Monitoring for compliance with Best Management Practices is carried out. A monitoring program is in place to assess the condition and environmental impact of the road system and landings. 	<ul style="list-style-type: none"> Documents: Environment impact assessment and monitoring reports Field observation Interviews
8.2.6	Monitoring of environmental impact shall include waste management.	<ul style="list-style-type: none"> Documents: Environment impact assessment and monitoring reports Field observation Interviews
8.2.7	The FME shall monitor the cost and revenues of management in order to assess productivity and efficiency.	<ul style="list-style-type: none"> FME annual financial reports Monitoring reports Audit reports (eg. From Auditor General) & financial audit reports.
8.3 Documentation shall be provided by the forest manager to enable monitoring and certifying organisations to trace each forest product from its origin, a process known as the "chain of custody."		
	Indicator	Means of Verification
8.3.1	An effective identification system shall exist that physically marks forest products leaving certified forest areas.	<ul style="list-style-type: none"> Marks or labels on certified wood products in the yard.
8.3.2	<p>The FME shall develop and implement documented procedures to:</p> <ol style="list-style-type: none"> identify FSC-certified products from the forest of origin to the forest gate, record annual volumes of log shipments and by purchaser on a monthly basis; provide information on transportation and invoice documentation that includes , FSC certification code number, shipper, date, volume, species, origin and destination; 	<ul style="list-style-type: none"> Documented procedure. Evidence of implementation of the procedure, including documentation (e.g., scale records, bills of lading) related to the date of sale, origin, specifications, quantity and FSC certification registration code of products passing though the forest gate.
8.4 The results of monitoring shall be incorporated into the implementation and revision of the Management Plan.		
	Indicator	Means of Verification
8.4.1	Findings from monitoring shall be regularly summarized, analysed and documented to identify discrepancies between outcomes (e.g., yields, growth, ecological changes) and expectations (e.g., plans, forecasts, anticipated impacts). Action to mitigate the negative impacts and reinforce the positive impacts of forest management and harvest of forest products activities shall be demonstrated.	<ul style="list-style-type: none"> Monitoring report Field observations

PRINCIPLE 8: MONITORING AND ASSESSMENT – *Monitoring shall be conducted appropriate to the scale and intensity of forest management to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.*

8.4.2	The results of monitoring shall be incorporated into periodic revisions of the Management Plan, policies and procedures.	<ul style="list-style-type: none"> Revised Management Plan, policies and procedures
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8.5 *While respecting the confidentiality of information, forest managers shall make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2.*

Indicator		Means of Verification
8.5.1	While respecting the confidentiality of sensitive commercial information, a public summary of monitoring results shall be available and at least the following data shall be included: monitoring aims, observations, main results and stakeholders. The document shall be translated into Fijian, English and Hindi (where applicable).	<ul style="list-style-type: none"> Monitoring report summary Translated versions of monitoring report summary

PRINCIPLE 9: Maintenance of High Conservation Value Forests –
Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.

9.1 Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest management.

Indicator	Means of Verification
<p>9.1.1 Attributes and locations of High Conservation Value Forests (as defined in the Glossary) shall be determined by</p> <ul style="list-style-type: none"> i. Identification of globally scaled HCVF attributes that may be present in the forest ii. Identification and description of regionally and locally scaled HCVF attributes and areas that may be present in the landscape and/or certified forest iii. Broadly based consultations with stakeholders and scientists iv. Public review of proposed HCVF attributes and areas v. Integration of information from consultations and public review into proposed HCVF delineations vi. Delineation of a proposed HCVF by maps and habitat descriptions 	<ul style="list-style-type: none"> • Reports of participatory meetings with landholders and stakeholders (including National Trust of Fiji, environment Non-Government Organisations, The University of the South Pacific) to identify any high conservation attributes. • HCVF Assessment Report • Maps delineating any HCVF areas
<p>9.1.2 The FME shall identify forests with ecologically high conservation value, if necessary with assistance from the National Trust of Fiji, conservation organizations, and local experts. For example, documentation of rarity or threat to particular forest types is provided by the Forestry Department, NGOs, the National Trust of Fiji or local experts.</p>	<ul style="list-style-type: none"> • Reports of participatory meetings with landholders and stakeholders (including National Trust of Fiji, environment Non-Government Organisations, The University of the South Pacific) to identify any high conservation attributes. • HCVF Assessment Report • Maps delineating any HCVF areas
<p>9.1.3 The conservation of social and cultural values shall be assessed in cooperation with Native Land Trust Board, Fijian Affairs Board, Fiji Museum, private organizations, universities, and local experts.</p>	<ul style="list-style-type: none"> • Reports of consultation meetings with landholders and stakeholders (including National Trust of Fiji, environment Non-Government Organisations, The University of the South Pacific) to identify any high conservation attributes. • HCVF Assessment Report • Maps delineating any HCVF areas

9.2 The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.

Indicator	Means of Verification
<p>9.2.1 The HCVF assessment report shall be been made available for review by qualified specialists, directly affected persons and relevant interests (e.g., NLTB and FAB, local communities, conservation organizations).</p>	<ul style="list-style-type: none"> • HCVF Assessment report publicly available • Interviews

PRINCIPLE 9: Maintenance of High Conservation Value Forests –
Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.

9.2.2	The FME shall identify and document options and rationale, in consultation with stakeholders and qualified specialist, for the maintenance of any high conservation attributes.	<ul style="list-style-type: none"> Documentation of options considered by the FME for the maintenance of high conservation attributes. Records of participatory meetings with landholders, stakeholders, & appropriate experts as part of the land use planning process to consider options for maintenance of any high conservation values identified.
9.2.3	The advice and comments received through consultation referred to in Indicators 9.2.1 and 9.2.2, shall be documented and maintained by the FME, and shall be made publicly available.	<ul style="list-style-type: none"> Register of public concerns/ suggestions with annual summary for attachment on the FME Annual Report

9.3 The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.

Indicator		Means of Verification
9.3.1	Harvest and forest management plans shall include protection and conservation of HCVF.	<ul style="list-style-type: none"> Management Plan and Harvesting Plan.
9.3.2	Commercial (industrial) harvesting in HCVF shall be not allowed, consistent with the precautionary principle, where harvesting could potentially or actually result in these forests losing their unique characteristics.	<ul style="list-style-type: none"> Management Plan and Harvesting Plan. Field visit.
9.3.3	Forest management activities in HCVF shall be planned in consultation with local stakeholders and resource owners.	<ul style="list-style-type: none"> Management Plan and Harvesting Plan. Maps with the outlined borders of HCVF. Interviews with local population. Field visit
9.3.4	Measures for HCVF protection and conservation shall be included in the public summary of forest Management Plan (also see Criterion 7.4)	<ul style="list-style-type: none"> List of measures for HCVF protection and conservation. Interviews with local population Interviews with representatives of environmental organizations.

9.4 Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.

Indicator		Means of Verification
9.4.1	The FME shall develop and implement a program to monitor the status of the applicable HCVFs, including the effectiveness of the measures employed for their maintenance or restoration. The monitoring program shall be designed and implemented consistent with the requirements of Principle 8.	<ul style="list-style-type: none"> Documented HCVF monitoring program – Monitoring Plan. Results of monitoring program – Monitoring Report. Field inspection Interviews

PRINCIPLE 9: Maintenance of High Conservation Value Forests – Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.

<p>9.4.2 The monitoring program is capable of alerting the applicant to changes in the status of a conservation attribute, and determining if the conservation measures are effective in maintaining or restoring the conservation attribute. The results of monitoring are assessed consistent with the monitoring requirements of Indicator 8.1.1.</p>	<ul style="list-style-type: none"> • Documented HCVF monitoring program – Monitoring Plan. • Results of monitoring program – Monitoring Report. • Field inspection • Interviews
<p>9.4.3 When monitoring results indicate increasing risk to a specific conservation attribute, the FME shall re-evaluate the measures taken to maintain or enhance that attribute, and adjusts the management measures to reverse the trend.</p>	<ul style="list-style-type: none"> • Documented HCVF monitoring program – Monitoring Plan. • Results of monitoring program – Monitoring Report. • Field inspection • Interviews

PRINCIPLE 10: Plantations – Plantations shall be planned and managed in accordance with Principles and Criteria 1 – 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.

10.1 The management objectives of the plantation, including natural forest conservation and restoration objectives, shall be explicitly stated in the management plan, and clearly demonstrated in the implementation of the plan.

Indicator	Means of Verification
10.1.1 The Management Plan shall identify existing plantations that are to be maintained (commercial plantations) and those that are to be restored to more natural forest conditions (restoration plantations [see applicability note under 10.9]). The objectives of plantations shall be clearly justified in the Management Plan.	<ul style="list-style-type: none"> • Documentation (Management Plan) • Field visit • Interviews
10.1.2 Commercial plantations shall be maintained within a broader landscape matrix such that they complement, or do not compromise, the high conservation values of the forest landscape.	<ul style="list-style-type: none"> • Documentation (Management Plan) • Field visit • Interviews

10.2 The design and layout of plantations should promote the protection, restoration and conservation of natural forests, and not increase pressures on natural forests. Wildlife corridors, streamside zones and a mosaic of stands of different ages and rotation periods, shall be used in the layout of the plantation, consistent with the scale of the operation. The scale and layout of plantation blocks shall be consistent with the patterns of forest stands found within the natural landscape.

Indicator	Means of Verification
10.2.1 Natural vegetation areas within and adjacent to the plantation shall be identified and documented in the management plan.	<ul style="list-style-type: none"> • Documentation (Management and Harvesting Plans) • Maps • Interviews • Field Visits
10.2.2 The FME shall identify, restore and protect areas within the estate which are not suitable for planting and harvesting of plantation species (because of slope, rocky ground or other reasons)	<ul style="list-style-type: none"> • Documentation (Management and Harvesting Plans) • Maps • Interviews • Field Visits
10.2.3 All prescribed buffer zones shall be protected and additional areas may be identified, restored and protected to promote connectedness and wildlife corridors	<ul style="list-style-type: none"> • Documentation (Management and Harvesting Plans) • Maps • Interviews • Field Visits
10.2.4 The need for wildlife corridors for rare, threatened, and endangered species shall be assessed within the ecological landscape and managed appropriately, in accordance with the needs of identified species, in designated Reserve Areas.	
10.2.5 Species selection and/or silvicultural regimes are selected so that different age class and rotation periods may be used.	

PRINCIPLE 10: Plantations – Plantations shall be planned and managed in accordance with Principles and Criteria 1 – 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.

10.2.6	Visual landscape objectives shall be developed in consultation with local communities, resource owners and/or other affected stakeholders. At the minimum the visual objectives shall take into account the following : • Village view sheds • Cultural sites • Roadside harvest on state highways • Significant natural features – vantage points • Backdrops to urban areas	
10.2.7	Plantation design and layout shall minimise soil degradation and erosion and protect soil and water quality by accounting for slope, aspect, erodibility, and movement of surface water. Cross-ref C 6.5	
10.2.8	Plantation management shall minimise soil degradation and erosion and protect soil and water quality, and movement of surface water. For example, replanting immediately after harvesting, within the first year, before the next rainy season, assuming secure leasing arrangements are concluded with the resource owners.	
10.2.9	The design and management of plantations established on degraded or deforested land shall show a commitment to restoration of habitat and indigenous vegetation. Note: “ <i>Commitment to restoration</i> ” can include the identification and protection of alternative habitats (wetlands, riparian strips, etc.); use of indigenous forest species, restoration of unharvestable areas, and areas set aside for preservation.	<ul style="list-style-type: none"> • Management Plan • Observation
10.3 Diversity in the composition of plantations is preferred, so as to enhance economic, ecological and social stability. Such diversity may include the size and spatial distribution of management units within the landscape, number and genetic composition of species, age classes and structures.		
Indicator		Means of Verification
10.3.1	The selection of species to be planted should: i. Maintain production and reserve areas within the Forest Management Unit ii. Enable the certificate holder to respond rapidly to changing market requirements, or supplies a diversity of markets iii. Use a diversity of genotypes iv. Have a mix of age classes and/or rotation lengths v. Use a variety of silvicultural regimes vi. Demonstrate an understanding of future market trends vii. Take into account local markets/ processors	<ul style="list-style-type: none"> • Documentation (Research Reports, Management Plans, Monitoring Reports) • Field visits • Interviews

PRINCIPLE 10: Plantations – Plantations shall be planned and managed in accordance with Principles and Criteria 1 – 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.

10.4 The selection of species for planting shall be based on their overall suitability for the site and their appropriateness to the management objectives. In order to enhance the conservation of biological diversity, native species are preferred over exotic species in the establishment of plantations and the restoration of degraded ecosystems. Exotic species, which shall be used only when their performance is greater than that of native species, shall be carefully monitored to detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts.

Indicator	Means of Verification
10.4.1 The management objectives for the FME shall reflect Criterion 10.4	<ul style="list-style-type: none"> • Documentation (Research reports Management plans, Monitoring Reports) • Field visits • Interviews
10.4.2 The use of exotic plant species (see Glossary) shall be contingent on scientifically credible analyses that the species in question is non-invasive and does not diminish biodiversity. If non-invasive exotic plant species are used, their provenance and the location of their use are documented, and their ecological effects are actively monitored. Cross-reference with C 6.9.1	<ul style="list-style-type: none"> • Documentation (Research reports Management plans, Monitoring Reports) • Field visits • Interviews

10.5 A proportion of the overall forest management area, appropriate to the scale of the plantation and to be determined in regional standards, shall be managed so as to restore the site to a natural forest cover.

Indicator	Means of Verification
10.5.1 The FME shall set aside areas for the conservation or restoration of natural vegetation cover ² . This area shall be at least 10% of the total area leased for plantation.	<ul style="list-style-type: none"> • Documentation (Research reports Management plans, Monitoring Reports) • Field visits • Interviews
10.5.2 Proportion and placement of conservation set asides is guided by results of assessments carried in Principles 6 and 7 that recommend necessary representative areas, wildlife areas, buffer zones, ecologically sensitive areas and other special sites.	<ul style="list-style-type: none"> • Documentation (Research reports Management plans, Monitoring Reports) • Field visits • Interviews
10.5.3 The areas identified for restoration to natural forests must: <ol style="list-style-type: none"> meet the requirement within a timeframe less than the average rotation age of the plantations, be identified on maps, and be actively restored to natural conditions 	<ul style="list-style-type: none"> • Documentation (Research reports Management plans, Monitoring Reports) • Field visits • Interviews

² The minor management units are not compelled to comply with this Criterion.

PRINCIPLE 10: Plantations – Plantations shall be planned and managed in accordance with Principles and Criteria 1 – 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.

10.6 Measures shall be taken to maintain or improve soil structure, fertility, and biological activity. The techniques and rate of harvesting, road and trail construction and maintenance, and the choice of species shall not result in long-term soil degradation or adverse impacts on water quality, quantity or substantial deviation from stream course drainage patterns.

Indicator	Means of Verification
10.6.1 Data on all soil types in the plantation area and susceptibility to degradation and erosion, including records of areas where soils have been degraded from previous activities shall be documented.	<ul style="list-style-type: none"> • FME Soil Maps • Field inspection
10.6.2 An explicit goal shall be expressed in the management plan to minimise soil disturbance and loss as a result of management activities.	<ul style="list-style-type: none"> • Documentation: Management Plan
10.6.3 The FME shall ensure that harvest plans contain operational prescriptions for soil conservation measures, e.g. minimising erosion, compaction, disturbance and exposure of soils; buffer zone; and, the protection of water bodies. (See criterion 6.5)	<ul style="list-style-type: none"> • Operational Guidelines • Low impact harvesting techniques being used
10.6.4 Potential and actual impacts on the soil shall be assessed, monitored and mitigated as per 6.1.1 and 6.1.2	<ul style="list-style-type: none"> • EIA and Monitoring Reports • Operational Guidelines

10.7 Measures shall be taken to prevent and minimize outbreaks of pests, diseases, fire and invasive plant introductions. Integrated pest management shall form an essential part of the management plan, with primary reliance on prevention and biological control methods rather than chemical pesticides and fertilizers. Plantation management should make every effort to move away from chemical pesticides and fertilizers, including their use in nurseries. The use of chemicals is also covered in Criteria 6.6 and 6.7.

Indicator	Means of Verification
10.7.1 The FME shall develop and implement Fire Plans to prevent and suppress fires. This Fire Plan shall include: <ol style="list-style-type: none"> Contractors responsibilities for action Contact details for personnel Emergency procedures Equipment and training for fire suppression Maps that include: <ul style="list-style-type: none"> - Stand identification - Clear access routes - Firebreaks - Dams, ponds & other water supplies - Important features for protection such as dwellings (including those on adjoining properties), ecological areas, and infrastructure (power lines etc) 	<ul style="list-style-type: none"> • Documentation: Fire Plan and Procedures, Management Plan • Maps • Interviews

PRINCIPLE 10: Plantations – Plantations shall be planned and managed in accordance with Principles and Criteria 1 – 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.

10.7.2 The FME shall have a system for ensuring and documenting compliance with the laws and regulations pertaining to Fire	<ul style="list-style-type: none"> • Documentation: Fire Plan and Procedures, Management Plan • Maps • Interviews
10.7.3 Operational guidelines shall be developed and implemented for controlled fires. The guidelines shall contain provisions that at the minimum: <ul style="list-style-type: none"> i. justification for the controlled fire ii. assessment of potential environmental impacts iii. controlled fire techniques iv. all of the provisions in 10.7.1 	<ul style="list-style-type: none"> • Documentation: Fire Plan and Procedures, Management Plan • Maps • Interviews
10.7.4 The quality of the wastewater (runoff) from the tree seedling nursery(ies) shall be monitored for chemical residues.	<ul style="list-style-type: none"> • Monitoring Reports & Management Plan • Interviews • Field Visits
10.7.5 The occurrence of forest pests and diseases shall be monitored to control potential epidemics.	<ul style="list-style-type: none"> • Monitoring Reports & Management Plan • Interviews • Field Visits
10.7.6 Integrated methods for the control of pests and disease shall be implemented.	<ul style="list-style-type: none"> • Monitoring Reports & Management Plan • Interviews • Field Visits
10.7.7 The application and dosages of pesticides shall be justified.	<ul style="list-style-type: none"> • Monitoring Reports & Management Plan • Interviews • Field Visits
<p>10.8 Appropriate to the scale and diversity of the operation, monitoring of plantations shall include regular assessment of potential on-site and off-site ecological and social impacts, (e.g. natural regeneration, effects on water resources and soil fertility, and impacts on local welfare and social well-being), in addition to those elements addressed in principles 8, 6 and 4. No species should be planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems. Special attention will be paid to social issues of land acquisition for plantations, especially the protection of local rights of ownership, use or access.</p>	
Indicator	Means of Verification
10.8.1 The FME shall develop and implement procedures to monitor the potential on-site and off-site ecological and social impacts of the plantation management.	<ul style="list-style-type: none"> • Documents (Management Plan & Monitoring Procedures). • Interviews

PRINCIPLE 10: Plantations – *Plantations shall be planned and managed in accordance with Principles and Criteria 1 – 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.*

10.9 *Plantations established in areas converted from natural forests after November 1994 normally shall not qualify for certification. Certification may be allowed in circumstances where sufficient evidence is submitted to the certification body that the manager/owner is not responsible directly or indirectly for such conversion.*

Indicator	Means of Verification
<p>10.9.1 There shall be no evidence that natural forests have been converted to plantations since November 1994. If plantations are the result of natural forest conversion after that date, the FME shall provide sufficient evidence indicating that the said conversion was not directly or indirectly the responsibility of the current owner/manager.</p>	<ul style="list-style-type: none"> • Documentary evidence of past logging practice prior to November 1994 • Interviews • Forestry Maps

Glossary

Conversion: the planting of non-degraded natural forest

Consultation: a meeting for deliberation, discussion, or decision

Degraded forest or deforested land: Forest that delivers a reduced supply of goods and services from a given site and maintains only limited biological diversity. It has lost the structure, function, species composition and/or productivity normally associated with the natural forest type expected at that site.³

Established plantation species: *Pinus caribaea* (Caribbean Pine) & *Swietenia macrophylla* (Mahogany)

Exotic plant species: plant species not native to Fiji

Forest Management Enterprise: refers to the forest management company that has control of the defined forest resource. It is the Forest Management Enterprise that applies for the certification of its forest resource.

Forest Management Unit: the area under control of the Forest Management Enterprise

High Conservation Value Forests: High Conservation Value Forests are those that possess one or more of the following attributes:

- a) forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia); and/or large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance
- b) forest areas that are in or contain rare, threatened or endangered ecosystems
- c) forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control)
- d) forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health) and/or critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

Landowners: Landowners are usually the native/indigenous people of Fiji, the Fijians that traditionally hold most land titles in Fiji

Local Communities: these are communities that live in the vicinity of the FMU and do not always own the land that the FMU is situated upon.

Log delivery cost: all cost involved in felling, forwarding & haulage to mill gate

Mataqali: Fijian clan landowning unit

NLTB: Established in 1940, the Native Land Trust Board (NLTB) is a Board of Trustee established under the Native Land Trust Act (NLTA) Cap. 134 under the laws of Fiji.

The control of all native land is vested in the Board and all such land shall be administered by the Board for the benefit of the Fijian landowners. Native land shall not be alienated by Fijian owners whether by sale, grant, transfer, or exchange except to the State. The Board grants leases or licenses of portions of native land outside native reserve land to any bona-fide interested party.

Native reserve land is land set aside for the use, maintenance and support of the native landowners. This native reserve land can only be leased to a native Fijian. The Board may, upon good cause being shown and with the consent in writing of the landowners exclude either permanently or for a specified period portion native reserve land to be leased by someone other than a native Fijian.

The Native Land Trust Board provides leasing arrangements and licenses for all types of land use with terms ranging from annual tenancies to ninety nine (99) years.

The NLTB now controls around 90% of the total land in Fiji.

Stumpage:

- Applies to plantations. Mill gate price – log delivery cost = Stumpage.
- Paid by the sawmills to the Forest Management Unit
- % paid to Forest Manager and % paid to Landowners/NLTB.
- NLTB share is 10% of the Stumpage paid to the Landowners.

³ ITTO. 2002. ITTO guidelines for the restoration, management and rehabilitation of degraded and secondary tropical forests. ITTO Policy Development Series No 13. ITTO, Yokohama, Japan.

Annex 1: The list of National laws includes:

The National Forest Policy & Legislation currently in force are:

1. Forest Decree 1992 (this replaced the Forest Act 1953)

Other principal forestry legislation and instruments:

2. Fiji National Code of Logging Practice 1990
3. Forest Act 1953 - amendment regulations still in force:
 - Forest Regulations 1955
 - Forest Sawmill Regulations 1968
 - Forest Guard Regulations 1955
 - Forest (Fire Prevention) Regulations 1972
 - Forests (Timber Marks) Regulations 1958
 - Nature Reserves 1956
 - Prohibition Order 1958
 - Forest (Reserve Forest) Order 1983
 - Forest Amendment Regulations 1990
4. Forest (Reserved for Estates) (revocation) Order 1996
5. Forest (Preservative Treatment) 1992

In relation to native land:

6. Native Land Trust Act 1940
7. Native Land (Forest) Regulations 1943
8. Native Land Trust (Leases and Licences) Regulations 1984
9. Native Land (Native Reserves) Regulations 1940
10. Native Land & Fisheries Commission Act
11. Fijian Affairs Act

In Relation to Mahogany Plantations:

12. Fiji Mahogany Act 2003

In relation to Pine Plantations:

13. Fiji Pine Commission Act 1976
14. The Commissions forests (Maintenance and Protection) Regulations 1987
15. Fiji Pine Decree 1990

In relation to forest workers:

16. Occupational Health and Safety Act
17. Employment Relations Bill 2007
18. Training and Productivity Authority of Fiji Act
19. Fiji National Provident Fund Act

In relation to the environment:

20. Environment Management Act 2005
21. Fiji National Biodiversity Strategy and Action Plan
22. Rivers and Streams Act 1982
23. National Rural Land Use Policy
24. Endangered and Protected Species Act 2002 and the Regulation (2003)
25. Biosecurity Act
26. Quarantine Act

Other legislation that has relevance to forestry includes:

27. Public Health Act
28. Litter Act/Decree
29. Land Conservation and Improvement Act 1953
30. Town Planning Act 1946
31. Land Conservation and Improvement (Fire Hazard Period) Order 1969
32. The prevention of Fire Act 1878
33. Land Transport Authority Act
34. Civil Aviation Authority of Fiji Islands (in case of heli-logging)

Annex 2: International Agreements and Conventions Fiji is party to.

- ILO C29 – Forced Labour Convention
- ILO C87 – Freedom of Association and Protection of the Right to Organise Convention
- ILO C98 – Right to Organize and Collective Bargaining Convention
- ILO C100 Equal Remuneration Convention
- ILO C105 – Abolition of Forced Labour Convention
- ILO C169 – Indigenous and Tribal People's Convention
- Ramsar Convention on Wetlands
- UN Convention on World Culture and Natural Heritage – National Trust
- UN Forum on Climate Change
- UN Convention Combating Desertification
- Bern Convention on Intellectual Property Rights (traditional and environmental knowledge)
- Convention on Biological Diversity
- Convention on International Trade of Endangered Species (CITES) – Schedule 2
- Convention on Persistent Organic Pollutants
- Convention on Conservation of Nature in the South Pacific
- The Forest Principles (1992) under the United Nations Environment Programme
- Rio Declaration on Environment and Development
- Convention on Conservation of Natural Resources in the South Pacific (Apia Convention)
- Convention on Protection of Natural Resources and Environment in the Pacific Region (Noumea Convention or SPREP Convention)

Annex 3: Some Forestry prescribed fees, royalties, taxes and other charges to be paid by the FMU.

Some Prescribed fees, royalties, taxes and other charges – 2006	Evidence
Royalties/Harvesting premium (when native forest)	<ul style="list-style-type: none"> • Timber statement form – paid to NLTB
% of Stumpage in plantations	<ul style="list-style-type: none"> • Schedule of areas logged , ownership of areas, volume logged, amount to be paid – paid to NLTB
Land rental & Premium	<ul style="list-style-type: none"> • Schedule of areas leased , ownership of areas, amount to be paid • NLTB receipt (for monies paid by the FMU) • Copy of payment voucher that was signed by the landowner upon timely payment of land rental
Management/scaling fees paid in accordance with current laws	<ul style="list-style-type: none"> • Invoice (RML4 & Timber Statement) & Receipt from the Dept Forestry
License fees for vehicles and machines used in harvesting & cartage operations.	<ul style="list-style-type: none"> • Land Transport Authority receipt & sticker

⁴ RML: Removal License

Annex 4: Personal Protective Equipment (PPE) appropriate for forestry operations

(Sourced from the ILO Code of Practice: Safety and Health in Forestry Work)

Parts of the body to be protected	Feet	Legs	Trunk, arms, legs	Hands	Head	Eyes	Eyes/face	Hearing
PPE normally appropriate	Safety boots or shoes ¹	Safety trousers ²	Close-fitting clothing	Gloves	Safety Helmet	Goggles	Visor (mesh)	Ear muffs ³
Operation								
Planting⁴								
Manual	✓			✓ ⁵				
Mechanised	✓		✓					✓ ⁶
Weeding/Cleaning								
Smooth-edged tools	✓			✓		✓		
Handsaw	✓			✓				
Chain-saw	✓ ⁷	✓	✓	✓ ⁸	✓	✓	✓	✓
Brush-saw	✓							
- with metal blade	✓	✓	✓	✓	✓	✓	✓	✓
- with nylon filament	✓	✓		✓		✓		✓
Rotating knife/flail	✓		✓	✓				✓ ⁶
Pesticide application	To comply with those specified for the particular substance and application technique							
Pruning*								
Hand tools	✓ ⁹			✓	✓ ¹⁰	✓		
Felling¹¹								
Hand tools	✓		✓	✓ ¹²	✓			
Chain-saw	✓ ⁷	✓	✓	✓ ⁸	✓		✓	✓
Mechanised	✓							
Debarking								
Manual	✓			✓				
Mechanised	✓		✓	✓			✓	✓
Splitting								
Manual	✓							
Mechanised	✓							
Extraction								
Manual	✓			✓	✓ ¹³			
Chute	✓			✓	✓ ¹³			
Animal	✓			✓	✓ ¹³			
Mechanised								
- Skidder	✓		✓	✓ ¹⁴	✓			✓ ⁶
- Forewarder	✓		✓		✓			✓ ⁶
- Cable crane	✓		✓	✓ ¹⁴	✓			✓ ⁶
- Helicopter	✓		✓ ¹⁵	✓ ¹⁴	✓ ¹⁶	✓		✓
Stacking/loading	✓		✓	✓	✓			✓ ⁶
Chipping	✓		✓	✓	✓		✓	✓ ⁶
Tree Climbing¹⁷								
Using Chain-saw	✓ ⁷	✓	✓	✓ ⁸	✓ ¹⁸	✓		✓
Not using Chain-saw	✓							

Annex 4: Personal Protective Equipment (PPE) appropriate for forestry operations

(Sourced from the ILO Code of Practice: Safety and Health in Forestry Work)

Continued

Notes:

* If Pruning involves tree-climbing above 3 m, a fall restricting device should be used.

-
- ¹ With integrated steel toe for medium or heavy loads.
 - ² Safety trousers incorporating clogging material, in hot climates/weather chain-saw leggings or chaps may be used.
 - ³ Ear plugs and ear valves not generally suitable for forestry because of risk of infection.
 - ⁴ For planting of chemically treated plants and for dipping of plants in chemicals see relevant section of Chapter 13.
 - ⁵ When planting spiny seedlings or chemically treated plants.
 - ⁶ When noise level at work position exceeds 85dB(A).
 - ⁷ Chain-saw boots with protective guarding at front vamp and instep.
 - ⁸ Cut-resistant material incorporated in the back of the left hand.
 - ⁹ When falling branches are likely to cause injury.
 - ¹⁰ When pruning to a height exceeding 2.5 m.
 - ¹¹ Felling includes debranching and crosscutting.
 - ¹² When using a handsaw.
 - ¹³ When extracting near unstable trees or branchwood.
 - ¹⁴ Only if manipulating logs; gloves with heavy-duty palm if handling wire choker rope or tether line.
 - ¹⁵ Highly visible colours.
 - ¹⁶ With chin strap.
 - ¹⁷ For required tree-climbing equipment see Chapter 15 of the ILO Code of Practice: Safety and Health in Forestry Work
 - ¹⁸ Climbing helmets are preferable: if they are not available, safety helmets with chin straps may be used.

Annex 5: List of all reports/plans required by FME

The Management Plan

Harvesting Plan

Monitoring Plan

Monitoring Report

Research Reports

Operational Guidelines

Occupational Health and Safety Manual

Fire Plan and Procedures

Social and Environment Baseline Assessment Report

Procedures manual - for correlating harvests, replenishment and maintenance of species diversity and abundance

Waste Assessment Reports

Yield Reconciliation Report

FMU Annual Report

Field achievements – monthly report

Community Participation Report identifying and describing key ecosystem functions and values and natural cycles, etc ... list ...

Employee Training Report

Field Manual

Community/stakeholder monitoring consultation report.

HCVF Assessment Report

2011 FEES & CHARGES FOR THE FORESTRY SECTOR

LIST OF SERVICES		USER PAY(UP) OR FREE OF CHARGE(FOC)	FEE SPECIFICATIONS	CURRENT FEES & CHARGES(\$)	PROPOSED FEES & CHARGES(\$)	
<i>Management Services Division</i>						
Logging Plan	UP		Area (HA)			Principal Customers: Logging contractors resource owners proposed to be outsourced
				\$105.45		
			100-199	\$116.53		
			200-299	\$175.75		
			300-399	\$186.83		
			400-499	\$221.54		
			500-599	\$232.62		
			600-699	\$254.00		
			700-799	\$272.28		
			800-899	\$288.74		
			900-999	\$315.32		
			1000 & over	Separately costed		
Timber Volume Assessment	UP		Area(HA)	LRD(\$)	FGID(\$)	Principal Customers: Logging contractors resource owners
				\$29.54	\$31.01	
			36161.00	\$34.71	\$33.24	
			100-199	\$37.67	\$35.45	
			200-299	\$42.06	\$37.67	
			300-399	\$45.09	\$39.88	
			400-499	\$48.74	\$45.53	
			500-599	\$51.69	\$48.74	
			600-699	\$54.65	\$51.69	
			700-799	\$57.60	\$53.91	
			800-899	\$63.71	\$61.30	
			900-999	\$66.46	\$63.51	
			1000-1099	\$69.41	\$65.73	
			1100-1199	\$72.37	\$67.94	
			1200-1299	\$75.32	\$67.94	
			1300-1399	\$85.66	\$77.54	
			1400-1499	\$88.61	\$79.75	
			1500-1599	\$91.57	\$81.97	
Printing of Forest Function Maps	UP		2000 & over	Separately costed		Principal Customers: General Public
			Unlaminated	\$38.29		
			Laminated	\$52.51		
			LRD Map	\$7.22		
Forest Resource Assessment by private individuals	UP based on the i.area ii. forest type iii. accuracy level required		Photocopy Maps	\$4.81		\$20 per ha covers operational cost for resource assessment
			LRD Report - per sheet	\$16.41		
Advising on suitability for mining	FOC					\$100 per request

2011 FEES & CHARGES	
LIST OF SERVICES	
CURRENT FEES	& CHARGES FJD\$
Forestry Training Services	
FOC	Advanced Certificate in Forest Management
	Certificate in Applied Woodcraft Technology
	Trade Certificate in Applied Woodcraft Technology
	<i>Technical Skills Training;</i>
	i. Felling - 3 Certificates
	ii. Cross Cutting - 3 Certificates
	iii. Chainsaw mechanics - 3 Certificates
	iv. Skills Test - 1 Certificate
	v. Bridging Courses - 1 Certificate
	vi. Supervision course - 1 Certificate
FOC	vii. Business Training - 1 Certificate
	Communication & Awareness Training on Sustainable Forest Management - remain with Dept
	<i>Wood Processing Shortcourses;</i>
	Portable Sawmill Training
	Timber Drying
	Timber Preservation
	Timber Machining
	Saw doctoring
	Timber Grading
	Bamboo Weaving
Skills Test Fees	
Costs(\$)	
100	Overhead cost
12	Instructors @ \$6/hr @ 2hrs per test
20	Stationery @ \$20/per person
5	Application Fees \$5per person
57	Meal @\$9/meal x 3 and Subsistence @\$30/night
170	Travel @\$4/km & Equipment maintenance @ \$70/per
364	Total cost
7.28	Contingency @ 2%
371	Total Cost
10	Renewal of fees @ \$10 per person for a 3 year period
Service Fees (Machine costs - TTTC)	
Costs(\$)	
150	Thicknesser @\$150/m ³ Dressed 4 sides
250	6-Sider Profiling @ \$250/m ³
220	Sanding machine @ \$220
0.25	Drilling @\$0.25/per cm depth
20	Finishing @\$20/litre
170	Ripping charge @ \$170/m ³
5	Sharpening of Knives @ \$5 per blade

Service Fees (FTC)		Costs (\$)
Chainsaw repair @ \$5.00/hr		5
Tree Surgeon		
Fuel cost @ \$2.58/litre for fuel & \$2.58/litre for oil		5.16
Transport cost @ \$1.50/km		1.5
Labour costs x 3 operator @ \$3.83 per hr		11.49
Equipments & Parts @ \$25/hr		25
Total (Tree extraction per hour)		48

FOR THE FORESTRY SECTOR	
PROPOSED FEE	JUSTIFICATION
& CHARGES FJD\$	
Full Fee for 18 months @ 20 trainees @\$649.40 per module	\$14,286.80
Full Fee for 12 months @ 20 trainees @\$865.18 per module	\$13,855.60
Full Fee for 24 months @ 20 trainees @\$865.18 per module	\$27,711.00
20 modules @\$49.43 per module	\$988.68
10 modules @\$40.19 per module	\$401.91
10 modules @\$128.56 per module	\$1,285.60

Principal Customers: resi
Principal Customers: resi
Principal Customers: resi
Principal Customers: resi
Principal Customers: commu
Principal Customers: Sawmilling companies
Timber merchants
Resource owners

ities

source owners, public who meet the criteria by DOF
source owners, public who meet the criteria by DOF
source owners, logging companies, DOF officers

Technical Skills Training	Costs
Total Number of Modules	20
Duration all courses	39
Maximum number of participants per course	222
Meal and Accommodation per person	
Accommodation	20
Morning Tea	3
Lunch	9
Afternoon Tea	3
Dinner	9
Total Meals per person per day	44
Total Meals per person per week	308
Total Meals & Accommodation - 39 weeks course	12012
Overhead cost	40,000
Instructors	163,407
Stationery @ \$20/per person	
Travel & Equipment maintenance @ \$70/per person	
Total 39 weeks course	203,407
Contingency @ 2%	4068.14
Total Cost of 1ST course	219,487
Cost per module per person	49.43
Full Cost (all modules)	988.68

Wood Processing Training	Costs
Total Number of Modules	10
Duration all courses	20
Maximum number of participants per course	100
Meal and Accommodation per person	
Accommodation	20
Morning Tea	3
Lunch	9
Afternoon Tea	3
Dinner	9
Total Meals per person per day	44
Total Meals per person per week	308
Total Meals & Accommodation - 20 weeks course	6160
Overhead cost	40,000
Instructors	80,000
Stationery @ \$20/per person	
Travel & Equipment maintenance @ \$70/per person	
Total 20 weeks course	120,000
Contingency @ 2%	2400
Total Cost of course	128,560
Cost per module per person	128.56
Full Cost (all modules)	1285.60

Community Forestry Education & Awareness	Costs
Total Number of Modules	10
Duration all courses	4
Maximum number of participants per course	300
Meal and Accommodation per person	
Accommodation	20
Morning Tea	3
Lunch	9
Afternoon Tea	3
Dinner	9
Total Meals per person per day	44
Total Meals per person per week	308
Total Meals & Accommodation - 4 weeks course	1232
Overhead cost	40,000
Instructors	50,000
Stationery @ \$20/per person	6000
Travel & Allowance @ \$70/per person	21,000
Total 4 weeks course	117,000
Contingency @ 2%	2340
Total Cost course	120,572
Cost per module per person	40.19
Full Cost (all modules)	401.91

2-yr Advance Certificate in Forest Management	Costs
Total Number of Modules	22
Duration all courses	68
Maximum number of participants per course	20
Meal and Accommodation per person	
Accommodation	20
Morning Tea	3
Lunch	9
Afternoon Tea	3
Dinner	9
Total Meals per person per day	44
Total Meals per person per week	308
Total Meals & Accommodation - 68 weeks course	20944
Overhead cost	40,000
Instructors	200,000
Allowance@ \$10 per week for 68 weeks	13,600
Stationery @ \$300/per person	6000
Travel & Equipment maintenance @ \$70/per person	
Total 68 weeks course	259,600
Contingency @ 2%	5192
Total Cost of course	285,736
Cost per module per person	649.40
Full Cost (all modules)	14,286.80

1-yr Certificate in Woodcraft Technology	Costs
Total Number of Modules	16
Duration all courses	40
Maximum number of participants per course	20
Meal and Accommodation per person	
Accommodation	20
Morning Tea	3
Lunch	9
Afternoon Tea	3
Dinner	9
Total Meals per person per day	44
Total Meals per person per week	308
Total Meals & Accommodation - 40 weeks course	12320
Overhead cost	40,000
Instructors	200,000
Allowance@ \$10 per week for 32 weeks	13,600
Stationery @ \$300/per person	6000
Travel & Equipment maintenance @ \$70/per person	
Total 40 weeks course	259,600
Contingency @ 2%	5192
Total Cost of course	277,112
Cost per module per person	865.98
Full Cost (all modules)	13,855.60

Machine cost
Skills testing
Tree extraction cost
Hire of facility

Skills Test Fees	Costs(\$)
Overhead cost	100

Instructors @ \$6/hr @ 2hrs per test	12
Stationery @ \$20/per person	20
Application Fees \$5per person	5
Meal @ \$9/meal x 3 and Subsistence @ \$30/night	57
Travel @ \$4/km & Equipment maintenance @ \$70/per pers	170
Total cost	364
Contingency @ 2%	7.28
Total Cost	371
Renewal of fees @ \$10 per person for a 3 year period	10

Service Fees (Machine costs - TITC)	Costs(\$)
Thickmesser @ \$150/m ³ Dressed 4 sides	150
6-Sider Profiling @ \$250/m ³	250
Sanding machine @ \$220	220
Drilling @ \$0.25/per cm depth	0.25
Finishing @ \$20/litre	20
Ripping charge @ \$170/m ³	170
Sharpening of Knives @ \$5 per blade	5

Service Fees (FTC)	Costs (\$)
Chainsaw repair @ \$5.00/hr	5
Tree Surgeon	
Fuel cost @ \$2.58/litre for fuel & \$2.58/litre for oil	5.16
Transport cost @ \$1.50/km	1.5
Labour costs x 3 operator @ \$3.83 per hr	11.49
Equipments & Parts @ \$25/hr	25
Total (Tree extraction per hour)	48

2011 FEES & CHARGES FOR THE FORESTRY SECTOR		
LIST OF SERVICES		
CURRENT FEES	PROPOSED FEE	
& CHARGES FJD\$	& CHARGES FJD\$	
Silviculture Research		
Sale of mahogany seeds (per kg) - overseas	US\$50.00	same
Sale of mahogany seeds (per kg) - local		\$100.00
Sale of sandalwood seedlings (per seedling)	\$3.00	\$6.00
Sale of Kaudamu seeds (per kg)	US\$50.00	US\$25.00

(1kg has about 50 seeds only)

Seed inspection

Pest Risk Analysis

Import/Export

facilitation

Pest/disease survey

Consultation fee

Principal Customers:	JUSTIFICATION
resource owners	Seed - \$100/500 = 0.2
Individuals	

2011 FEES & CHARGES FOR THE FORESTRY SECTOR

LIST OF SERVICES		CURRENT FEES & CHARGES FJD\$	PROPOSED FEE & CHARGES FJD\$	JUSTIFICATION	
Timber Utilisation Division					
Sawmill License			\$150 pr hr	Cost based on unit cost for i. annual inspection for licensing ii. Provision of license	Principal Customers: sawmillers sawmillers sawmillers sawmillers sawmillers & timber merchants hardware companies
Provisional approval for New Sawmill applications & Treatment Plant Applications & Relocation			\$50 pr hr	Cost based on unit cost for i. annual site inspection ii. Provisional approval	
Treatment Plant License	FOC		\$110 pr hr	Cost based on unit cost for i. annual inspection for treatment plant	
Export License (Commercial value)			\$100 pr hr	Cost based on unit cost for i. inspection per export consignment	
Export Phyto-License (Non Commercial value)			\$10 per inspection	Cost includes; i. phytosanitary certificate	
Import License			\$100 pr hr	Cost based on unit cost for i.inspection per consignment ii. Provision of license	
Timber Analysis;					
i. Batch analysis (10 or more samples)	\$18.40		\$20.20 pr sample	For all chemical anlyses undertaken	sawmillers
ii. Single analysis	\$33.75				
Spot Test - Laboratory;					
i. Batch testing (10 or more samples)	\$2.05		\$8.00 pr sample	For all chemical spot testing undertaken	sawmillers
ii. Single analysis (single testing)	\$7.15				
Manufacture of Wood Products		As per Finance price listing(revised every year with 7% increase)	As per Finance price listing(revised every year with 10% increase)		General public
Wooden Artifacts		As per Finance price listing(revised every year with 7% increase)	As per Finance price listing(revised every year with 10% increase)		General public
Trade Assistance		None	\$10 pr hr		general public

	\$		W		N		Totals
Total no of kiln in Fiji	25		5		7	5	17
Total no of licensed treatment plants in Fiji	28		8		8	5	21
Total no of unlicensed treatment plants in Fiji	8		5		2	1	8
Total no of sawmills in Fiji	66		32		19	15	66
Total no of static sawmills in Fiji	27		7		10	10	27
Total no of portable sawmills in Fiji	39		25		9	5	39

2011 FEES & CHARGES FOR THE FORESTRY SECTOR			
LIST OF SERVICES	CURRENT FEES	PROPOSED FEE	JUSTIFICATION
& CHARGES FJD\$		& CHARGES FJD\$	
Extension Division			
Supply of seedlings; Per Seedling (Other species)	\$1.00	\$2.00	
Per Seedling (for Vasi)	\$3.00	\$6.00	Seed - \$100/500 = 0.2 Soil & NPK - \$2.00 Labour - 1 x 3.75 = \$3.75 Total Cost = \$5.75
Supply of firewood Per Tonne	\$27.00	\$50.00	Stacking - 1 lab x 3.75 x 2hr = \$6.50 Chainsaw - 1 hr x \$10/hr = \$10.00 Fuel & Oil - = \$9.70 Total cost 49.2

LIST OF SERVICES		CURRENT FEES & CHARGES FTD		PROPOSED FEES & CHARGES FTD		Justification
Non-forest lands						
Scaling fees						
License fees	\$5.00 per m ³ \$50.00 per ha					
Long Term License						
Application fees for renewal of license	POC					Due to bi-monthly values 1: 5 - 10; 2: 15 - 30; 3: 30 - 60; 4: 60 - 120; 5: 120 - 240; 6: 240 - 480; 7: 480 - 960; 8: 960 - 1920; 9: 1920 - 3840; 10: 3840 - 7680; 11: 7680 - 15360; 12: 15360 - 30720; 13: 30720 - 61440; 14: 61440 - 122880; 15: 122880 - 245760; 16: 245760 - 491520; 17: 491520 - 983040; 18: 983040 - 1966080; 19: 1966080 - 3932160; 20: 3932160 - 7864320; 21: 7864320 - 15728640; 22: 15728640 - 31457280; 23: 31457280 - 62914560; 24: 62914560 - 125829120; 25: 125829120 - 251658240; 26: 251658240 - 503316480; 27: 503316480 - 1006632960; 28: 1006632960 - 2013265920; 29: 2013265920 - 4026531840; 30: 4026531840 - 8053063680; 31: 8053063680 - 16106127360; 32: 16106127360 - 32212254720; 33: 32212254720 - 64424509440; 34: 64424509440 - 128849018880; 35: 128849018880 - 257698037760; 36: 257698037760 - 515396075520; 37: 515396075520 - 1030792151040; 38: 1030792151040 - 2061584302080; 39: 2061584302080 - 4123168604160; 40: 4123168604160 - 8246337208320; 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2011	
LIST OF SERVICES	
CURRENT FEES	
& CHARGES FJD\$	
Extension Division	
Forest Park Entry Fees	
Tourists;	
Adult	\$5.00
Child	\$1.00
Locals;	
Adult	\$1.00
Child	\$0.50
Tour Guiding	
FOC	

FEES & CHARGES FOR THE FORESTRY SECTOR	
PROPOSED FEE	JUSTIFICATION
& CHARGES FJD\$	
\$10.00	Lab cost – \$33/day, o/head 20% (20 visitor/day)
\$1.00	Lab cost – \$33/day, o/head 20% (20 visitor/day)
\$2.00	Lab cost – \$33/day, o/head 20% (20 visitor/day)
\$1.00	Lab cost – \$33/day, o/head 20% (20 visitor/day)
\$30.00	for a group tour(10-20pax)

ANNEX 2

Anticipated Revenue – Current revenue items Versus Proposed Revenue Items

Type of Fees	Current Fees	Revised Fees	New Fees	Revenue Outturn (current)	Revenue Outturn (proposed)
Logging Plan Base maps					
Area					
100-199	\$116.53	10% increase across the board	128.18	Max of 15 maps per year on average	Max of 15 maps per year on average
200-299	\$175.75		193.32		
300-399	\$186.83		205.51		
400-499	\$221.54		243.69	1037.87	2635.05
500-599	\$232.62		255.88		
600-699	\$254.00		279.40		
700-799	\$272.28		299.51		
800-899	\$288.74		317.61		
900-999	\$315.32		346.85		
1000 & over	Separately costed		10% increase		
Timber Volume Assessment					
Area(HA)	LRD(\$)		LRD(\$)	FGID(\$)	
36161.00	\$29.54	10% increase across the board	32.49	34.11	Max of 15 LRD/15 FGID maps
100-199	\$34.71		38.18	42.00	
200-299	\$37.67		41.44	45.58	LRD – 539.93
300-399	\$42.06		50.47	55.52	FGID – 515.14
400-499	\$45.09		49.60	54.56	Total – 1055.07
500-599	\$48.74		53.61	58.97	
600-699	\$51.69		56.86	62.55	
700-799	\$54.65		60.12	66.13	
800-899	\$57.60		63.36	69.70	
900-999	\$63.71		70.08	77.09	
					LRD – 609.68
					FGID – 664.54
					Total – 1274.52

1000-1099	\$66.46	63.51	10% increase across the board	73.11	69.86		
1100-1199	69.41	\$65.73		76.35	72.30		
1200-1299	\$72.37	\$67.94		79.61	74.73		
1300-1399	\$75.32	\$67.94		82.85	74.73		
1400-1499	\$85.66	\$77.54		94.23	85.29		
1500-1599	\$88.61	\$79.75		97.47	87.73		
1600-1699	\$91.57	\$81.97		100.73	90.17		
1700-1799	\$94.52	\$84.18		103.97	92.60		
1800-1899	\$97.48	\$88.40		107.23	97.24		
1900-2000	\$100.43	\$88.61		110.47	97.47		
2000 & over	Separately costed						
Forest Function Maps							
Unlaminated (2/yr)	38.29	10% increase across the board	42.12	76.58	84.24		
Laminated (2/yr)	52.51		57.76	63.54	115.52		
Photocopy (20/yr)	4.81		5.29	96.20	105.80		
NFI reports	0		20 a copy (100 copies/yr)	0	2000.00		
Forest Resource Assessment by private individuals							
UP based on the i. Area		\$20/ha	Maximum of 4 requests with an average ofha				
ii. forest type	FOC						
iii. accuracy level required	FOC						
Advice for suitability of mining	FOC		100/request (maximum of 3 requests/yr)	0	300.00		
Technical Skills Training	FOC	\$49.00 per module per person (20 modules with 222 trainees)	\$49.00 per module per person (20 modules with 222 trainees)	0	217,560		
Wood processing Courses	FOC	10 modules @\$49/module/	10 modules @\$49/module/person	0	49,000		

Service Fees (Use of machines at TITC)		person				
Thickneser @ \$150/m ³ Dressed 4 sides		150	150		0	75,000
6-Sider Profiling @ \$250/m ³		250	250		0	500,000
Sanding Machine @ \$220/m ³	FOC	220	220		0	110,000
Drilling @ \$0.25/cm		0.25	0.25		0	10,000
Finishing @ \$20/liter		20	20		0	40,000
Ripping Charge @ \$170/m ³		170	170		0	255,000
Sharpening of Knives @ \$5 per blade		5	5		0	126,250
Chain Saw repair	FOC	\$5/hr	\$5/hr (maximum of 4 requests/yr @ a maximum of 2hrs)		0	40.00
Tree Surgeon	FOC	\$25/hr	\$25/hr		0	
Skills Test Fees	FOC		\$371/ test			
CIS Forest Park fees – Tourists	\$5	\$10	\$10		\$7800	15,600
CIS forest park fees – Locals	\$1	\$2	\$2		4,680	\$9360
Tour guiding (1 per month)	FOC	\$30 per group	\$30 per group		0	360
Per Seedling (species other than native) 80 seedlings in a year	\$1	\$2	\$2		80	160
Per Seedling (for Yasi) (200 seedlings annually)	\$3	\$6	\$6		\$600	\$1200
Supply of Firewood (per Tonne)(10 tonnes)	27	50	50		270	500
Sawmill License		\$150.00	\$150.00		0	13,950
Portable Mill		\$1,000.00	\$1,000.00		0	1,000
International standard						
15,000m ³ >	FOC	\$500.00	\$500.00		0	\$20,000,000 (Export & Local value)
>10,000m ³		\$300.00	\$300.00		0	\$1,000,000 (Export & Local value)
>7,000m ³		\$150.00	\$150.00		0	\$500,000 (Export &

							Local value)
5,000m ³ and below			\$100.00		\$100.00	0	\$100,000 (Export &Local value)
Provisional approval for New Sawmill application & Treatment Plant Application & Relocation	FOC		\$100.00		\$100.00	0	600
Treatment Plant License (base on capacity of TP)	FOC		\$110.00		\$110.00	0	3960
Export License (Commercial Value) (per inspection)	FOC		\$100.00		\$100.00	0	45,000
Export Phyto-License (Non Commercial Value) per inspection	FOC	\$10 per inspection		\$10 per inspection		0	360
Import License (per inspection per consignment)	FOC	\$150.00		\$150.00		0	22,500
Timber Analysis							
Batch	18.40	20.20		20.20		22624	22624
Single	33.75						
Spot Test - Laboratory							
Batch	\$2.05	\$8.00 per sample		\$8.00 per sample		320	320
Single	\$7.15						
Consultation Fee (Inspection and Provision of technical advice upon request by industry and general public).	FOC	\$50/hr		\$50/hr		0	800
Sale of FD Strategic documents (policy, REDD+, Timber of Fiji, FHCOP, etc)	FOC	\$20.00		\$20.00		0	2000
Investment and Trade Facilitation	FOC	\$10/per application		\$10/per application		0	100
Long Term License		\$50 per ha		\$50 per ha			
Application Fee for Renewal License	FOC	\$10		\$10		0	
Verification	FOC	\$20 per hr		\$20 per hr		0	
Annual License	FOC	\$20hr		\$20hr		0	
Application Fees for renewal of license	FOC	\$10		\$10		0	

Verification	FOC	\$20 per hr	\$20 per hr	0	
Casual License	FOC	\$10 per ha	\$10 per ha	0	
Application Fees for renewal of license	FOC	\$10	\$10	0	
Verification	FOC	\$20 per hr	\$50 per ha	0	
Woodlot License					
Monthly application and renewal of woodlot license	FOC	\$10/mth	\$10		
Total				38,703.26	1,583,759.13

*****This excludes revenue from the Trading & manufacturing Account (TMA)

ANNEX 2

Anticipated Revenue - Current revenue items Versus Proposed Revenue Items

Type of Fees	Current Fees	Revised Fees	New Fees	Revenue Outturn (current)	Revenue Outturn (proposed)
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800-899	\$288.74		317.61		
900-999	\$315.32		346.85		
1000 & over	Separately costed		10% increase		
Timber Volume Assessment		10% increase across the board		Max of 15 LRD/15 FGID maps	Max of 15 LRD/15 FGID maps
Area(Ha)	LRD(\$)	FGID(\$)	LRD(\$)	FGID(\$)	
36161.00	\$29.54	\$31.01	32.49	34.11	
100-199	\$34.71	\$33.24	38.18	42.00	
200-299	\$37.67	\$35.45	41.44	45.58	LRD – 539.93
300-399	\$42.06	\$37.67	50.47	55.52	FGID – 515.14
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NFI reports	0		20 a copy (100 copies/yr)	0	2000.00		
Forest Resource Assessment by private individuals							
UP based on the i. Area							
ii. forest type	FOC	\$20/ha	Maximum of 4 requests with an average ofha				
iii. accuracy level required							
Advice for suitability of mining							
	FOC		100/request (maximum of 3 requests/yr)	0	300.00		
Technical Skills Training							
	FOC	\$49.00 per module per person (20 modules with 222 trainees)	\$49.00 per module per person (20 modules with 222 trainees)	0	217,560		
Wood processing Courses							
	FOC	10 modules @\$49/module/@\$49/module/person	10 modules @\$49/module/person	0	49,000		

Service Fees (Use of machines at TTTC)		person			
Thicknesser @ \$150/m ³ Dressed 4 sides		150	150	0	75,000
6-Sider Profiling @ \$250/m ³		250	250	0	500,000
Sanding Machine @ \$220/m ³	FOC	220	220	0	110,000
Drilling @ \$0.25/cm		0.25	0.25	0	10,000
Finishing @ \$20/liter		20	20	0	40,000
Ripping Charge @ \$170/m ³		170	170	0	255,000
Sharpening of Knives @ \$5 per blade		5	5	0	126,250
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Portable Mill		\$1,000.00	\$1,000.00	0	1,000
International standard					
15,000m ³ >	FOC	\$500.00	\$500.00	0	\$20,000,000 (Export & Local value)
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Import License (per inspection per consignment)	FOC		\$150.00		\$150.00	0	22,500
Timber Analysis							
Batch	18.40		20.20		20.20		
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Batch	\$2.05		\$8.00 per sample		\$8.00 per sample	320	320
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Investment and Trade Facilitation	FOC		\$10/per application		\$10/per application	0	100
Long Term License			\$50 per ha		\$50 per ha		
Application Fee for Renewal License	FOC		\$10		\$10	0	
Verification	FOC		\$20 per hr		\$20 per hr	0	
Annual License	FOC		\$20hr		\$20hr	0	
Application Fees for renewal of license	FOC		\$10		\$10	0	

Verification	FOC	\$20 per hr	\$20 per hr	0	
Casual License	FOC	\$10 per ha	\$10 per ha	0	
Application Fees for renewal of license	FOC	\$10	\$10	0	
Verification	FOC	\$20 per hr	\$50 per ha	0	
Woodlot license					
Monthly application and renewal of woodlot license	FOC	\$10/mth	\$10		
Total				38,703.26	1,583,759.13

*****This excludes revenue from the Trading & manufacturing Account (TMA)

680-7
No. 6.

LOG SCALING RULES AND LOG DEFECT ALLOWANCE
(excluding plantation grown logs)

METRIC EDITION 1977

Issued by Department of Forestry, Suva

C O N T E N T S

1. Preamble
2. Method of Log Measurement
 - (a) Length
 - (b) Centre diameter
3. Assessment of Volume
 - (a) Timber in the round (logs)
 - (b) Converted timber (sawn)
4. Allowances for Defects
5. Defective sections
6. Butt-hole, hollow or pipe, decaying heart, heavy shakes and termite galleries.
7. Side hole
8. Decay or rot pocket
9. Decayed sapwood
10. Forked sections (forks)
11. Shatter, splits, or end checks
12. Full length flanges or fluting
13. Defective buttresses - Fluting
14. Crooked (bent) logs
15. Hidden defect
16. Combined defects.

◁ Crest

LOG SCALING RULES AND LOG DEFECT ALLOWANCE

ISSUED BY THE FORESTRY DEPARTMENT, SUVA, FIJI

(Metric Edition 1977)

1. PREAMBLE

Log scaling in Fiji is most commonly carried out in order to establish the volume of merchantable timber in round logs expressed in recognised units of measurement for the purpose of their sale or purchase. These rules are written for assessment of logs from the natural forest and the assessment of logs from plantations is specifically excluded.

Most methods used for obtaining log volumes are based on the volume of a true-cylinder, less, in some cases (e.g. the Hoppus scale previously used in Fiji) a standard allowance for loss in conversion to sawn timber for unmerchantable slabs and sawdust.

Since very few, if any, logs represent a true cylinder and many contain gross irregularities and defects which in some cases substantially reduce their content of merchantable timber, certain further allowances are made.

The net merchantable content is arrived at by assessing the volume of the defects present and deducting them from the measured gross volume of the log.

The object of the log measurement procedures described is to arrive at a fair and equitable method of assessing the volume of sound timber in logs of indigenous tree species.

The method of assessing partially concealed defects is designed to give fair average allowances. A greater degree of accuracy in individual cases will certainly be obtained where defects can be assessed visually while a log is being converted and, if mutually convenient, it would be preferable to measure where visual assessment can be made. It is emphasised, however, that this is not a prerequisite to accurate measurement as, with careful inspection and a little effort, a reasonably accurate assessment of a log's merchantable content can be made.

Equipment for scaling logs consists of a tape or tapes which will give a direct reading of log diameters in centimeters and log lengths in metres and centimetres, an axe, a marking hammer, pencil, note book and metric volume tables.

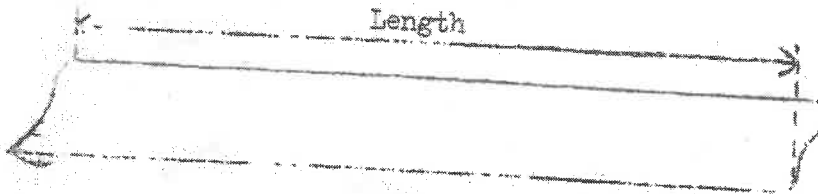
2. METHOD OF LOG MEASUREMENT

(a) LENGTH

- 1) The length measurement taken is the distance between the two ends of the log.

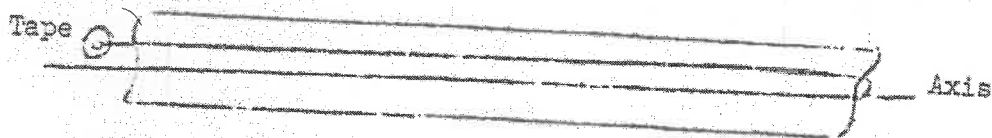
at right angles to the plane of the longitudinal axis of the log to a similar point at the other end of the log.

Fig. 1.



- ii) The measuring tape must lie in a plane parallel with the longitudinal axis of the log.

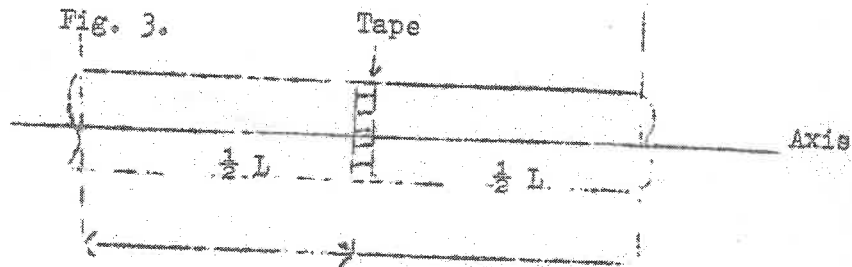
Fig. 2.



- iii) The measuring tape must be pulled tight and the Forest Officer must hold the tape container so that he alone holds the end of the tape which records the length of the log.
- iv) Logs may be of any length provided that any log shorter than 2.4 metres in length need not be removed nor measured and may be rejected by the buyer. If accepted it shall be measured and accounted for in the usual manner.
- v) Log lengths shall be measured in metres and centimetres but the recorded lengths shall be rounded down to the nearest "valid length" in the manner described below.
- vi) A "valid length" is a figure in the pregression 2.4, 2.7, 3.0, 3.3, 3.6, ~~3.9~~ metres etc. It is a figure exactly divisible by 0.3 metres.
- vii) In order to save time in calculating valid lengths they should be marked indelibly at the appropriate points on the measuring tape.
- viii) No deductions or allowances in length will be made except as provided for in paras. 10, 11, 13 and 14 (iii).
- ix) The mid-point of the length of the log shall be calculated (before the log length is rounded off)

(b) DIAMETER

- i) Diameter measurement shall normally be made at the mid-point of the length of the log.
- ii) Diameter measurement shall be taken by passing the diameter tape around the log so that the tape shall be in a plane at right angles to the longitudinal axis of the log.



- iii) The diameter shall be read to the nearest centimetre below, directly from the tape scale which converts girth to diameter. Caution: Most tapes are graduated in girth on one side and diameter on the other side. Be sure to use the diameter reading. The diameter measurement is the girth divided by 3.14.
- iv) In making diameter measurement where bark is not stripped or otherwise wholly removed the ~~actual~~ rounded measurement outside bark shall be taken and a deduction of 2.5 centimetres diameter shall be made as bark allowance. Where bark has been partially removed, the bark allowance should be proportionally reduced.
- v) The buyer shall have the right to debark any log at its mid-point, in which case no bark allowance shall be made.
- vi) In exceptional cases where the mid point of a log is inaccessible, or where the log is malformed in such a way that the mid-diameter measurement would clearly give a false value to the total volume calculation, a mean diameter may be calculated.
- vii) The mean diameter shall be calculated from the average between the diameter at the small end and the diameter at the large end of the log. The point of measurement in each case shall be as near as possible to the out end where the tape can be placed around a complete circumference except in the case of buttressed logs (see para. 13).
- viii) In other cases of difficulty a mean diameter may be calculated by measuring the diameter at two points on the log equidistant above and below the centre point and recording the average of the two.

$$4. \text{ Volume} = \frac{(d)^2 \times \text{length (m)}}{10000}$$

127324

3. ASSESSMENT OF VOLUME FOR ROYALTY PAYMENTS

(a) TIMBER IN THE ROUND

- i) The unit of measurement shall be the cubic metre and thousandths of a cubic metre (i.e. 3 decimal places).
- ii) Volume tables shall normally be used to calculate volume from mid diameter in centimetres and the length in metres and decimetres rounded down to the nearest valid length (see 2a (v) above).
- iii) In the absence of volume tables the formula for calculating volume is:

$$\text{Volume (m}^3\text{)} = \frac{\left(\frac{\text{diameter (cm)}}{2} \right)^2 \times \text{length (m)} \times 3.14}{10000}$$

(b) CONVERTED TIMBER

$$\text{Volume} = \frac{(d)^2 \times \text{length (m)} \times 3.14}{40,000}$$

- i) The unit of measurement is still the cubic metre and thousandths of a cubic metre (i.e. 3 decimal places).
- ii) The length of a piece of sawn timber shall be recorded to the valid length (see 2a(v) above).
- iii) The width and thickness of a piece of sawn timber shall be calculated in millimetres.
- iv) The volume of each piece of sawn timber shall be calculated by multiplying the width (in millimetres) by the thickness (in millimetres) by the length (in metres) and dividing the product by one million (i.e. move the decimal place six places to the left, adding zeros if necessary).

Example: Board length 7.2 metres
 Width 150 mm
 Thickness 25 mm

$$150 \times 25 \times 7.2 = 27000$$

Move the decimal point 6 places to the left

= 0.027000 cubic metres

Rounded to 3 decimal places

= 0.027 cubic metres

- v) No allowance for defects of any kind shall be made for sawn timber.

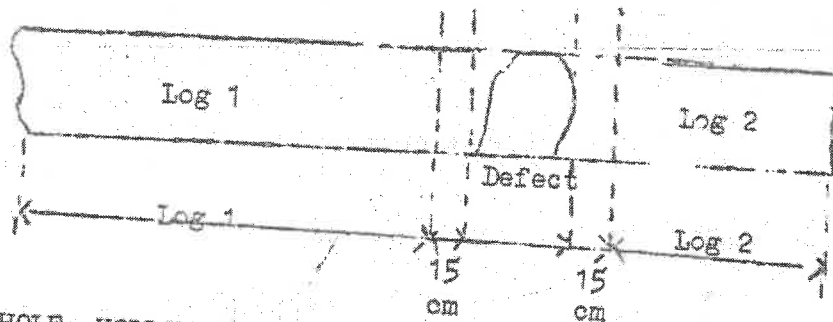
4. ALLOWANCES FOR DEFECTS (ROUND TIMBER)

- (a) Allowances in accordance with the following rules shall be made for defects such as Butt-holes, Side holes, Hollow or Piped logs, Decay or Rot pockets, Decaying heart, Decayed galleries, Shatter, Full length flanges or fluting, Defective buttresses, Defective sections and Crooked (or bent) logs.
- (b) When assessing the defective content for a butt-hole, side-hole, hollow or pipe, decay or rot pocket, decaying heart or fork section, overall dimensions shall be recorded in metres and decimetres to the nearest decimetre for conversion into cubic metres. 10 cm

5. DEFECTIVE SECTIONS

Where a log contains a completely defective section between two good sections, then each good section, for the purpose of measurement, shall be considered as an individual log. An allowance of 15 centimetres in length shall be made into the sound wood on either side of the defect to determine the point from which the log length should be measured.

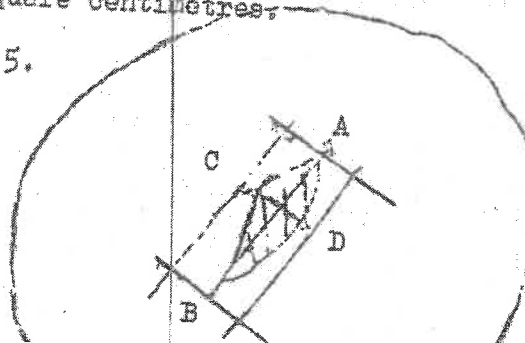
Fig. 4.



6. BUTT-HOLE, HOLLOW OR PIPE, DECAYING HEART, HEAVY SHAKES AND TERMITE GALLERIES

- (a) An allowance of 2.5 centimetres is made on all sides of the defect extending into sound wood. The diameter of the defect is then measured in two directions at right angles to each other. The two diameter measurements (rounded off to the nearest centimetre) are then multiplied together to give a cross-sectional area measurement in square centimetres.

Fig. 5.



Cross sectional area of defect in square cm is
 $AB \times CD$

- (b) The depth of the defect may be assessed in any one of the following three ways:-

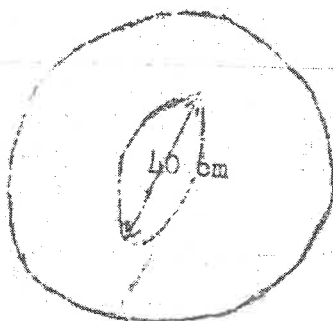
VISUAL INSPECTION - If signs of decay, hole or shake are visible at both ends of the log then it can be assumed that the depth of the defect is equal to total length of the log.

USE OF A PROBE - If the hole caused by the defect is free of decayed wood or obstruction then probe the depth and add one metre to the measured depth of the hole. Length measurement is rounded up or down to the nearest valid length.

ASSESSMENT - If the defect is a hole and is surrounded by a ring of defective wood or is filled with mud or other obstruction or is one of the other types of defects mentioned which by their character preclude the use of a probe and if there is no sign of decay or defect at the other end of the log then the depth of the defect shall be assessed as follows:-

Where the greatest diameter of the defect is under 45 centimetres then multiply the greatest diameter by 10 (ten).

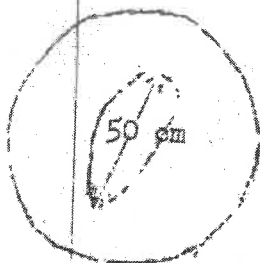
Fig. 6.



Example:
 Greatest diameter of defect = 40 cm
 Therefore assessed depth of defect along axis of log is $40 \times 10 = 400$ cm
 = 4 metres

~~Length is rounded up or down to the nearest valid length.~~
 Where the greatest diameter of the defect is over 45 centimetres then multiply the greatest diameter by 6 (six), rounding resulting length up or down to the nearest valid length.

Fig. 7.



Example:
 Greatest diameter of defect = 50 cm
 Therefore assessed depth of defect along axis of log is $50 \times 6 = 300$ cm
 = 3 metres

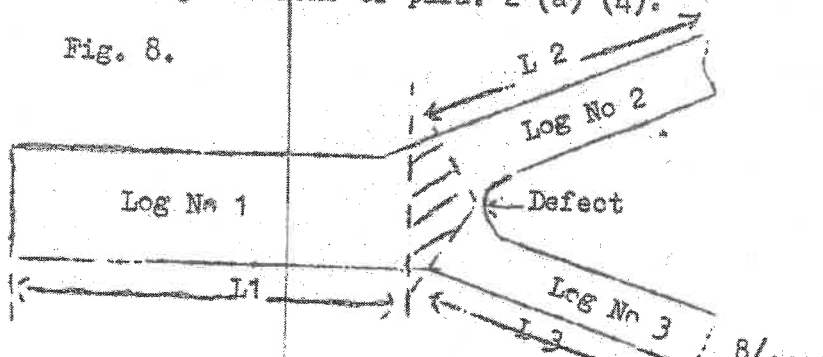
Note:

Defects over 45 centimetres diameter generally relate to *Dakua makadre*. Penetration along log length is more restricted than in other species, hence the reduced multiplication factor.

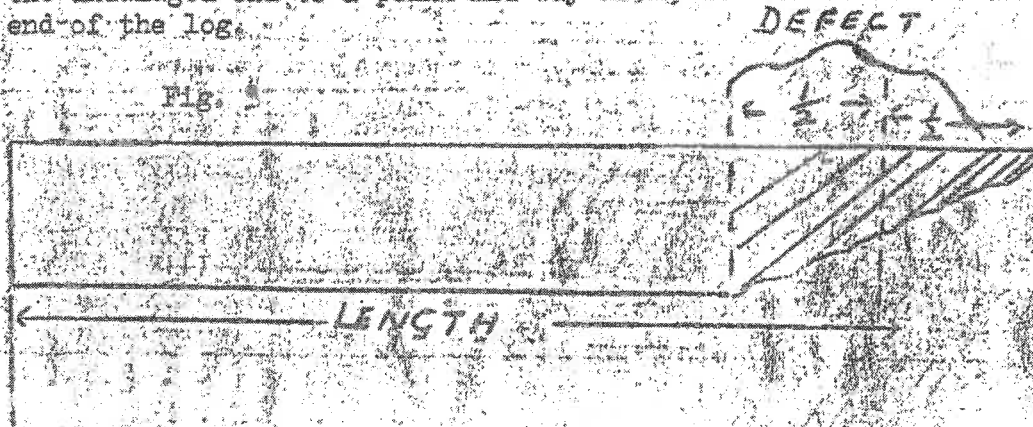
Provided that the maximum length of defect assessed under these rules shall not be more than the length of the log less 0.3 metres.

- (c) The volume (in cubic metres, 3 decimal points) of the defect is found by multiplying the cross sectional area (in square centimetres) by the depth (in metres) and dividing by 10000 (i.e. move the decimal point 4 places to the left).
7. SIDE HOLE - By chopping with an axe, determine the extent of the decay and then add 3 centimetres to the depth, 5 centimetres to the width and 30 centimetres to the length of decay; provided that where the decay extends to within one metre of either end of the log or another defect, then the length measurement of the defect shall be extended to the end of the log or the other defect. Width and depth measurements are rounded to the nearest 10 cm and the length to the nearest half metre. The volume of the defect is found by multiplying the width by the depth by the length (in centimetres) after rounding and dividing the result by 10 00000 (i.e. move the decimal point 6 places to the left) to give the volume of the defect in cubic metres rounded to 3 decimal places.
8. DECAY OR ROT POCKET - Where these are visible on the side of the log they should be dealt with in the same manner as Side-hole. Where they are visible on the ends only their cross-sectional area shall be measured as in Butt-holes and their length assessed by multiplying the greatest diameter by 4 (four).
9. DECAYED SAPWOOD - In dead or windfallen trees where heart-wood remains sound but sapwood shows evidence of decay, volume assessment is based on heartwood only. Measure the average diameter of the heartwood at both ends of the log. Add them together and divide by two to obtain the mean.
10. FORKED SECTIONS (FORKS) - Where a log contains a fork, that portion of its length from the point of swelling below the fork to the crotch shall be disregarded for the purpose of measurement and the sections above and below will be considered as individual logs. Provided that where they are less than 2.4 metres in length or 25 centimetres in diameter over bark they shall also be disregarded for the purpose of measurement, subject to the provisions of para. 2 (a) (4).

Fig. 8.



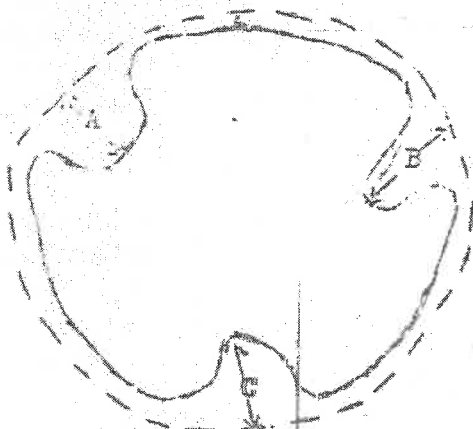
1. SHATTER, SPLITS OR END CHECKS - Length of the log is measured from the undamaged end to a point mid-way along the defect at the damaged end of the log.



12. FULL LENGTH FLANGES OR FLUTING

- i) The depth of the fluting is measured at the centre diameter point of the log as shown in Fig. 10, to the nearest centimetre.
- ii) If the log has more than one flute the average is found by adding together all the individual depths and dividing the sum by the number of measurements taken.
- iii) Multiply the average depth by 2 (two) and deduct the resulting figure from the actual centre diameter of the log to obtain the recorded centre diameter.

Fig. 10.



Example:

Dotted line is measured with the diameter tape, giving a diameter reading of 58 cm.
Depth of flutes:-

A = 13 cm
B = 15 cm
C = 14 cm

42 cm

Average depth $42/3 = 14$ cm
 $\times 2 = 28$ cm

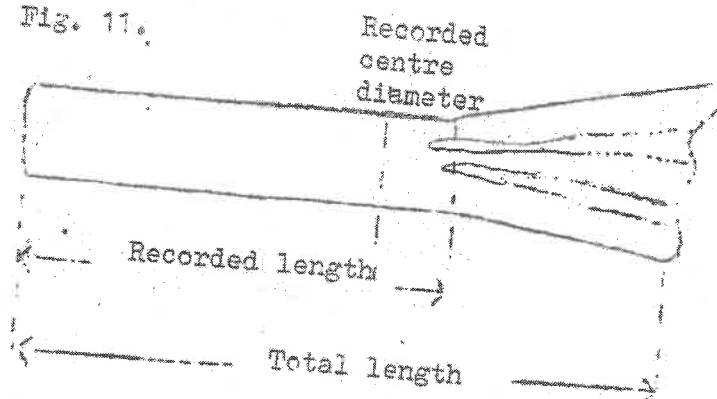
Recorded diameter $58 - 28 = 30$ cm.

13. DEFECTIVE BUTTRESSES - FLUTING

- i) Assess the point on the log where the flutes or indentations between the buttresses do not penetrate further than the circumference of the log at its centre diameter point as shown in Fig. 11.
- ii) Measure the distance from the top end of the log to this point to give the recorded length of the log.

- iii) Diameter is measured at the mid point of total length.

Fig. 11.



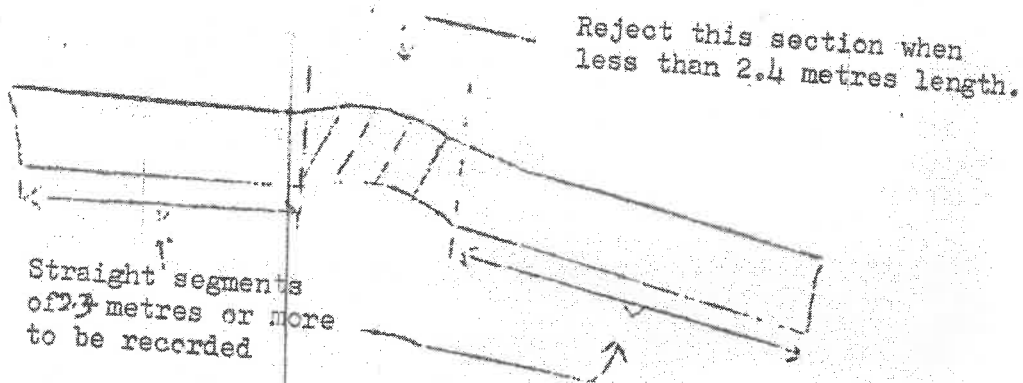
14.

CROOKED (OR BENT) LOGS

- (a) No allowance for this type of defect shall be made:-

- i) Where the centre diameter of the log (under bark measurement) is 70 centimetres or over.
- ii) Where the depth of the deviation (bend) is less than 3.5 centimetres per running length of four metres.
- iii) Where one or more straight segments of not less than 3.0 metres can be obtained from a log, provided that in obtaining straight segments of 3.0 metres in a crooked log the remaining sections of the log shall be disregarded for the purpose of measurement, where they are less than 3.0 metres in length.

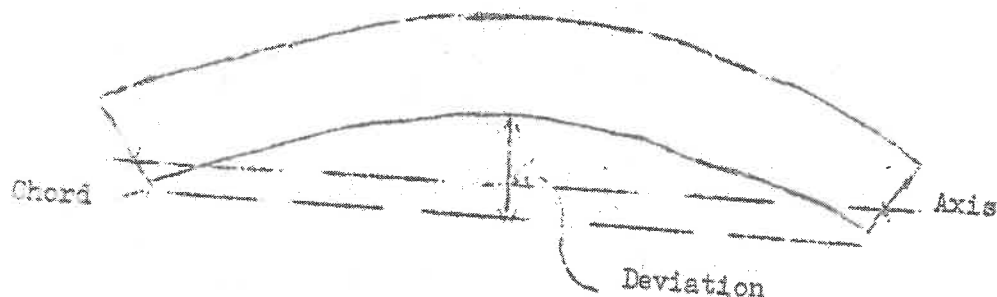
Fig. 12.



Where the remaining sections of a crooked log are 2.4 metres or more in length, defect allowances shall be made in accordance with paragraph (b) below.

- (b) Where a log has a centre diameter between 36 and 70 centimetres and where straight segments of 2.4 metres or longer cannot be obtained

- i) Measure the deviations (bends) of the log at their greatest point. This is obtained by stretching the tape in each case on a plane parallel with the longitudinal axis of the logs on its concave and measuring the greatest distance between it and the log.
- ii) If the deviation exceeds 3.5 cm, calculate two-thirds of the deviation and subtract this from the measured centre diameter.



Example:-

Deviation	12 cm
Actual centre diameter	58 cm
Deduction $\frac{12 \times 2}{3}$	8
Recorded centre diameter	50 cm

(c) The following rule applies to logs which may be eligible for half royalty i.e. logs measuring:

- (a) less than 7.5 metres in length and not exceeding 36 centimetres centre diameter.
 - (b) not less than 7.5 metres in length and not exceeding 39 centimetres centre diameter.
- i) Such logs or any part thereof may be rejected if the deviation exceeds 10 cm in 4 metres always providing that the tree length is cross cut (or measured as if it had been cross cut) so as to minimise the effect of a bend, and
 - ii) any such log may be rejected if the total assessed defects exceed 30% of the gross volume (see also regulation No. 16 below).

5.

HIDDEN DEFECT - When, on sawing at the breakdown bench, a log can be shown to have a substantial defect which was not visible externally at time of measurement, the buyer shall be entitled to a reassessment of defect of that log provided that the log may be identified and related to its original measurements on the Forestry Department's timber statement. The revised assessment will be arrived at by reference to these rules.

16.

COMBINED DEFECTS - Where a log contains several defects that when added together give a volume in excess of 50% of the total volume of the log, the log may be rejected.



FORESTRY TRAINING AND EDUCATION DIVISION



2015 ANNUAL REPORT

**FORESTRY TRAINING CENTRE, COLO I SUVA
P O BOX 1175, NABUA
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A. Executive Summary

The Training and Education Division 2015 Business Plan continued to be guided by the Fiji Forest Policy 2007 and similar to 2014, it sets the directions for all our training and awareness activities.

Under Section 5.5.7 of the Forest Policy, Forestry Training and Education outline the following: ***The Forestry Department will have training courses conducted for forestry personnel and resource owners in all aspects of sustainable forest management, timber utilization principles and practices, log scaling, and protection of environmental values***

The Divisions contributes to 5 major outputs of the Forestry Department. This includes;

- Output 1: Portfolio Leadership, Policy Advise and Secretariat Support
- Output 3: Education and Training – Forestry Development
- Output 4: Public Awareness and Promotion – SFM
- Output 11: Promote Gender Equality and Women in Development – Forestry
- Output 12: Financial Services – Forestry

Development of the forest sector through training has been the focus of development especially for the staff, communities and other forest harvesting industries. The number of training request received continues to increase for 2015 and resulted in the highest number of training conducted for the forest harvesting industry.

The Forestry Training Centre has been recognised as a Training Provider by the Fiji High Education Commission in 2014. Provisional registration was granted in 2015 and all efforts have now been taken to ensure that both centres are fully registered in 2016. The processes are underway for the accreditation of all training programmes with the assistance of the FAO through a local Consultant.

All Teaching staff has completed the National Training and Productivity Centre Training of Trainers and efforts are now building towards getting them registered as Training Officers in 2016.

It is also necessary to highlight the importance of FTC as a strategic unit of the Department of Forestry that responds to the short and medium term capacity building needs of the ministry, industries and communities on forestry related issues. More specifically the Forestry Training Centre needs to drive advocacy, policy and skills development on codes of best practice in forest management and conservation in forestry related economic, social, and cultural and research activities.



B. Introduction

The Forestry Training Centre and the Timber Industry Training Centre continues to perform its Education and Training roles as mandated by the Ministry through the 2015 Annual Corporate Plan. We are grateful to the ministry for the support in ensuring that FTC and TITC continued to train adequate numbers of professional, technical and specialist staff to meet the needs of the sector in ensuring the sustainable management of the forest resources.

The two centres' have continued to provide regular demand driven training as well as the review of the Forest Technician curricula in 2015. The review which will be completed in 2016 has been focused on the development of a Biological Diversity unit. This review is funded by the FAO under the GEF 4 projects

The Forestry Training and Education Division continue to provide training courses as outlined in the Fiji Forest Policy. The focuses are on the following areas:

- I. Conduct courses for forestry personnel and resource owners in all aspects of sustainable forest management, timber utilisation principles and practices, log scaling and protection of environment values
- II. Conduct national awareness programmes for public education on forest values and the need for conservation and sustainable forest management.
- III. Conduct training needs assessment with the forest industries and other relevant stakeholders. The focus is to develop a demand oriented curricula and training programmes

The Training and Education division is responsible for formal training within the department and technical industrial training in the forest sector throughout the country. The division continues to carry out five main types of training:

- Forest Technician Training;
- Technical Skills Training,
- SFM Awareness Training
- Wood Processing
- Applied Woodcraft Technology Training.

The Forest Technician Training, Technical Skills Training and the SFM Training are carried out at the Forestry Training Center (FTC) in Colo I Suva, while the Wood Processing and Certificate in Applied Woodcraft Technology Training is held at the Timber Industry Training Center (TITC) in Nasinu.



C. FTC Staff

FTC has a total staff of 23 consisting of 8 Technical Staff, 4 administration staff and 11 GWE and Casual staff. One of the GWE is based at the Forestry Training Centre Campus in Lololo, Lautoka. Details are in Appendix 1

	NAME	SECTION	POSITION
1	Manasa Luvunakoro	Administration	A/PFO Training
2	Malakai Sevudredre	Technical Skills	Forestry Officer
3	Moape Drikalu	Academic	Forester
4	Meli Vauvau	Harvesting	Forester
5	Mereoni Rokocaucau	Academic	A/Forester
6	Arieta Nailagovesi	Technical Skills	Forest Guard
7	Isimeli Seru	Harvesting	Forest Guard
8	Inosi Kasanibuli	Technical Skills	TR/Forest Guard
9	Savenaca Muca	Technical Skills	Chainsaw Mechanic
10	Osea Katonivere	Administration	Clerical Officer
11	Sireli Donu	Administration	Storeman
12	Noor Shafiq	Administration	Librarian
13	Sheirina Bi	Administration	Stenographer/Typist
14	Alisi Sesenabaravi	Administration	Cleaner
15	Joseva Ravia	Administration	Driver
16	Inoke Sesenabaravi	Administration	Cook
17	Reavi McDonald	Administration	A/Cook
18	Joseva Tekuku	Administration	Kitchen Hand
19	Lorosio Salaba	Administration	Compoundman
20	Peceli Ciriwai	Administration	Carpenter
21	Jone Navuso	Administration	Watchman
22	Petero Rokoli	Administration	Watchman
23	Saimoni Ratumaiyale	Administration	Compoundman (Lololo)



D. Assets

1.0 Assets - Building

FTC has a total of 15 staff quarters. 11 are in Coloisuva while 4 are still in Lololo. 1 dormitory are still in Lololo as well as the kitchen, storeroom and garage. The main office has been dismantled and rebuild in Nasinu as part of the Showroom for TITC

Fig 1: Remaining Dormitory in Lololo



Fig 2: Lololo Building



The remaining quarters in Lololo are in a poor conditions and needs to be repaired or dismantled. Our proposal was for the rest of the building to be relocated to Coloisuva to ensure that the house with the current materials can be salvaged while some materials are still intact.

The 12 staff quarters in Coloisuva has been repaired with funds provided by the ministry as part of the 2015 capital projects. Majority of the work has been completed in 2015 while minor repairs are carried forward to 2016

Fig 3: Coloisuva quarters before repair



Fig 4: Coloisuva quarters after repair





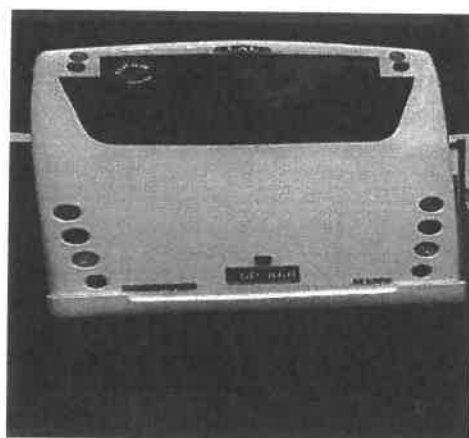
2.0 Assets - Vehicle

The division has 3 vehicles in good operating conditions but age is catching up as experience by the high frequency of maintenance in the year. We are however fortunate to be provided with a leased vehicle (1 Mazda twin cab and one 31 seater mini bus) towards the end of the year. Vehicles details are in Appendix 4

Fig 5: Leased Vehicle GP 786



Fig 6: Leased Vehicle GP 868



E. Finance

The Division managed to stay within its allocated budget for the year with no overspending on any allocations. This is despite the financing of other ministries activity from the training vote. Details are in Appendix 2

F. Capacity Building

The Training and Education staffs are grateful for the opportunity to attend training and seminars to build their capacity in order to be better equipped with the relevant and up to date information in Forestry related areas. APFO Training attended a seminar in China on Human Resource Development while other staffs attended local training and seminar. Five staffs are doing their own training at the local universities to upgrade their qualification and I would strongly recommend that they are supported in future if they decided to go for full time studies. Short courses locally or overseas will assist the staff in maintaining and broadening their knowledge on areas that are important for the development of the sector on Forestry and training related areas.



G. Training

1.0 Technical Skills Training

FTC training on Technical skills is based on the Fiji Forest Policy **Section 5.2.4 Fiji Forest Harvesting Code of PracticeAll supervisors, chainsaw and machinery operators working in forestry operations must be trained and certified in the principles of the FFHCOP as part of their mandatory licensing process**

The competency based training to the forest industry concentrates on skills involved in operating chainsaws, skidders, loader and bulldozer training, logging planning, supervision and management. It integrates theories, knowledge and skills in the work environment with the aim of improving efficiency and quality of work.

The Training and Education Division was not able to fulfill all the request coming from the industries in regards to chainsaw training. The year 2015 has seen the highest number of training conducted for the industries. We have exceeded the 2014 number by 45%

Table 1: 2015 Training summaries

2015 TECHNICAL SKILLS TRAINING				
	Stakeholders	Training Type	Participants in 2014	Participants in 2015
1	Fiji Electricity Authority & FNU	Fell Trees Manually Basic	37	49
2	Resource Owners	Harvest Tree Manually Basic	105	232
3	Maritime	Harvest Tree Manually Basic	55	15
4	TITC Students	Chainsaw Mechanic	16	16
5	Forest Harvesting Industries	Harvest Tree Manually Basic	54	74
	TOTAL		267	386

A total of 386 personnel have been trained in 2015 from 5 different stakeholders. This shows an increase of 119 personnel trained from the 2014 numbers. The only decrease was for the maritime island where training was only conducted in Matuku. Resource owners continue to have the biggest number trained for 2015 which is similar to the 2014 trend. Details of the training is in the Appendices



2.0 SFM Training and Awareness

Sustainable Forest Management is the process of managing forest to achieve one or more clearly specified objectives of management with regard to the production of continuous flow of desired forest products and services without undue undesirable effects on the physical and social environment. It ensures that forest resources are preserved to meet the needs of future generations.

It is the practice of regulating forest resources to meet the needs of society and industry while preserving the forest's health. Therefore, training on sustainable forest management is always looking to strike a balance between the demand for the forest's natural resources and the vitality of the forest.

The SFM Training program aims for 2015 is to educate communities on the national advantages of managing their forests in a sustainable manner. The guideline is set under the Fiji Forest Policy Section 7.4.4 Resource Owners which outlines the following:

- ***Resource owners will manage their forest resources in compliance with the Forest Management Standard, via forest management companies, with the assistance of the FD, the NLTB and the FAB. They will assist the FD with scaling logs.***
- ***They will be involved in harvesting and processing their trees and will be responsible for rehabilitating forest areas. Landowner groups will be encouraged to take equity in commercial forest developments and to become engaged in community forestry approaches.***

In view of community engagements, the Training & Education Division conducted 3 SFM Trainings in the following area:

- Tikina Nawaka in Nadi
- Levuka in Ovalau
- Coloisuva for communities in Ra, Tailevu and Nadi

The focus of conducting training and awareness in Nadi is to address the recent flooding of Nadi town and the surrounding areas. Training was focused on Tikina Nawaka which includes Nawaka and Vatutu village.

A total of 114 community members attended the training in the 3 tikina above and 22.8 of this is female while 77.2 are males. Details are in the table below:



	TIKINA	MALE	FEMALE	TOTAL
1	Nawaka	34	6	40
2	Ovalau	34	17	51
3	Coloisuva	20	3	23
	TOTAL	88	26	114
	Percentage	77.19	22.81	100

Gender Analysis

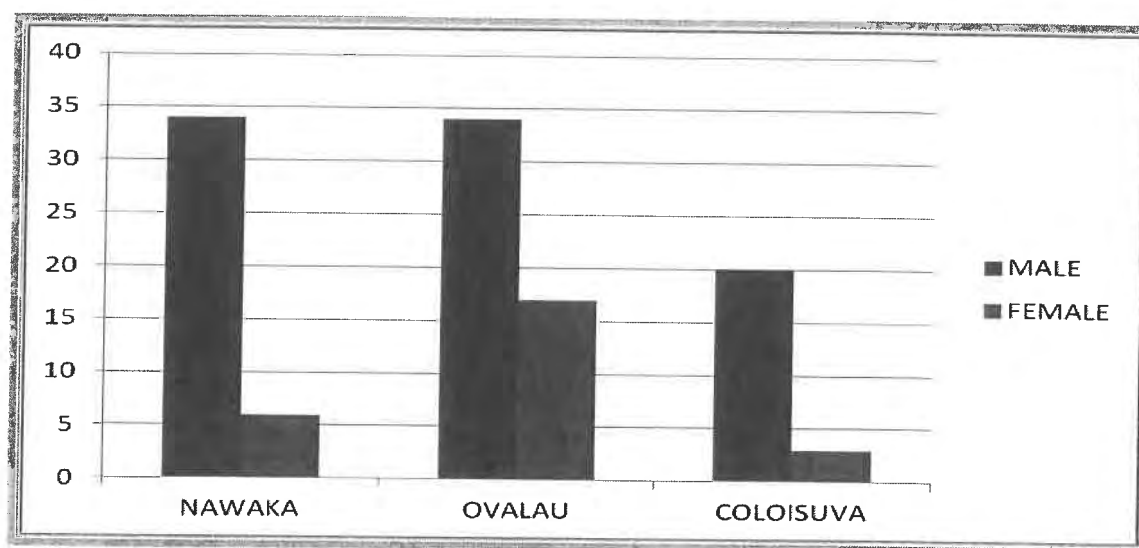


Fig 7& 8: The resource owners in a training session





3.0 Forest Harvesting Training

Considerable progress has been made in recent years in the introduction of environmentally sound forest harvesting practices throughout Fiji. Nonetheless, much remains to be done. There is a continuing need to however to refine harvesting practices and techniques so that they become fully compatible with the objectives of sustainable forest management as well as fulfilling the requirements set out in the FFHCOP, allowing them to contribute in an important way to the economic and social aims of sustainable development.

A total of 9 training activities were completed by the section in 2015 which includes FFHCOP awareness, Supervision Training, Harvest Planning and Machine Training.

610 individuals have been trained in 2015 compared to 153 in 2014. Needs for training continues to be received from the logging industry in 2015 and this has to be analysed before the programme starts for 2016. Details of the achievements are in the Appendices.

Fig 9: Crosscutting operation



Fig 10: Loading operation



Areas & Topics Covered

The course syllabus comprises 18 main components as summarized below:

1. Scope

It is basically a brief on the functions of the Code and the depth of its enforcement capacity.

2. Legal Compliance

This sets out the legal empowerment for the FD to enforce the CODE and includes other statutes that provides legal support

3. Pre-operational inspection

This section places obligation on the different stakeholders to identify roles during the pre-harvest plan phase and assist in the preparation of a HP

4. Pre-harvest inventory

The process to capture stand information (tree species composition, basal area, standing volume, log quality) for calculating the allowable harvest volume & information on the regeneration potential of the forest before harvesting

5. Silviculture prescriptions

A silviculture prescription (SP) is an operational plan that describes forest management objectives for an area for which harvesting is proposed. It offers pre-information to assist during harvest planning and the residual stockings

6. Harvesting plan

The process of putting in place the most efficient and environmentally responsible means of harvesting timber to ensure that forest values will be protected during harvesting. This is beneficial to field operators as needs and work strategies are thought out in advance

7. Training & Accreditation

The possession of appropriate accreditation indicates that proper training had been accomplished. This is a prerequisite to being allowed to work in the forests. Accordingly these qualifications demand total adherence to the COHP guidelines & OHS Act with its safety prescriptions. Operators must provide evidence of training & competence prior to issue of license

8. Weather restrictions

It is considered necessary to close the harvesting operations during adverse wet conditions for the protection of water quality and soil to minimise the extent of disturbance to the forest environment and dangers to the forest workers.

9. Buffer strips

A Buffer strip is a strip of existing vegetation retained along the side of the watercourse that will be harvested. Special conditions are laid down for the protection of vegetation adjacent to watercourse to protect water quality & harvesting refuse entering the streams

10. Road access

Road accesses are important in the log production chain as they dictate the flow of produce from stumps to mill. Under investment in roading will inevitably restrict road usage during stormy weather

11.Felling operation

This is the process involved in getting the trees severed off its stump usually by chainsaws prior to being transported to the landing

12.Skid tracks

Extraction route from tree stumps to the landing (include both major & minor)

13.Landings

Area judiciously set aside in the operational site where logs are processed, stored and loaded out to the sawmill

14.Rehabilitation of harvest area

The process of restoring the logged out area to as close as possible to its original state (i.e. before harvesting operation) so that risk of erosion and damage to the residual stands are minimised.

15.Forest hygiene

Keeping the forest environment & its assets healthy & clean, pollution free and intact

16.Harvesting machine standard

Maintaining the condition of machines to a standard conducive to safe usage and free from risks that complies with the OHS requirements

17.Harvesting supervision

Those in charge to ensure that forest harvesting is being done properly and that workers are behaving correctly

18.Monitoring & evaluation of operations

Monitoring & Evaluation is a formal process, which assesses performance against the Code Weaknesses are identified & appropriate remedial actions instituted to iron out irregularities.

Training Methodology

The wardens had different academic backgrounds coupled with the different age group range and the diverse level of experiences .This validated that lectures and presentations be made in a mixture of English and Fijian to suit their level of understanding and enhanced how they comprehended and grasp issues.

Training involved both classroom presentations and field exercises. Training deliverances were made through classroom lectures, general discussions, field demonstrations and practical exercises. Group works were encouraged and a representative from each group presented their tasks from the front.

Training aids included use of multimedia, PowerPoint presentations and whiteboards to consolidate subjects' deliberations.

Unfortunately, field trainings was conducted in a plantation forest because of the remoteness of native harvest sites and the limited time available for such exercise.

In terms of skills and knowledge expected to be obtained in the field very little is amiss as the geographical setting one experience in plantations is by no means any different from the physical features in the native forest.

CONCLUSION

The workshop was officially closed by Acting Director Training & Education with the understanding that all represented intent on broadening their scope of understanding and knowledge which will be useful to enhance and expand the way they perform their responsibilities in achieving good practice and the minimization of the adverse impacts.

Comments & Recommendations

- There is a vital need for the wardens to have regular refresher training course and also to conduct awareness to communities as it addresses the very issues on how forest harvesting should be conducted so as to achieve best practice and minimise any adverse impacts. A greater level of awareness is dispatched therein and it also provides the opportunity for them to learn and keep abreast with new developments.
- Training is an investment. While we acknowledge that the harvesting industry sector does have a busy schedule it is highly in their interest to reciprocate the inputs by Forestry Ministry in its endeavor to up skill resources and develop capacity levels throughout the sector.
- The verification process done by the Ministry of Forestry needs to be strengthened.
- Final monitoring inspection upon the completion of harvesting areas prior to the closure or license area to be strengthened in both regimes (pine/native).

Appendix 1:

FOREST WARDEN COURSE PARTICIPANT

Appendix 2:

COURSE PROGRAM

MODULE 2 INTRODUCTION TO FOREST CODES

Day/Time	Day 1 Monday 4/02/19	Day 2 Tuesday 05/02/19	Day 3 Wednesday 06/02/19	Day 4 Thursday (08/12/2016)	Day 5 Friday (09/12/2016)
8.30am – 10.00am	Opening of the Refresher Forest Warden Training General Administration	Introduction What is Code	Recap	Field Practical	Field Practical Analysis in report format
Morning Tea					
10.15am – 12pm	Forest Warden – Presentation on their Achievements and Challenges?	What is Fiji Forest Code of Practice 2013[Pine &Native]	Fiji Forest Code of Practice 2013 <i>[Operational Component]</i>	Field Practical	Field Practical Analysis Presentation
Lunch					
12pm – 3pm	Presentation on their Achievements and Challenges?	Aims of Code	Fiji Forest Code of Practice 2013 <i>Operational Component]</i>	Field Practical	Course Evaluation
Afternoon Tea					
3.15pm – 4.30pm	Presentation on their Achievements and Challenges?	Fiji Forest Code of Practice 2013	Fiji Forest Code of Practice 2013 <i>Operational Component]</i>	Field Practical	End of program



Appendix 6: Forest Warden Participants

WESTERN Division				
#	Names	Stations	Province	Comments
1	Semisi ketewai	Nadarivatu	Ba	Nadarivatu (FPT Nominee)
2	Laisenia Lobau	Ba	Ba	Tikina Nalotawa and Wabu Pine Scheme
5	Etonia Kelei	Rakiraki	Ra	Navolau (CI Nominee)
6	Richard Nacanieli	Rakiraki	Ra	Drana Village (CI Nominee)
7	Jona Cati	Rakiraki	Ra	Navolau (CI Nominee)
8	Josateki Tuilawaki	Rakiraki	Ra	Nokonoko Village (CI Nominee)
9	Maika Nabale	Rakiraki	Ra	Vitawa Vilage (CI Nominee0
10	Seveci Taka	Sigataoka	Nadroga/Navosa	Draubuta (REDD+ Nominee)
11	Sakenasa Hara	Sigataoka	Nadroga/Navosa	Along the Baravi Coral Coast
12	RT Meli Nakasavu	Sigataoka	Nadroga/Navosa	Navosa(Bukuya-Keyasi Area)
13	Meli Naiqama	Nasoqo	Naitasiri	Talanoa Trek Nominee
CENTRAL/EASTERN DIVISION				
1	Maleli Rakula	Korovou	Tailevu	Dawasamu to Nakorotubu (FPT Nominee)
2	Malakai Sobanivalu	Lakeba	Lau	Lakeba Island
3	Alipate Mocevakaca	Lakeba	Lau	Matuku Island
4	Vili Valevatu	Lakeba	Lau	Cicia Island
5	Viliame Veidre	Sawaieke	Lomaiviti	Tikina Narocake



6	Aisea Tokaiqali	Kadavu	Kadavu	Tikina Tavuki
7	Waisea Kania	Naitasiri	Naitasiri	Sovi Basin
8	Laisiasa Naloa	Vunimaqo	Serua	Nabukelevu Concession
9	Viliame Namino	Vunimaqo	Serua	Tikina Serua
10	Sakiusa Mata	Nausori	Rewa	Draunibota Reserve
11	Josevata Nairidi	Namosi	Namosi	Namosi Province
12	Epitani Tabua	Korovou	Sawakasa, Tailevu	Korovou -Dawasamu Corridor

Northern Division

1	Sairusi Salaimacuata	Seaqaqa	Macuata	Seaqaqa to Dreketi
2	Eminoni Roko	Dreketi	Bua	Nabouwalu-Wainunu-Kubulau
3	Maciu Mailekutu	Dreketi	Bua	Dreketi to Nabouwalu-Bua-
4	Jona Cati	Kilaka	Bua	Kilaka Forest Conservation (WCS)
5	Joeli Matai	Kilaka	Bua	Kilaka Forest Conservation (WCS)
6	Jale Rogoyawa	Labasa	Cakaudrove	Korotari/Delaikoro reserve
7	Atunaisa Relenadawai	Savusavu	Cakaudrove	Savusavu-Saqani Area

FOREST WARDEN CODE AWARENESS'

TRAINING COURSE

REPORT



DATE: 4th FEB – 8th FEB, 2019

VENUE: FORESTRY TRAINING CENTRE

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Acknowledgement

I acknowledge with great thanks the support and cooperation by the Director Training & Education and staff for the successful completion of the 1st Code Awareness Refresher training course for the current Forest Wardens.

Am also grateful to the kitchen staff who toiled tirelessly in the daily preparation of breakfast, Lunch, morning and afternoon refreshments which strongly aided trainees to focus intensively on the training program.

REPORT ON 'CODE AWARENESS' TRAINING

INTRODUCTION

Forest harvesting can generate many economic and social benefits. However, poor practices can lead to serious environmental and adverse impacts on regional communities. Our National Forest Policy statement seeks to achieve a thriving forest industry that operates in cooperation with landowners and industry to achieve the sustainable management and utilization of their forests.

This specific training was aimed specifically in providing practical guidance to the forest wardens on how forest harvesting should be conducted so as to achieve best practice and minimize adverse impacts.

The Code prescribes desirable practices aimed at: protecting the forest environment, its assets and its users, while allowing the execution of economically viable operations within acceptable safety standards. Operators underwent relevant training, tests and proper accreditation before being accepted as legitimate operators.

Ministry of Forestry has been a wholehearted advocator of the 'sustainability' concept of the forest resources and protection of the environment' throughout the years. It has made inroads into creating awareness to a large cross section of the community yet this does not seem to effectively filter down to the harvesting crews on the ground. No matter how passionate SFM concept is pursued in the levels of power, it cannot succeed unless those and adverse economical and social benefits that will increase from such ambitions.

RATIONALE FOR TRAINING

The inspirations justifying the 'code awareness' training course is that the **ROLE OF THE FOREST WARDEN**

Is to enforce laws regulating forest, to monitor and report any breaches in relation to forest activities to nearby Forestry Stations, Principal Conservation Officers or Police Stations in the respective divisions throughout Fiji.

Course Objectives

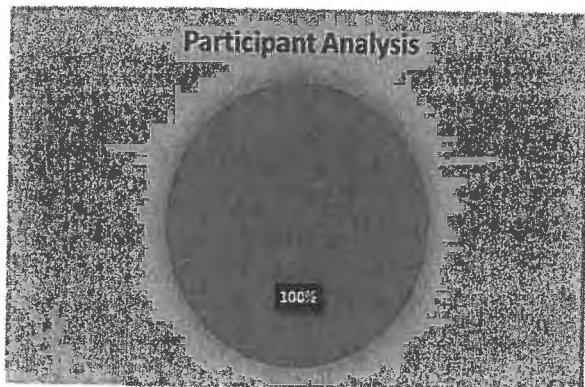
- i. Understand the 2013 FFCOHP
- ii. Effectively interpret the Code in a field situation.
- iii. From another perspective, it provided an opportunity for the wardens to fully understand the essential technical capability (based on the FFCOHP) and have it effectively translated at ground level. This not only ensures they become good harvesting operators but where common sense and good judgment could prevail when instant decisions on the ground are necessary.

Resource staff

The training included Forest Officer Meli Vauvau who assumed the role of 'course coordinator' and assisted by Forester Academic as Course facilitator.

Course Participants

A total of 27 Forest Wardens attended the training courses. Participant list is shown on Appendix 1.



- i. The high presence of the wardens was indeed encouraging and reflects the passion by them to learn and improve work standards.

Clips captured from the Code Awareness Training



Group Exercise during Training at the Conference Room



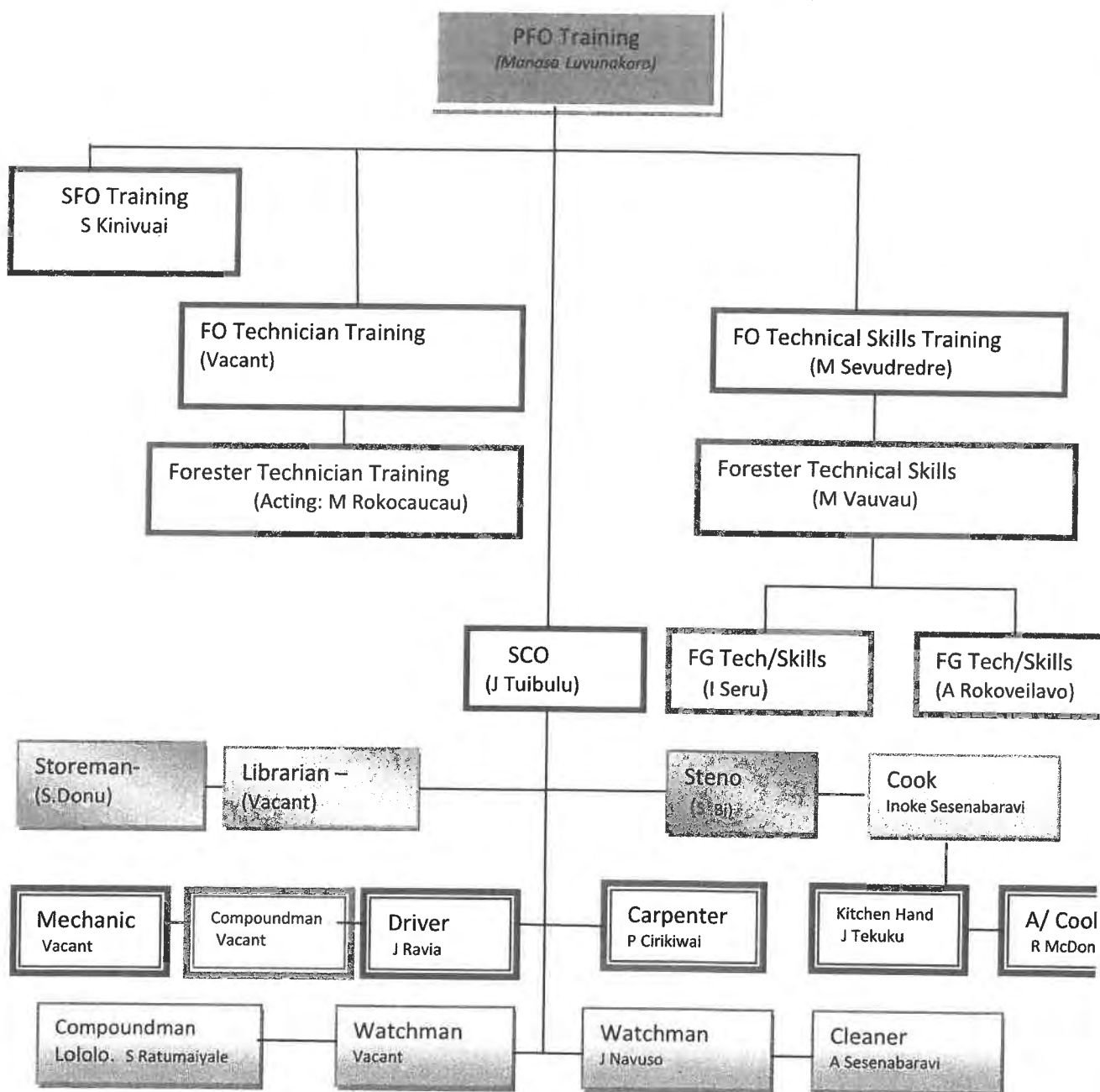
Course participants during the Code awareness field training at the mahogany woodlot site at Logani, Vugalei.



Wardens during the Code Awareness Training at the FTC Conference room



Appendix 2: FTC Organization Structure.





Appendix 3: 2016/2017 Leave Summary

	Names	Annual Leave	Sick Leave	Sick Without Sick Sheet	Bereavement Leave	Long Service Leave
ESTABLISHED STAFF						
1	Manasa Luvunakoro	21(37)	15	6	3	
2	Malakai Sevudredre	21(36 1/2)	15	6	3	
4	Meli Naqarakoso	7	15	6	2	18.5 Consec Days
5	Mereoni Rokocaucau	5	42			
6	Arieta Rokoveilavo	UNAVAILABLE				
7	Isimeli Seru	14	40			30 Vacation Leave
8	Josaia R Tuibulu	18(14 1/2)	15	6	3	
9	Sireli Donu	18(9 1/2)	12(35 1/2HRS)	6	3	
11	Sheirina Bi	18(5)	15	6	3	



WAGE EARNERS

		Annual Leave	Sick Leave	Sick Without Sick Sheet	Bereavement Leave	Long Service Leave
1	Joseva Ravia	3	12	3		
3	Saimoni Ratumaiyale	12	12	3		
4	Peceli Cirikiwai	12	10	3		
6	Joseva Tekuku	7	NIL	NIL		
7	Inoke Sesenabaravi	10(1)	8	1 1/2		
8	Jone Navuso	12	12	3		
9	Reavi Macdonald	12	12	3		
10	Alisi Cagimatailalai	12	9	3		
		10	10(10)	3		
		10(9)	10	3		



Appendix 4: 2016 Assets

Buildings								
Station	Quarters	Dormitory	Kitchen/Dining Hall	Office	Class room	Ablution Block	Fuel Shed	Garage
Colo-i-Suva	11	2	1	1	3	-	1	1
Lololo	4	1	1	-	-	-	1	1
Total	15	3	2	2	4	1	2	2
Machine & Vehicles								
Skidder	Ford Tractor	Mini Bus Mazda (10 seater)	Toyota Hilux Dual Cab 4WD	Mazda Dual Cabs 4WD	Mini Bus 30 seater	Chainsaws	Mini Bus Toyota (12 seater)	
1	1	1	1	2	1	10	1	

Summary of Vehicle Returns.

Registration Number	Mileage @ end of July 2017 (km)	Fuel And lubricants (Litres)	Cost of fuel and Lubricants	Cost of Maintenance & Repairs	Remarks
GP 786	69669	2725.40	\$4,360.64		New/Leased
GN 229	299169	1542.58	2468.13	\$1,920.09	Minor repair
GN 230	294496	292.81	468.49		Running condition
GP 044	180548	2373.33	3797.33	\$1,114.42	Minor repair
GP 868	6395	1793.44	2869.51		Garaged for repair
GQ 056	51076	3054.66	4887.45		New/Leased



Appendix 5: Staff Training

NO	STAFF	TRAINING /WORKSHOP	DATES
1	Manasa Luvunakoro	Module Descriptor Development- FTC Capacity Building Study Tour-Queensland APFNet TIF Training –Malaysia 2016 Seminar for senior public servants from Fiji Third Meeting of the APFNet Council MSG-PITAP Studies Workshop SDP Workshop –Holiday Inn FHEC Competency Based Assessor Training IAC (Industrial Advisory Committee) meeting APFNet project workshops National Youth Policy Multi-Sector Coordination Committee	August –September 2016 October-2016 December 2016 25th AUG – 14th SEPT 2016 10th October 2016 July 2017 July 2017 27 June- 28 June 2017 21 st July 2017 July 2017 July 2017
2	Malakai Sevudredre	Curriculum Development - FTC Module Descriptor Development- FTC Capacity Building Study Tour-Queensland Discipline Guideline (Investigation Workshop) Professional Supervisor Workshop	August –September 2016 August –September 2016 October 2016 May 2017 April 2017 31/05 – 01/06/'17
3	Moape Lotawa	Fijian Civil Service Disiplinary Curriculum Development - FTC Module Descriptor Development- FTC Capacity Building Study Tour-Queensland	June 2017 August –September 2016 August –September 2016 October 2016
4	Mereoni Bativesi	Curriculum Development - FTC Module Descriptor Development- FTC Capacity Building Study Tour-Queensland APFNet TIF Training –Malaysia SDP Workshop –Holiday Inn	August –September 2016 August –September 2016 October-2016 December 2016 July 2017
5	Meli Vauvau	OMRS Professional Supervisor FHEC Competency Based Assessor Training Investigation Officer's Training Research Seminar on "Bat pollination of Dillenia biflora	April 2017 31st May – 1st June 2017 27/06- 28/06/17 28/06 – 30/06/17 July 2017
6	Arieta Nailagovesi	Curriculum Development - FTC Module Descriptor Development- FTC Capacity Building Study Tour-Queensland OHS Module III, IV	August –September 2016 August –September 2016 October 2016 December 2016
7	Isimeli Seru	Curriculum Development - FTC Module Descriptor Development- FTC Capacity Building Study Tour-Queensland SDP Workshop –Holiday Inn	August –September 2016 August –September 2016 October 2016 July 2017



Date	Community	Province	Female	Male	Total
5th – 9th Sept , 2016	Muanaira	Rewa	6	19	25
21st November – 25th November, 2016	Bua	Bua	24	15	39
20th February - 22nd February 2017	Sote	Tailevu	10	32	42
20th -24th March, 2017	Narocake	Rewa	13	27	40
30th May – 3rd June 2017	Natokalau	Cicia	9	27	36
Total			62	120	182

3.0 Forest Harvesting Training

The Fiji Forest Policy highlighted the need for comprehensive skills training for the forest industry to be able to improve knowledge on forest utilization, the Fiji Forest Harvesting Code of Practice and environment protection practices, log conversion, timber preservation, quality assurance and marketing. Through this policy, the Forestry Training Centre continue to implement the actions under the Fiji Forest Harvesting Code of Practice which requires "All supervisors, chainsaw and machinery operators working in forestry operations to be trained and certified in the principles of the code as part of their mandatory licensing process.

A total of 14 training activities were completed by the section which includes skills tests, First Aid, ID Card processing and Supervision Training.

471 individuals were trained and tested during the period. Details are in the table below.

TRAINING	VENUE	DATE	PARTICIPANTS
Supervision Module 2	Bua FPL, Northern Division	17th - 21st October	20
ID Card Processing	Bua FPL, Northern Division	17th - 21st October	197
Supervision Module 2	Lautoka	21st - 25th November	25
ID Card Processing	Lautoka	21st - 25th November	51
Supervision Module 2	VTB, Labasa	05th - 09th December	11
Supervision Module 3	VTB, Labasa	31 Jan - 02 Feb	11
Code Awareness	Bua FPL, Northern Division	02 - 04 Feb	20



Supervision Module 3	Lautoka	20 - 22 Feb	25
Code Awareness	West	23 Feb - 03 March	6 Contractors
Map Reading	FTC	27 - 31 March	16
Supervision Module 3	North	17 - 28 April	27 contractors
Supervision Module 1	Bua/Macuata Forest Base	01/05 - 05/05	29
Skills Test	North	08/05 - 10/05	37
First Aid Training	Bua/Macuata Forest Base	11/05 - 12/05	29
		TOTAL	471



Fig 11: Forestry staff on Training



4.0 Forest Warden Training

One of the key implementing priorities in the National Forest Policy is the need to “build capacity and to support forest owners in sustainably managing their forests” through the appointment of community based “forest wardens to assist in the policing of the forest laws”. The Forest Policy also mandated the Ministry to train resource owners on the environmental requirements of the Fiji Forest Harvesting Code of Practice and any other environmental protection requirements stipulated in the management and harvesting licenses and, where possible, engaged these trained resource owners to monitor environmental standards. With this policy as a guide, the Ministry through the Forestry Training Centre started the consultation and curriculum development in 2015 followed by recruitment and selection. The formal training for Forest Warden started in 2016.



Fig 12: Forest Warden Training at FTC

There are total of 31 participants recruited in the initial Forest Warden recruitment process. The total of 17 recruited from the Central Eastern Division, 13 from the Western Division and 7 from the Northern Division. The selection of the current wardens is based on the following guidelines:

- Hot spot forest harvesting regions including maritime islands
- Geographical location to the established forestry offices
- Communities around Conservation and Protection forest areas
- Fire risk and degraded forest areas

The Forest Warden program achieved 100% with a completion of Module 1 – Module 4 in all the three divisions of the country. The way forward of the Forest Warden program is the completion of employment conditions, demarcated of boundaries, reporting and payment system **appointment** and graduation.

Forest Warden will:

- assist in the policing of all forest laws
- monitor forest harvesting operations in remote areas including maritime island
- provide awareness on forest harvesting activities
- provide awareness on environmental services of forest to communities
- report on illegal forest related activities to Forestry staff
- provide awareness on forest conservation activities.

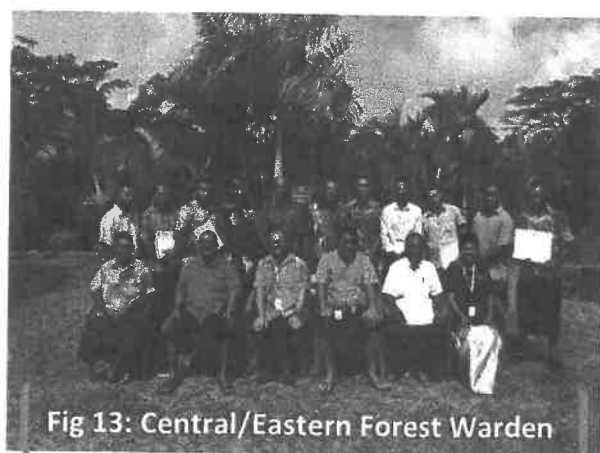


Fig 13: Central/Eastern Forest Warden



5.0 Forest Technician Program

A total of 22 students enrolled in the 2016-2017 forest technician programs. The recruitment process were very fair with a 50% male and 50% female promoting gender balance as stipulated in the 2013 Constitution.

The program successfully completed 9 units that are with combination of the theory, field practical, field execution, reports and examination.

There are total 9 units covered of 34 weeks training run in a Semester based. In August – December 2016 the section completed the delivery of 4 units with the final examination of the 4 units. In January – June 2017 the section completed the delivery of 5 units with the final examination. The technician trainees also completed 2 field attachments in the industries and within the divisions of the Ministry of Forests.

The students also attended 2 weeks field attachment during the year with Field Attachment 1 conducted in October 2016 and Field Attachment 2 conducted in May 2017.

The technician students also sat for their final examination for the 4 units covered in Semester 1 and the 5 units covered in Semester 2.

The passing rate for the 9 units is 75%; a maximum passing marks of 97% and minimum passing marks of 50%. The passing rate of Semester 1 is 77% and Semester 2 is 72% a slight decrease in performance by 5%. Two students who were dismissed earlier in the year are back after discussion with the Minister for Forest and Permanent Secretary for Fisheries and Forests.

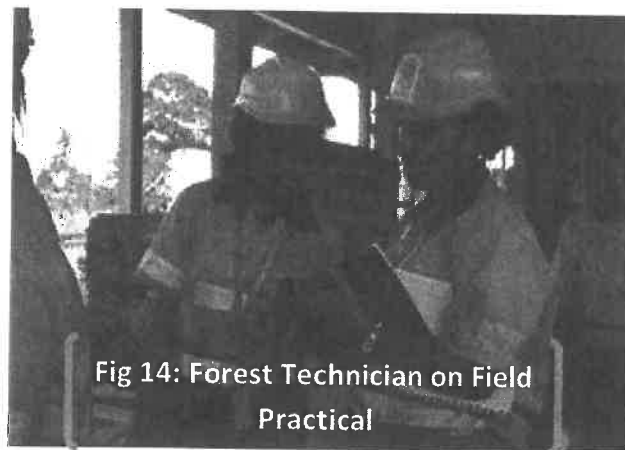


Fig 14: Forest Technician on Field Practical

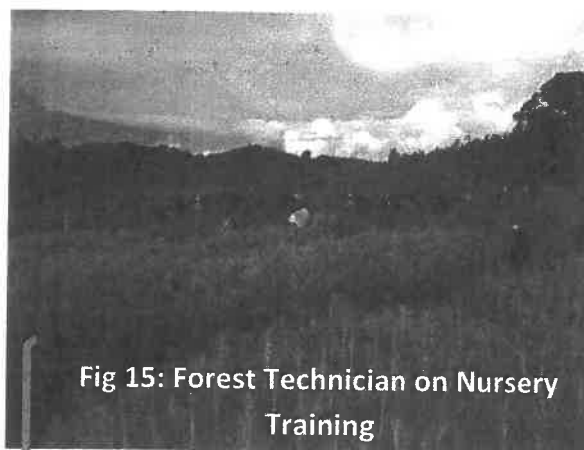


Fig 15: Forest Technician on Nursery Training



G. Workshops/Meetings



The Conference room has been constantly booked for conference and meetings not only by the Ministry of Fisheries and Forest but by other government organisation and NGOs. Improvements have been carried out in the year through the provision of table covers and installation of air conditions. A new overhead projectors was also fitted and Wi-Fi available during workshops and meetings. It is expected that booking for the use of the conference room will continue to increase in the future

H. Acknowledgement

Fig 16&17: Conference room

The Training and Education Division wishes to extend its appreciation to the staff of the 2 Centers, senior management and Divisional Heads in supporting the divisions' activities in 2016.



We are also appreciative of the assistance of other stakeholders who have supported us in the accomplishment our core roles in the year

We are looking forward to an enrich accomplishment in the new financial year and would again seek out analogous backing in the execution of the divisions role.



Appendix 1: Expenditure Statement

FORESTRY TRAINING CENTRE				
Expenditure Statement as at 31st July, 2017				
Allocation	Expenditure Description	Provision \$	Total Expenditure \$	Balance \$
13220391071020101	Wages	\$53,791.00	\$73,893.00	-\$20,102.00
13220391071020602	Casuals	\$35,000.00	\$16,126.00	\$18,874.00
13220391071030101	Travel	\$3,728.00	\$3,723.20	\$4.80
13220391071030301	Subsistence	\$8,000.00	\$7,284.65	\$715.35
13220391071030401	Telecom	\$ 8,000.00	\$7,160.98	\$839.02
13220391071040401	Fuel & Oil	\$19,000.00	\$18,914.10	\$85.90
13220391071040351	Equip/Vehicle/Maint.	\$30,000.00	\$29,969.36	\$30.64
13220391071040203	Offices Suppliers	\$6,000.00	\$5,659.71	\$340.29
13220391071059101	Stores & Ration	\$92,400.00	\$91,874.96	\$525.04
13220391071059999	Stocks & Goods	\$51,000.00	\$60,851.00	-\$9,851.00
13220391071050499	Training	\$235,000.00	\$234,997.03	\$2.97
Total		\$541,919.00	\$550,453.99	-\$8,534.99



D. Assets

1.0 Assets - Building

FTC continues to maintain a total of 15 staff quarters. 11 are in Coloisuva while 4 are still in Lololo. 1 dormitory are still in Lololo as well as the kitchen, storeroom and garage.

One of the 4 staff quarters in Lololo was destroyed by uncontrolled fire during the year.



Fig 2&3: The quarters that was burnt down in Lololo

The remaining quarters in Lololo are in a poor conditions and needs to be repaired or dismantled. One of the plans is for the Extension Division to occupy two of the staff quarters while the rest has to be relocated to Coloisuva. Water is the major problems in Lololo and work was carried out by the Lololo Forest Based staff to restore water to the remaining buildings. Construction of walkway between the lecture rooms and the kitchen as well as the Dorm is in progress and should be completed in the new financial year. Extension to the dining hall has been completed to complement extra staff during workshops and meetings.



Fig 4&5: The Dining Hall extension and walkway



2.0 Assets - Vehicle

With the exception of the 30 seater bus (GP 868) the rest of the vehicles are in running conditions and GP 786 is expected to be returned in December 2017.

	Vehicle Registration Number	Vehicle type	Year of purchase	Mileage
1	GQ 056	Mini bus/LEASED	2015	51076
2	GP 868	Bus/LEASED	2015	Garaged in Lautoka
3	GP 044	4 WD TWIN CAB	2010	180548
4	GP 786	4 WD TWIN CAB/LEASED	2014	69669
5	GN 229	4 WD TWIN CAB	2004	299169
6	GN 230	Mini bus	2004	294496
7	GK 593	Skidder	1995	Machine hours
8	GK 730	Tractor	2000	Machine hours

Further details are in the attachments. (Appendix 4)



E. Capacity Building

The Training and Education technical staffs are indebted to the FAO under the GEF-FPAM project for the opportunity to visit Australia in October 2016. The Capacity Building tour was effective in:

- a) Building the knowledge base over a short period of time: exposure to technologies, systems and processes that work in relation to the in-country situation;
- b) Providing an insight into the working relationships, partnerships and cooperation between the state (government), communities, non-government organisation towards a common goal that is bigger than their individual goals;
- c) Establishing networks for future support, funding assistance and exchange through short-term internship;
- d) Understanding of the different "scales of economy" and better/wider perspective of similar in-country situations

Similar tours are encouraged/recommended for landowning communities, middle and senior management of government for the reasons mentioned. Landowning communities will benefit greatly through their engagement and exchange with counterparts, and having a different perspective to their roles and responsibilities as resource owners and their contribution to the national goals.



Fig 6&7: The staff on field visit

Local and overseas training were also part of the capacity building for the staff. Details are in Appendix 6



F. Training

1.0 Technical Skills Training

Request for Chainsaw Training continued to be received at the Forestry Training Centre and this is expected as a result of TC Winston where communities are focusing on rehabilitating their own dwellings before government assistance comes in. The forest harvesting monitoring of operations has also resulted in the request from logging companies for the training of their chainsaw operators

Table 1: 2016 Training summaries

	DATE	TRAINING TYPE	VENUE	Number
1	08/08/2016 – 19/08/2016	HTMB	FTC	25
2	22/08/2016 – 26/08/2016	Maintenance & Cross Cutting	Navuniivi, Navitilevu, Ra	31
3	19/09/2016 – 30/09/2016	HTMB	Rewasau, Nabobuco, Naitasiri	32
4	01/11/2016 – 04/11/2016	HTMB	Mataso, Nakorotubu, Ra	11
5	21/11/2016 – 02/12/2016	HTMB	Lawai, Nokonoko, Nadroga	25
6	09/12/2016 – 21/12/2016	HTMB	Nalotu, Yawe, Kadavu	15
7	16/01/2017 – 27/01/2017	HTMB	Namara, Sanima, Kadavu	25
8	31/01/2017 – 02/02/2017	Maintenance & Cross Cutting	Valebasoga Tropikboard, Labasa, Macuata	12
9	20/02/2017 – 03/03/2017	HTMB	Tropik Wood Industries Limited	29
10	13/03/2017 – 24/03/2017	HTMB	Buca, Natewa, Cakaudrove	31
11	27/03/2017 – 07/04/2017	HTMB	Bagata, Wailevu, Cakaudrove	49
12	10/04/2017 – 21/04/2017	HTMB	Tacilevu, Naweni, Cakaudrove	30
13	08/05/2017 – 19/05/2017	HTMB	Nabavatu, Dreketi,	35



			Macuata	
14	12/06/2017 – 16/06/2017	Cross Cutting	FSC, Lautoka	10
15	10/07/17 – 19/07/2017	HTMB	Narikoso, Kadavu	21

A total of 381 personnel have been trained between August and July from 15 different stakeholders.



Fig 8: Certificate presentation after chainsaw training



2.0 SFM Training and Awareness

Sustainable Forest Management and Awareness Training continue to be conducted with the understanding that well managed forests with appropriate conservation measures can deliver society's needs in a sustainable way. The Sustainable Forest Management and Awareness Training Programme surpass its target in the year as documented in the 2016-2017 Business Plan by 66%. Out of the 3 planned training, the Division completed 5 trainings for the year. The assistance provided through the collaborations with ITTO helps the division in achieving its desired output. The objectives and learning outcomes of the programme this year has been focusing on the following 4 areas:

- Provide a broad appreciation of the extent and character of the global forest estate, as well as drivers of, and responses to, changes in forest cover.
- Explain how forests function and interact with wider ecosystem processes to provide environmental services.
- Illuminate the different ways in which people and societies relate to and utilise forest resources: livelihoods, lifestyles, and legal and policy frameworks.
- Examine the process of forest management planning, implementation and monitoring.

Details of training are in the table below.



Fig 9&10: The resource owners in a training session



Appendix 6: 2015 Condensed Forest Technician Intakes

	NAMES	DIVISION
1	Ashwant Ram	MCS - Labasa
2	Bola Vatuwaliwali	MCS - Labasa
3	Cavu Sukulu	Management Services
4	Emitai Rakuro	Extension - North
5	Eroni Kuruvawalu	MCS - Vunimaqo
6	Ilimo Tuilevu	Management Services
7	Joeli Ledua	Management Services
8	Joseva Duikoro	Management Services
9	Lusiana Tuvou	Silviculture Research
10	Mosimani Navucu	Timber Utilisation Research
11	Naivolioni Nabou	Fiji Pine Trust
12	Peni Senitiki	Silviculture Research
13	Sairusi Kunadei	Fiji Hardwood Corporation
14	Savenaca Muca	Forestry Training Centre
15	Senivalati Vido	Parks and Reserves
16	Vetaia Tuisasake	Extension - Coloisuva



FORESTRY TRAINING AND EDUCATION DIVISION



2016 August to 2017 July ANNUAL REPORT

**FORESTRY TRAINING CENTRE, COLO I SUVA
P O BOX 1175, NABUA
PH: 3322380 Fax: 3324480**



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A. Executive Summary

The Training and Education Division 2016-2017 Business Plan continued to be guided by the Fiji Forest Policy 2007 and similar to the previous years, it sets the directions for all our training and awareness activities. Under Section 5.5.7 of the Forest Policy, Forestry Training and Education outline the following: ***The Forestry Department will have training courses conducted for forestry personnel and resource owners in all aspects of sustainable forest management, timber utilization principles and practices, log scaling, and protection of environmental values***

The Divisions continues to actively contribute to 4 of the major outputs of the Forestry Department in the Annual Business Plan for 2016-2017. This includes;

- Output 1: Portfolio Leadership, Policy Advise and Secretariat Support
- Output 3: Education and Training – Forestry Development
- Output 4: Public Awareness and Promotion – SFM
- Output 11: Promote Gender Equality and Women in Development – Forestry

Our contribution to Output 1 is the provision of weekly brief to Head Quarters as well as participations in Public and Industry Consultations. Our responsibility also includes the filling of Annual Performance Assessment for our staffs.

Output 3 on Education and Training is the divisions' main contribution to the Ministry ABP and has 6 major objectives. The promotion of SFM practices through capacity building and awareness programmes continued to be held through request by communities. The provision of quality training programmes for capacity building for communities and industry is the major activity of the divisions and request continues to be received by the divisions from the industry and communities.

The Public Awareness and Promotions under Output 4 also continues to be promoted through our participations in Government Awareness programmes including exhibition, and road shows. Our achievements are highlighted also through print media and talkback shows

We continue to Promote Gender Equity and Women in Development in our trainings during the year and have seen an increase in the participation of women in most of our trainings. While Forestry is a male dominated environment, it is interesting to see that women have displayed interest in taking on some of the tasks that are usually performed by man.

The Centre has completed all paper work and submitted documents to the Fiji High Education Commission to allow the school to be fully registered by the Fiji High Education Commission. The processes are underway for the accreditation of all training programmes with the assistance of the FAO.



B. Introduction

The Forestry Training Centre and the Timber Industry Training Centre activities for the year continue to focus on communities that were affected by TC Winston. This is a continuous responsibility after TC Winston and request continues to be received at both centers for the training of communities on Chainsaw and Portable Milling operations.

The Training of our Forest Technician also continued throughout the year and is expected to be completed in December 2017.

The Biodiversity Conservation and Protected Area Management training program has been developed by staff of the Forestry Training Centre (FTC), with support from the Food and Agriculture Organization (FAO) of the United Nations. This is conceivably the greatest achievements by the divisions this year with the official launch of the programme by the Honorable Minister for Forests in Coloisuva

The Technical Training through the delivery of CBT Programme for the industry and communities has been on comprehensive reel during the year and as highlighted above, we are receiving request for training virtually every month and we are expecting this trend to continue due to the need by communities to provide timber for building purposes.



Fig 1: The staff during the Australia tour

The Forest Warden Training is in progress throughout the year and is expected to be completed in the new financial year. 31 individuals continue to go through this module based training and we are encouraged by their commitments to participate in the training.

Wood Processing Training for the industry and communities are continuing with request still pending from interested communities and individuals. The focus has been on areas affected by TC Winston and also in the Maritime island especially Kadavu with the recent opening of the first portable treatment plant Vunisea. It is expected that training will continue in the island for communities that have not undergone this training in the new financial year.



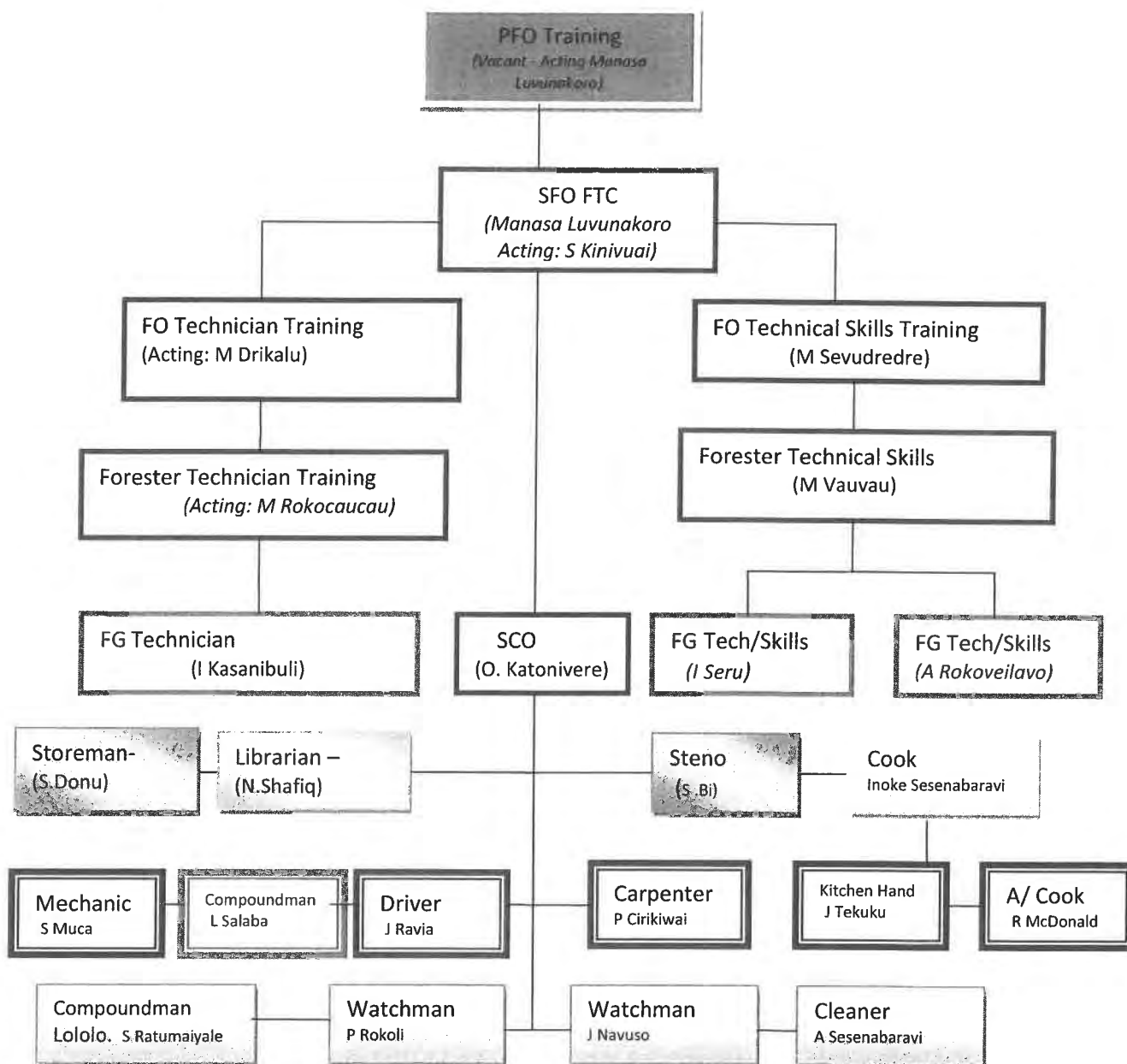
C. FTC Staff

FTC has a total staff of 24 in the beginning of the year but the staff strength has moved downwards due to resignation, promotions and retirement. We however welcomed the appointment of Mr Josaia R Tuibulu as Clerical Officer replacing Mr Osea Katonivere who has retired. The recruitment process is continuing for the Librarian and Government Wage Earners. Current organisation structures are in Appendix 2

	NAME	SECTION	POSITION	CURRENT STATUS
1	Manasa Luvunakoro	Administration	PFO Training	FTC
2	Malakai Sevudredre	Technical Skills	Forestry Officer	FTC
3	Moape Drikalu	Academic	Forester	Promoted and transferred to Labasa
4	Meli Vauvau	Harvesting	Forester	FTC
5	Mereoni Rokocaucau	Academic	A/Forester	FTC
6	Arieta Nailagovesi	Technical Skills	Forest Guard	FTC
7	Isimeli Seru	Harvesting	Forest Guard	FTC
8	Savenaca Muca	Technical Skills	Chainsaw Mechanic	Resigned and moved to NZ
9	Osea Katonivere	Administration	Clerical Officer	Retired
10	Sireli Donu	Administration	Storeman	FTC
11	Noor Shafiq	Administration	Librarian	Retired
12	Sheirina Bi	Administration	Stenographer/Typist	FTC
13	Alisi Sesenabaravi	Administration	Cleaner	FTC
14	Joseva Ravia	Administration	Driver	FTC
15	Inoke Sesenabaravi	Administration	Cook	FTC
16	Reavi McDonald	Administration	A/Cook	FTC
17	Joseva Tekuku	Administration	Kitchen Hand	FTC
18	Lorosio Salaba	Administration	Compoundman	Resigned
19	Peceli Cirikiwai	Administration	Carpenter	FTC
20	Jone Navuso	Administration	Watchman	FTC
21	Petero Rokoli	Administration	Watchman	Resigned and moved to NZ
22	Saimoni Ratumaiyale	Administration	Compoundman (Lololo)	FTC
23	Kitone Mocolutu	Technical	Mechanic (Heavy)	FTC
24	Samisoni Qaqa	Technical	Skidder Operator	FTC



Appendix 1: FTC Organisation Structure.





Appendix 2: Expenditure

FORESTRY TRAINING CENTRE				
Expenditure Statement as at 31st December, 2015				
Allocation	Expenditure Description	Provision \$	Total Expenditure \$	Balance \$
130A0391071020101	Wages	53,791.00	53,503.40	287.60
130A0391071020602	Casuals	35,000.00	34,947.23	52.77
130A0391071030101	Travel	7,456.00	7,439.41	16.59
130A0391071030301	Subsistence	7,000.00	6,897.52	102.98
130A0391071030401	Telecom	4,669.00	4,652.09	16.91
130A0391071040401	Fuel & Oil	11,045.00	11,022.13	22.87
130A0391071040351	Equip/Vehicle/Maint.	26,500.00	26,427.69	72.31
130A0391071040203	Offices Suppliers	6,000.00	5,981.41	18.59
130A0391071059101	Stores & Ration	69,300.00	69,221.71	78.29
130A0391071059999	Stocks & Goods	6,000.00	5,988.20	11.80
130A0391071050499	Training	200,000.00	199,862.51	137.49
Total		426,761.40	425,943.30	817.70



Appendix 3: 2015 Leave Summary

	Names	Annual Leave	Sick Leave	Sick Without Sick Sheet	Bereavmnt Leave	Long Service Leave
ESTABLISHED STAFF						
1	Manasa Luvunakoro	20	4	0	0	-
2	Malakai Sevudredre	69	3	3	0	-
3	Moape Drikalu	21	4	2	0	-
4	Meli Naqarakoso	21	2	1	0	-
5	Mereoni Rokocaucau	8	6	-	0	-
6	Arieta Rokoveilavo	26	11	-	0	-
7	Isimeli Seru	6	5	-	0	-
8	Inosi Ksanibuli	8	15	-	0	-
9	Osea Katonivere	12	5	4	0	14
10	Sireli Donu	28	4	4	0	-
11	Noor Shafiq	18	7	0	1	-
12	Sheirina Bi	7	6	3	0	-



WAGE EARNERS

		Annual Leave	Sick Leave	Sick Without Sick Sheet	Bereavmnt Leave	Long Service Leave
1	Joseva Ravia	-	4	-	0	18
2	Savenaca Muca	-	6	-	1	-
3	Saimoni Ratumaiyale	-	5	-	0	-
4	Peceli Cirikiwai	-	0	-	0	-
5	Lorosio Salaba		7	-	1	-
6	Joseva Tekuku		11	-	1	-
7	Inoke Sesenabaravi		3	-	0	-
8	Jone Navuso		4	-	1	-
9	Reavi Macdonald		6	-	0	-
10	Alisi Cagimatailalai		6	-	2	-
11	Petero Rokoli		0	-	0	-



Appendix 4: 2015 Assets

Buildings								
Station	Quarters	Dormitory	Kitchen/Dining Hall	Office	Classroom	Ablution Block	Fuel Shed	Garage
Colo-i-Suva	11	2	1	1	3	-	1	1
Lololo	4	1	1	-	-	-	1	1
<i>Total</i>	15	3	2	2	4	1	2	2
Machine & Vehicles								
Skidder	Ford Tractor	Mazda Mini Bus (10 seater)	Toyota Hilux Dual Cab 4WD	Mazda Dual Cabs 4WD	Mini Bus 30 seater	Chainsaws		
1	1	1	1	2	1	6		

Summary of Vehicle Returns

Registration Number	Mileage @ end of last Quarter (km)	Fuel (Litres)	Lubricants (Litres)	Cost of fuel	Cost of Maintenance & Repairs	Remarks
GP 786	23,500	830	31	1,002.57	10,093.00	New
GN 229	270,443	3,205	58	3,876.01	11,290.30	Minor repair
GN 230	282,008	1,542	36	1,863.98	9,751.97	Running condition
GP 044	137,044	2,955	41	3,752.89	19,322.39	Minor repair
GP 868	1,570	604	27	729.55	180.00	New



Appendix 5: 2015 Forest Warden Intakes

2015 Forest Warden Intakes		
Western Division		
Nos	Names	Province
1	Semisi Ketewai	Ba
2	Livai Cavanasiga	Ba
3	Naelesoni Navuase	Ra
4	Samuela Sautulevu	Ra
5	Etonia Kelei	Ra
6	Richard Nacanieli	Ra
7	Watisoni Ruicava	Ra
8	Josateki Tuilawaki	Ra
9	Maika Nabale	Ra
10	Seveci Taka	Nadroga/Navosa
11	Sakenasa Hara	Nadroga/Navosa
12	Rt Meli Nakasavu	Nadroga/Navosa
Central Eastern Division		
Nos	Names	Province
1	Esala Raqalu	Kadavu
2	Maleli Rakula	Tailevu
3	Bola Rawaico	Lau
4	Alipate Mocevakaca	Lau
5	Vili Valevatu	Lau
6	Timoci T	Lomaiviti
7	Aisea Tokaiqali	Kadavu
8	Waisea Kania	Naitasiri
9	Mikaele Ikanidevo	Vunimaqo
10	Laisiasa Nalao	Serua
11	Viliame Namino	Serua
12	Rt Mosese Volavola	Rewa
13	Sakiusa Mata	Rewa
14	Aseri Delaikubuna	Naitasiri
15	Epitani Tabua	Tailevu
16	Peniona Neivua	Namosi



Northern Division

Nos	Names	Province
1	Sairusi Salaimacuata	Macuata
2	Mosese Ratagau	Bua
3	Maciu Mailekutu	Bua
4	Apisai Rokolui	Macuata
5	Jale Rogoyawa	Cakaudrove
6	Atunaisa Relenadawai	Cakaudrove



4.0 Training of Trainers for Forestry Training Centre staff

Training of trainers is a form of training imparted to an individual with a view to preparing him/her for his/her future role as a trainer. This is a process which aims to develop his/her capabilities and capacities of imparting training to others as a skilled professional. Besides, TOT also aims to help organisations to build their own cadre of trainers. Thus TOT has a dual role to play: the individual growth and the organisational growth.

Training is a process of acquiring knowledge, skills, and attitude that are needed to fill the gap between what people want to do, and what they are able to do now. In order to teach a trainer how to train well, learning by doing approach is best.

. In view of the above, all current Training staffs have completed the Training of Trainers programme conducted by the Fiji National University through the National Training and Productivity Centre in Nasese. 6 of the staff will have to go through an accreditation process in order to be registered as a Training Officer

Under the **Fiji Forest Policy Section 5.4.4 Employment and Training** outlines the following:

- **The FD will provide training for the forestry industry and allied workers at FTC and TITC or through recognized training providers.**
- **FD will accredit courses and programmes delivered through external training providers and, in particular, TPAF to ensure the retrieval of training levy paid by the sector to TPAF**

Besides their basic responsibility as instructors, the FTC and TITC trainers have to understand the training needs of the target groups to be trained, design the training programme, conduct the training programme, make arrangements for organising the same and evaluate the effect of the training. In addition to these responsibilities as trainers they have also to play such important roles as facilitators and 'friend, philosopher and guide' of the communities they teach. Their most important role, however, shall always be that of change agent.

Our current staff TOT training status is as follows:

Status		Number of staff
1	Officers Trained(TOT Module 1-4)	8
3	Officers Trained and Registered	2



5.0 Condensed Technician Training

The Fiji Forest Policy section 5.4.4 Employment and Training confirms the commitment that the ministry has directed which is to **promote the development and maintenance of a skilled work force through provision of appropriate training at all levels, particularly at technical, supervisory, and skilled artisan levels.**

To fulfil these requirements, the Forestry Training Centre conducted a 6 months condensed training for Forestry Staff who have been serving the ministry for a number of years. The training is focused on all aspects of sustainable forest management, timber utilization principles and practices, log scaling, and protection of environmental values as outlined under Section 5.5.7 of the Forest Policy.

A total of 16 staff were selected from the 3 divisions and started at FTC on the first week of February. Ten units were selected as being suitable for this training in view of the experience that the 16 staffs have had during their years of work for the ministry. All 16 completed the training and graduated on the last week of September. Names of students is in Appendix 6

Fig 11: Condensed students after the official opening

Fig 12: Award winners





6.0 Forest Warden Training

The Department is mandated under the Forest Policy Section 7.3.3: Shift to landowner Involvement and community based sustainable forest management to: **Appoint Forest Wardens to assist in the policing of Forest Laws.**

Section 5.2.9 Environmental standards in forest management and environmental impact assessments further mention the following: **The FD will train resource owners on the environmental requirements of the FFHCOP and any other environmental protection requirements stipulated in the management and harvesting licences and, where possible, engage these trained resource owners to monitor environmental standards.**

The focus for FTC in 2015 is to provide training to resource owners in implementing and monitoring forest operations.

The Forest Warden Technician Program provides fundamental training on knowledge, skills and attitudes relevant for efficient and effective supervision, by balancing basic forest knowledge with the ability to analyze and solve practical problems as well as creating an awareness of the continuing need to acquire new forest related knowledge and to develop new skills while working independently and responsibly.

Its main objectives are Landowners Empowerment. This is to encourage landowners and forest resource users to adopt sustainable forest management principles for the management of natural forest and plantations as well as monitoring adherence to these principles. Specific attention is given to the rehabilitation of degraded forest areas, regeneration of logged over forests and sustained productivity of plantations and their expansions where ecologically unobjectionable and economically viable.

The programme was structured into four modules with relevant field exposure to develop necessary technical skills.

A total of 34 participants were recruited from around the country through the normal recruitment process.

Module 1 commences in the last quarter of the year in Viti Levu and Vanua Levu while the rest of the modules will be completed in 2016. The course consists of 30 credits and applied in accordance to the FTC Constitution. The course spans four modules with contact hours at 80 hrs and self-direct of 220 hours.

The list of participants is attached in Appendix 5



H. Other Major Achievements

Recognition and Registration of FTC and TITC by the Fiji High Education Commission

The 2 training centers have been granted recognition status by the Fiji High Education Commission in 2014. This is in line with the Higher Education Regulations 2009. Efforts are now underway for the full registration in 2016

6 Staff have completed Training of Trainers in 2015 and preparations are in line for the registration of these staff with the National Training and Productivity Centre at FNU in 2016

Review of FTC Curriculum

A consultant provided by the FAO started towards the end of 2014 and the whole of 2015 to review the curriculum at FTC with a view towards including the Biodiversity Conservation and Protected Area Management in the new curriculum. A James Cook University staff was also involved in the review of the curriculum. The review was funded by the FAO through the GEF project. This review will be completed in 2016

Recognition of Achievements

The Training and Education Divisions have been recognised through the nominations of Acting Principal Forestry Officer Training as the Forestry Manager of the Year for 2015. The Training Division which is part of the Coloisuva Division was awarded with the Service Excellence Commitment Award by the Ministry in the 2015 Awards night held in Lautoka.



I. Acknowledgement

The Training and Education Division wishes to extend its appreciation to the staff of the 2 Centres, senior management and Divisional Heads of the 2 Departments in supporting the divisions' activities in 2015.

We are also grateful for the assistance of other stakeholders who have assisted us in performing our core roles in the year

We are looking forward to an improve performance in 2016 and would again seek similar support in the execution of the divisions role.





ATTACHMENTS

1.0 Forestry Training and Education Division 2015

Types of Training	DIVISION		
	CENTRAL/EASTERN Number of people	WESTERN	NORTHERN
Chainsaw	179	14	193
Machine	3	4	3
SFM	74	40	-
Supervisor	27	74	93
Harvesting Planning	6	-	24
PHI			
FFHCOP	72		152
First Aid	12	50	27
Number of certified operators	36	24	36



2.0 Forest Harvesting 2015 Achievements

#	Date	Activity	No# participants	No# contractors
1	2/2 – 6/2	Machine Training	10	
2	16/2 – 4/3	Supervisor Module 3	41	
3	17/3 – 1/5	FFHCOP Awareness	224	8
4	7/5 – 15/5	First Aid	89	
5	11/5 – 29/5	Supervisor Module 1	59	
6	13/4 – 23/4	Skills Test	51	
7	29/6 – 10/7	Harvest Planning	30	
8	27/7- -14/8	Supervisor Module 2	52	
9	15/8 – 1/10	Supervisor Module 3	54	
			610	



3.0 Technical Skills Training Achievements 2015

No.	Date	Activity	Location	Division	No of PP
1	2/2/ - 13/2	HTMB	Udu, Naitasiri	Central	31
2	16/10 – 26/2	FTMB	Coloisuva	Central	14
3	2/3 – 13/3	HTMB	Moturiki	Eastern	23
4	23/3 – 2/4	HTMB	Lautoka	Western	14
5	7/4 – 17/4	HTMB	Coloisuva	Central	16
6	20/4 – 24/4	C/Mechanic	Coloisuva	Central	16
7	4/5 – 15/5	HTMB	Naqarawai	Central	26
8	1/6 – 12/6	FTMB	Coloisuva(FEA)	Central	20
9	29/6 – 10/7	HTMB	Nakadrudru, Bua	North	60
10	6/7 – 17/7	HTMB	Nasarowaqa, Bua	North	48
11	13/7 – 24/7	HTMB	Dreketi, Macuata	North	49
12	20/7 – 31/7	HTMB	Naravuka, Seaqaqa	North	37
13	27/7 – 7/7	FTMB	Labasa(FEA)	North	15
14	22/10 – 29/10	HTMB	Nakida	Central	18
15	16/11 – 27/11	HTMB	Matuku Lau	Eastern	15
TOTAL					386

HONOURABLE MINISTER FOR FORESTRY

CONSULTATION ON
"PLANTING OF 30 MILLION TREES IN 15 YEARS" INITIATIVE
& RDF PROGRAM AT THE TIKINA O VITOGO, LAUTOKA AND
TIKINA O NAILAGA, BA



From 3rd to 6th March, 2020



THEME:

"30 Million
Trees in 15
Years."

OBJECTIVES:

- To create an awareness on "**Planting 30 Million Trees in 15 Years Initiative Program**".
- To protect and conserve existing forests.
- To restore degraded and deforested land and its impact on the current daily needs as well as its sustainability for future generation.
- To protect the traditional forest cover and the biodiversity that it shelters.
- To eradicate poverty and to contribute to Fiji's economic growth.
- To provide consultation on the existing legislation for **Forest Protection** and how protection applies to individuals together with its implication.

TEAM CONSISTS OF:

	SUVA TEAM	
1.	Hon. Osea Naiqamu	Minister for Forestry
2.	Ms. Melaia Katonivualiku	PRO
3.	Ms. Jotivini Leleca	Senior Secretary – Logistics
4.	Mr. Paiata Rarasea	Driver to Minister
5.	Mr. Elia Naketeca	Back-up Driver to Minister



WESTERN DIVISION TEAM:

1.	Mr. Rafaele Raboiliku	Director Operation Western
2.	Mr. Leveni Duvuduvukula	FG Extension
3.	Mr. Uwate Vuravakavonu	Timber Inspector [West]
4.	Ms. Mere Diligodrau	FG Lautoka
5.	Mr. Lekima Bose	FG Extension
6.	Mr. Mosese Vakatale	Messenger/Cleaner
7.	Mr. Lawrence Chand	Driver West
8.	Mr. Marika Tuiwainunu	Driver
9.	Mr. Jonasa Igacake	Nursery Attendant
10.	Ms. Mereisi Vatu	CO West

List of government agencies & NGOs':

List of personnel that accompanied the Hon. Minister for Forestry for the duration of his tour from 3rd to 6th March, 2020 at the Tikina o Vitogo, Lautoka and Tikina o Nailaga, Ba

	Names	Ministry/Other Agencies	Phone. No.
1.	Mereani Gonedua	Ministry of Information	9904092
2.	Josefa Tigarea	Ministry of Information	
3.	Ravuama Nagatalevu	Provincial Administrator Ba	9937462
4.	Matereti Varea Driti Waqa	Ministry of Rural & Maritime	9937522
5.	Seruvi Cawi	Fiji Pine Trust	7088707
6.	Apenisa Vakarewa	Fiji Pine Trust	7088102
7.	Alivereti Dumaru	Fiji Pine Trust	9418061
8.	Rupeni Waqavono	Ministry of Information	9904404
9.	Siteri Sauvakacolo	Fiji Times	7754058
TOTAL		9 Officials	

PROGRAM FOR THE WEEK:

	Day/Date	Time	Venue/Village
1.	Tuesday, 3rd March, 2020	3.00pm	Team Suva left for Lautoka
2.	Wednesday, 4th March, 2020	10.00am	Vitogo Village
		2.00pm	Naviago Village
3.	Thursday, 5th March, 2020	10.00am	Vakabuli Village
		2.00pm	Namoli Village
4.	Friday, 6th March, 2020	10.00am	Matawalu Village
		2.00pm	Nailaga Village
		5.30pm	Debriefing at the Village
5.	Saturday, 7th March, 2020	8.00am	Team left for Suva

EXPENSES:

	Suva Team	Western Team	Total
1. Number of Staff	5	10	15
2. Accommodation	\$2,860.00	Included with Suva Budget	\$2,860.00
3. Meal Allowances	\$2,400.00	Included with Suva Budget	\$2,400.00
4. Sevusevu	\$1,910.00		\$1,910.00
5. Bale of Cloth	-	-	-
6. Seedlings	-	-	-
7. Refreshments	\$1,500.00	-	\$1,500.00
Total	\$8,035.00	\$320.00	\$8,670.00



SUMMARY OF INDIGENOUS TREES PLANTED AT THE TIKINA O VITOGO, LAUTOKA & TIKINA O NAILAGA, BA CONSULTATION

	Village Name/ Province	Yasi	Tavola	Vesi	Dilo	Total
1.	Vitogo Village	120	15	10	14	159
2.	Naviago Village	120	15	10	14	159
3.	Vakabuli Village	100		15	08	123
4.	Namoli Village	100		15	08	123
5.	Matawalu Village	60		07	02	69
6.	Nailaga Village	60		07	02	69
7.	Koroqaqa Village	60		07	02	69
8.	Nasolo Village	60		07	02	69
	Total	680	30	78	52	840

SUMMARY OF FRUIT TREES PLANTED AT THE TIKINA O VITOGO, LAUTOKA & TIKINA O NAILAGA, BA - CONSULTATION

	Village Name/ Province	Ivi	Mango	Cocoa	Guava	Coconut	Tamarind	Total
1.	Vitogo Village	10	20	06	05			41
2.	Naviago Village	10	20	06	05			41
3.	Vakabuli Village	06	23			10	05	44
4.	Namoli Village	06	23					29
5.	Matawalu Village	03	12					15
6.	Nailaga Village	03	12					15
7.	Koroqaqa Village	03	12					15
8.	Nasolo Village	03	12					15
	TOTAL	44	134	12	10	10	05	215

**TOTAL SUMMARY OF TREES PLANTED AT THE
TIKINA O VITOGA, LAUTOKA & TIKINA O NAILAGA, BA CONSULTATION**

	Villages	No. of Indigenous Trees	No. of Fruit Trees	Total
1.	Vitogo Village	159	41	200
2.	Naviago Village	159	41	200
3.	Vakabuli Village	123	44	167
4.	Namoli Village	123	29	152
5.	Matawalu Village	69	15	84
6.	Nailaga Village	69	15	84
7.	Koroqaqa Village	69	15	84
8.	Nasolo Village	69	15	84
	Total	840	215	1,055

NUMBER OF PARTICIPANTS plus village info

	Name of Villages	Turaga ni Koro's Name	Phone Contact	Number of Yavusa / Village	Number of Mataqali	Number of Tokatoka	Number of Family	Number of Participants
1.	Vitogo Village	Napolioni Waga	9649326	2	6	12	82+	54
2.	Naviago Village	Rusiate Deitu	9813362 [Vasemaca Nainai]	2	5	8	64	45
3.	Vakabuli Village	Savenaca Ratu	9640337	1	6	9	105	59
4.	Namoli Village	Isikeli Nava	9906900	1	11	21	184+	46
5.	Matawalu Village	Jone Rasi	9406069	1	4	4	160	60
6.	Nailaga Village	Osea Vuniivi	2088325	8	-	-	-	60
7.	Koroqaqa Village	Meli Naivalu	8702582	1	4	6	38	60
8.	Nasolo Village	Mosese Volavola	9074993	1	1	3	105	60
	TOTAL							444

COMMITMENT & REQUESTS

	Village	Requests	Date Committed	Proposed Planting Area	Number of Seedlings Required	Remarks
1.	Vitogo Village	<ul style="list-style-type: none"> Village Reforestation Plan Training Sandalwood Training Nursery Training TAK has requested if the Ministry could provide and also plant the boundaries of the village, school compound, Methodist church compound and Catholic Church compound Issue was raised by a villager in regards to the illegal logging at the water catchment at Saru, Nanioli and Nagaga [Abaca] 	<ul style="list-style-type: none"> All training to be carried out on 24/03/2020 and 31/03/2020 as approved by the Hon. Minister 	<ul style="list-style-type: none"> Proposal will be done during the training. 	<ul style="list-style-type: none"> Yet to be confirmed. 	<ul style="list-style-type: none"> Lekima Bose, Saiasi Waqa & Mereisi Vatu to conduct training. Illegal logging issue – Fiji Pine Trust has informed the forum that there was no illegal logging as Fiji Pine is currently undergoing the clearing and replanting exercise on those areas. DOW & Team West - trees such as vesi, mahogany, pine and fruit trees to be planted along the village boundaries.
2.	Naviago Village	<ul style="list-style-type: none"> Village Reforestation Plan Training Sandalwood Training Nursery Training. Women's Group has requested for a Nursery – Hon. Minister has also approved this request. 	<ul style="list-style-type: none"> All training to be carried out on 14/04/2020 and 15/04/2020 as approved by the Hon. Minister 	<ul style="list-style-type: none"> Proposal will be done during the training. 	<ul style="list-style-type: none"> Yet to be confirmed. 	<ul style="list-style-type: none"> Lekima Bose, Saiasi Waqa & Mereisi Vatu to conduct training

COMMITMENT & REQUESTS

	Village	Requests	Dates Committed	Proposed Planting Area	Number of Seedlings Required	Remarks
3.	Vakabuli Village	<ul style="list-style-type: none"> Village Reforestation Plan Training Sandalwood Training Nursery Training Chainsaw Operator Training 	<ul style="list-style-type: none"> All training to be conducted from 16/04/2020 and 17/07/2020 Chainsaw Operator Training to be carried out on 1st and 2nd week of June, 2020 Both trainings was approved by the Hon. Minister 	<ul style="list-style-type: none"> Proposal will be done during the training. 	<ul style="list-style-type: none"> Yet to be confirmed. 	<ul style="list-style-type: none"> Lekima Bose, Saiasi Waqa & Mereisi Vatu to conduct training. DOT – For your necessary action please.
4.	Nanioli Village	<ul style="list-style-type: none"> Village Reforestation Plan Training Sandalwood Training Nursery Training Mangrove planting exercise to be planted beside their seawall Jone Baravilala has requested for some yasi seedlings. Joseva Toroca – 9020186 – has requested for an update from the Ministry of Lands and ITLTB – Status on the release of a portion of land from ITLTB to the Mataqali 	<ul style="list-style-type: none"> All training to be carried out on 02/04/2020 and 03/04/2020 as approved by the Hon. Minister Mangrove planning exercise to be carried out on Friday, 27/03/2020 DOW to supply the seedlings as approved by the Hon. Minister 	<ul style="list-style-type: none"> Proposal will be done during the training. 	<ul style="list-style-type: none"> Yet to be confirmed. 	<ul style="list-style-type: none"> Lekima Bose, Saiasi Waqa & Mereisi Vatu to conduct training DOW & Team West – please attend to the mangrove tree planting exercise. Referred to the Ministry of Lands and ITLTB. Roko Vakacegu, Vilame Seuseu – for your necessary action and advise as well please.

COMMITMENT & REQUESTS

	Village	Requests	Dates Committed	Proposed Planting Area	Number of Seedlings Required	Remarks
5.	Matawalu Village	<ul style="list-style-type: none"> Village Reforestation Plan Training Sandalwood Training Nursery Training 	<ul style="list-style-type: none"> All training to be conducted from 07/04/2020 and 08/04/2020 	<ul style="list-style-type: none"> Proposal will be done during the training. 	<ul style="list-style-type: none"> Yet to be confirmed. 	<ul style="list-style-type: none"> Lekima Bose, Salasi Waga & Mereisi Vatu to conduct training.
6.	Nailaga Village	<ul style="list-style-type: none"> Village Reforestation Plan Training Sandalwood Training Nursery Training Still awaiting for their clear fell licence to clear some raintrees – land to be used for planting sugarcane Mataqali Korokoro, Tikina o Nailaga – a survey to be carried out in regards to their land boundaries 	<ul style="list-style-type: none"> All training to be carried out on 04/05/2020 and 05/05/2020 as approved by the Hon. Minister 	<ul style="list-style-type: none"> Proposal will be done during the training. 	<ul style="list-style-type: none"> Yet to be confirmed. 	<ul style="list-style-type: none"> Lekima Bose, Salasi Waga & Mereisi Vatu to conduct training Referred to the Ministry of Lands and ITLTB. Roko Vakacegu, Viliame Seuseu & Team Pine Trust – for your necessary action and advise as per our discussion please.

COMMITMENT & REQUESTS

	Village	Requests	Dates Committed	Proposed Planting Area	Number of Seedlings Required	Remarks
7.	Koroqaga Village	<ul style="list-style-type: none"> Village Reforestation Plan Training Sandalwood Training Nursery Training Fiji Pine lease land – the villagers wishes to claim their land back from Fiji Pine Ltd 	<ul style="list-style-type: none"> All training to be conducted from 28/04/2020 and 29/04/2020 	<ul style="list-style-type: none"> Proposal will be done during the training. 	<ul style="list-style-type: none"> Yet to be confirmed. 	<ul style="list-style-type: none"> Lekima Bose, Salasi Waga & Mereisi Vatu to conduct training. DOW & Roko Vakacegu Viliame Seuseu – to follow up with Mr. Asesela Wata of Fiji Pine Ltd in regards to their request
8.	Nasolo Village	<ul style="list-style-type: none"> Village Reforestation Plan Training Sandalwood Training Nursery Training Chainsaw Operator Training 	<ul style="list-style-type: none"> All training to be carried out on 30/04/2020 and 01/05/2020 Chainsaw Operator Training – 3rd and 4th week of June, 2020 Both training was approved by the Hon. Minister 	<ul style="list-style-type: none"> Proposal will be done during the training. 	<ul style="list-style-type: none"> Yet to be confirmed. 	<ul style="list-style-type: none"> Lekima Bose, Salasi Waga & Mereisi Vatu to conduct training

WAY FORWARD

- **Team West has requested for seedlings to be purchased from outside instead of purchasing it from the vendors during the next Hon. Minister's consultation at the west. Reason – seedlings are smaller in size and its survival rate will be low. Seedlings are less than 30cm in height.**
- **Yasi seedlings to purchased from outside as well – seedlings at the Lautoka Office Nursery are still smaller in size.**
- **Suggesting if the Ministry could have a Land Owner's Unit – to administer all the land issues.**
- The Hon. Minister has requested if his team could wear proper gear such as safety boots, reflector, raincoats whilst on tour.
- The team has been participating in the line cutting, hole digging for plants to be planted and also do planting during their tour.
- Mangrove seeds collecting is also part of their job whilst on tour.
- The team has been preparing and serving refreshments to all villagers that attended the consultation – more women were able to be present and listen during the consultation.

VINAKA SAKA!!!



SUBJECT	MINISTRY'S PREVIOUS RESPONSE (2019) – AS PER OAG REPORT	OAG ASSESSMENT OF STATUS	2020 PAC QUESTIONS	2020 RESPONSES FROM THE MINISTRY
19. Forest Administration	Awareness were conducted through commissioners offices integrated approaches as well as Through several inter ministry committees.	Partially Implemented. Forest Legislation Awareness is conducted through collaborative awareness programs of the Ministry as well as Commissioner's Office awareness tours with other government ministries.	enactment of the revised Forest Act and why is the delay? How does the Ministry capture data or information regarding the road shows and actions taken to address concerns raised from these road shows?	Information is captured in Consultation/Feedback Reports and issues raised or requests made are implemented at respective Divisions. The Ministry is taking a renewed approach in ensuring that issues and concerns raised are addressed. <i>Evidence: Minister's latest consultation report.</i>
20. Seeking International Assistance	A review has been conducted by World Bank and the report is with the Attorney General's office and World Bank office.	Partially Implemented. A review has been conducted by World Bank and the report is with the Attorney General's office and World Bank office and is yet to be received by the MoF.	The current engagement with the World Bank includes Reducing Emission from Deforestation and Forest Degradation (REDD+) and is focused on reforestation and Desertification of Talasiga areas and preservation of established natural	The Ministry has presented the Emission Reduction Program Document (ERPD) to the World Bank in June 2019, which been accepted and expected to begin after the Emission Reduction Program Agreement (ERPA) signing in April 2020. A copy of the ERPD can be accessed through the FCPF website (www.forestcarbonpartnership.org) The ER-Program has identified 20 districts in which carbon enhancement activities will be implemented, which includes reforestation, afforestation, biodiversity conservation and climate smart agriculture.



FIJI REDD+ STEERING COMMITTEE

QUARTERLY MEETING

Date: Tuesday 19 November, 2019

Time: 9.30am – 4.00pm

Venue: Tanoa Plaza, Suva

REDD+
FIJI

Quest

	ITEM	LEAD PERSON
09.00	1. Welcome & Opening Remarks	EDR&D, Mr Semi Dranibaka
09.20	2. Emissions Reduction Program (ERP) Update	REDD+ Unit
10.00	Tea break	
10.20	3. Presentation on Benefit Sharing Plan Discussions	Conservation International
12.00	4. CSO Update i) Presentation from Grace Trifam Ministry ii) Discussion of 2019-2020 Work Plan iii) Bangkok regional IP and CSO Meetings	CSO Platform
13.00	Lunch	
14.00	5. Fiji National REDD+ Programme Updates • MRV/FRL/SESA/Drivers Studies • Procurement • Finance • Communications • Emalu REDD+ Pilot Site	REDD+ Unit
15.00	6. Other Matters	
15.30	7. Acknowledgements and Closing	EDR&D
16.00	Afternoon tea	



MEETING of the FIJI REDD+ STEERING COMMITTEE

MINUTES

Date: Friday, 01 June 2018

Time: 9.30am – 4.00pm

Venue: Holiday Inn, Suva

Present:

1. Ms. Semi Dranibaka
2. Ms. Akosita Lewai
3. Mr. Tevita Kunadei
4. Mr. Apisai Rinamalo
5. Mr. Jale Tauraga
6. Ms. Sovaia Lewanavanua
7. Mr. Waisale Ramoce
8. Ms. Reijeli Taylor
9. Ms. Emma Christopher
10. Ms. Susana Tuiseese
11. Mr. Marika Tuiwawa
12. Ms. Nunia Moko
13. Ms. Finau Tabakaucoro
14. Mr. Ilaitia Leitabu
15. Mr. Maika Tabukovu
16. Ms. Bernadette Masianini
17. Mr. Daniel Pluyge
18. Ms. Loraini Kasainaseva
19. Ms. Mereseini Seniloli
20. Ms. Corey Nelson
21. Mr. Ulai Baya
22. Ms. Safaira Tagivuni
23. Mr. Sele Tagivuni
24. Mr. Seveci Taka
25. Ms. Paulini Tuiteci
26. Mr. Peni Maisiri
27. Ms. Waita Curuvale
28. Mr. Narendra Chand
29. Mr. Viliame Tupua

- Ministry of Forests (Chief Forestry Development Officer)
Ministry of Forests (Principal Forestry Officer)
Ministry of Forests (Forestry Officer)
Ministry of Forests (Acting Divisional Forestry Officer - Central Eastern)
Ministry of Forests (Principal Forestry Officer)
Ministry of Mineral Resource (Scientific Officer)
Ministry of i-Taukei Affairs (Manager Policy)
Manager Strategic Planning Policy Research Division
LLEE (Project Manager)
Conservation International (Director)
IAS/USP (Curator)
NFMV (Director)
SSVM/CSO Platform (Chairman)
Emalu Trust (Landowner Rep)
FNU (Lecturer)
SPC/GIZ (Communication Officer)
SPC/GIZ (Technical Advisor)
SPC/GIZ
Integra (Consultant)
Integra (Consultant)
Integra (Consultant)
NBSAP – Grace Trifam Ministry (Director)
NBSAP – Grace Trifam (Advisor)
Navosa (Forest Warden)
Nadroga/Navosa (Reforest Program)
Drawa Block Forest Community Cooperative (Chairman)
Drawa Block Forest Community Cooperative
Ministry of Forests (REDD+ Technical Advisor)
Ministry of Forests (MRV Specialist)

30. Ms. Reama Naco
31. Mr. Leone Batigai
32. Mr. Josaia Nayacakalou
33. Ms. Marama Tuivuna
34. Ms. Vilisi Naivalulevu

Ministry of Forests (Communication Knowledge Management Specialist)
 Ministry of Forests (Senior Accounts Officer)
 Ministry of Forests (Executive Officer)
 Ministry of Forests (REDD+ Project Officer)
 SPC/GIZ (REDD+ Project Officer)

Apologies:

1. Ms. Loata Vakacegu
2. Mr. Solomon Nagaunavou
3. Mr. Maika Daveta

Ministry of Rural and Maritime (Deputy Secretary)
 Ministry of Agriculture (Senior)
 FAO (AAD National Project Coordinator)

Abbreviations & Acronyms		
AAD	Action Against Desertification	MOE
CSO	Civil Society Organisation	NFMS
DoDD	Drivers of Deforestation & Forest Degradation	NF-MV
FAO	Food and Agriculture Organisation	NGO
FCPF	Forest Carbon Partnership Facility	REDD+
FGRM	Feedback and Grievance Redress Mechanism	RL
FNU	Fiji National University	RSC
FPIC	Free Prior and Informed Consent	SESA
FRL	Forest Reference Level	SPC
FSA	Fiji Sawmillers Association	SSVM
GIZ	German International Development Cooperation	TEBTEBBA
LLEE	Live & Learn Environmental Education	TLTB
MRV	Measuring Reporting and Verification	TOT
MOA	Ministry of Agriculture	USP
		Ministry of Economy
		National Forest Monitoring System
		Nature Fiji-Mareqeti Viti
		Non-Government Organisation
		Reducing Emissions from Deforestation & Forest Degradation + Conservation, Sustainable Management
		Reference Level
		REDD+ Steering Committee
		Strategic Environmental and Social Assessment
		Secretariat of the Pacific Community
		Sqosoqo Vaka Marama
		Indigenous Peoples' International Centre for Policy Research and Education
		i-Taukei Lands Trust Board
		Training of Trainers
		University of the South Pacific

ITEM	Discussions	Actions to be taken/ When	Responsible Agency
1. Welcome	Mr. Dranibaka (Chief Forestry Development Officer), chair of the Fiji REDD+ Steering Committee meeting on behalf of the Minister, Acting Permanent Secretary and Conservator Forests welcomed the RSC members present from different Ministries, statutory bodies, CSO platform and academia. A special welcome to the representative from the two pilot sites Drawa and Emalu. He thanked the members for availing themselves to attend the meeting. The chair acknowledged the presence of consultants involved in the REDD+ consultancies. Mr. Kunadei opened the meeting with a word of prayer.		

ITEM	Discussions	Actions to be taken/ When	Responsible Agency
2. Confirmation of Agenda	The agenda was confirmed by Ms. Tabakaucoro and seconded by Mr. Tuiwawa.		

<p>3. Confirmation of minutes from last meeting</p>	<p>The minutes of the last meeting was confirmed by the members and moved by Mr. Leitabu and seconded by Ms. Moko.</p> <p>The Secretariat informed the committee on the following action item;</p> <p>3.1. The external party has reviewed the SESA deliverables and a decision has been made to terminate the SESA consultant. At the moment legal advice on the termination of the contract and draft termination letter has been submitted to Solicitor General's office for their comments. Once a response is received the SESA contract will be terminated. The termination letter will be send early next week and USP is given 30 days to respond once letter is issued to them. It was discussed that all avenues was suggested to USP on improvement of deliverables however they didn't comply. It is the RSC member's role to avoid similar situation in the future as the USP consultant team compromise of good local consultants. The way forward of the SESA consultant is World Bank will hire the consultant to complete the SESA consultancy. The timeline to complete the SESA consultancy is from 6 to 10 months</p> <p>3.1. External party reviewed the SESA deliverable and agreed to terminate the SESA consultant. Way forward is for World Bank will hire a consultant to complete the SESA consultancy within 6-10 months.</p> <p>3.2. Action item for 3.2, 3.4 will be updated in the meeting as it is included in the agenda</p> <p>3.3. The TOT cost estimate has been approved by World Bank will start with process of hiring the consultant.</p> <p>3.4. The co-ordinator post has gone through the interview and candidate chosen was a retiree and based on that the Minister disregard the candidate chosen. The post was then re-advertised and will undergo interview process.</p> <p>3.4. Successful co-ordinator position was disregarded by the Minister</p> <p>3.5 The REDD+ unit met with Director Budget of MOE and transfer of World Bank funds from MOE to Ministry of Forestry has been fast tracked. The last two funds requested were released after 5 days of submission. This is an improvement and the unit has also been working closely with MOE in other financial matters. 35.32</p> <p>3.6. Improvement in the financial stats of fund transfer</p> <p>3.7. The SESA consultancy team submitted a revised Deliverable 5 SESA Report however it was still unsatisfactory. At the moment an external party is reviewing all the SESA deliverables and revised deliverables.</p> <p>3.7. SESA Report submitted by consultancy was unsatisfactory</p> <p>3.8. Update will be provided in the meeting as it is included in the agenda</p> <p>3.9. Accuracy assessment consultant hired awaiting activity data to start consultancy work. Mock session on TOT & discussions on Gender and FPIC guidelines was carried out on 11-12 December, 2017.</p> <p>3.10. CSO National platform and Awareness on REDD+ scheduled for 05-09 February, 2018 will be carried out on 05-07 March, 2018</p>	<p>3.1. SESA consultancy termination letter to be submitted to USP</p> <p>3.3. Hiring of TOT consultant to carry out REDD+ TOT</p> <p>3.4. Re-advertisement of co-ordinator position</p> <p>3.5. Fast tracking of transfer from World Bank account to the lead agency, Ministry of Forests</p> <p>3.7. External party to review all SESA deliverables and revised deliverables</p>	<p>Ministry of Forests, REDD+ Secretariat, CSO Platform</p>
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	<p>3.11. The CSO Training of Trainers in March has not been carried out as this will be carried out once TOT consultant is hired</p> <p>3.11. TOT for CSO cancelled</p> <p>3.12 The ANSAB proposal submitted by SSVm was rejected as they are already involved in the TEBTEBBA project. FCPF suggested a NGO to submit their ANSAB proposal.</p> <p>3.12 ANSAB Proposal submitted by SSVm was rejected</p>	<p>3.8. TOT consultant to be hired</p> <p>3.9. FCPF suggests a NGO to submit the ANSAB proposal</p>	
<p>4. Update on UNFCCC meeting in Bonn</p>	<p>4.1. Highlights youth forum, talanoa dialogue, Koronivia joint work program, Fiji presented on the REDD+ implementation highlight SID actually facing challenges on implementing REDD+ assist in the rule book</p> <p>Article 6 big guns focus 6.2 keep small group like Fiji supporting Coalition of Forest, trying to protect 6.2 for CRFN group however development countries move to 6.4. 3 conclusion not yet gone into the draft Sept consensus of the parties. Hope to keep it at REDD+ 6.2 and not 6.4.</p> <p>4.2. Forestry day organise big show promote forest COP 24 Forestry Day.</p> <p>4.2. Organizing of a Forestry Day</p>	<p>4.1. Follow up on the updates being highlighted and as presented by Fiji</p> <p>4.2. A unique Forestry Day to promote and showcase forestry under COP 24</p>	<p>Ministry of Forests</p> <p>Ministry of Economy, Ministry of Forests, REDD+ Unit</p>
<p>5. Fiji National REDD+ Programme Updates</p>	<p>5.1. Mr. Chand presented on the Fiji National REDD+ programme updates. They included the following: Fiji's Emission Reduction Program (ERP) – Document to be compiled in the near future</p> <p>Organisation and consultation coordinator, DWG June 2018, Gender and FPIC guideline, Apply for TOT position, Prepare REDD+ strategy</p> <p>Emission from deforestation, taking long time to remove errors, FRL NFMS – fully equipped MSD, error, capacity building where available, DoDD, requested to be given 6months extension until Sept 2018 due to data from Min. of Forestry FGRM due 18 June, 2018</p> <p>SESA, MRV due July 2018</p> <p>Plan for next quarters;</p> <p>Financial utilisation 30% 3.8 35% 3.8m, add 2m</p> <p>Issues & Challenges</p> <p>How much paid 341,000 FJD, slightly overpaid SESA</p> <p>Processes way forward MoF A/PS not knowledge of REDD+, 5k below, Cf 10k, PAO 30k, spend to get more</p> <p>➤ FRL net removal, inaccurate data look into getting more accurate data in the future, use on a</p>	<p>5.1. Clarification of all errors involved, proper documentation needed, upgrading of the capacity and capability of people involved and have a drawn timeline for all activities included therein</p> <p>Issues & Challenges</p> <p>All payments to be rectified</p> <p>➤ Data analysis to be improved</p> <p>➤ Tools used for assessment to be reviewed</p> <p>➤ Leading agency – Ministry of Forestry to detain all relevant data whilst other agencies to only</p>	<p>CSO platform, SSVm</p>

	<p>daily basis, policies in place to get historical and accurate data.</p> <ul style="list-style-type: none">➤ Tools being used for the analysis is it remote sensing tools change the tools use something else➤ ERPD to submit by end of this year summarise those study into it➤ Data forestry data Fiji's data should be held with the Ministry of Forests, regional like SOPAC should assist. Make concrete step on the same <p>Learn from our challenge and improve on it. Take concern on our repetition, WB particular on the TOR. FD got a lot of learning</p> <ul style="list-style-type: none">➤ All challenges noted to be regarded as a learning process which we can improve our procedures and processes from		<p>support</p> <ul style="list-style-type: none">➤ Take challenges as lessons/guidelines	
6. Validation of Feedback Grievance Redress Mechanism (FGRM) report	<p>6.1. Ms. Corey introduced Integra and the team as well as the purpose of the consultancy. She provided an overview of the consultancy and updated on how they reviewed and assessed existing FGRM systems in Fiji, conducted an institutional assessment together with a potential risk analysis. She highlighted that from their findings there were 3 existing, potential REDD+ grievance mechanisms in Fiji. Critical takeaways included legislation, benefit sharing and a national land use plan for Fiji.</p> <p>6.2. The Parties go with TLTB to solve this issue. Some of the system to integrate to make our process better. There needs to be a REDD+ legislation and national land use plan, tribunal. Environment are working on the land environment tribunal. Why should there be a REDD+ legislation. It was discussed that because this was a new product that is to sell carbon. The value of carbon stands at 90% native land will be REDD+. Not only forest but other land uses like agriculture where money is coming in. Carbon ownership (who owns the carbon) and the risks that will be involved.</p> <p>6.3. Members were requested to read the FGRM reports before the validation on June 15th.</p>	<p>6.1. Rectification of all findings being highlighted</p> <p>6.2. Improvement in the processes and procedures that involves REDD+ and any risks involved</p> <p>6.2. Validation of FGRM to be held on June 15th</p>	<ul style="list-style-type: none">➤ Identification of barriers to potential strategies of DoDD➤ All dates to be revised for all activity data and deliverables	
7. Update on Analysis of drivers of deforestation and forest degradation (DoDD) consultancy	<p>7.1. Mr. Baya as part of the DoDD consultancy team presented the update on the consultancy. He highlighted some of the findings to address and barriers to potential strategies of the drivers of deforestation and degradation.</p> <p>He requested endorsement of revised dates as current due date is 06 March, 2018. They are proposing should the activity data be available on 02 March, 2018 the revised dates would be 30 March, 2018 for Deliverable 3, 09 April, 2018 for Deliverable 4 and 09 May, 2018 for Deliverable 5. The training and workshop to be carried out on 20-22 March, 2018.</p> <p>The request for the revised dates was considered. It was reiterated the need to finalise the activity data as it affects deliverables of the consultancies.</p>			

8. Live & Learn Drawa Update	<p>8.1. Ms Christopher provided a project overview, project timeline (methodology and validation), March TLTB signed, biodiversity survey paroxtonomy update, perfarm, 14 March, 2018 signed lease, fulfil RSC conditional endorsement, consultation took 2017 – 2018 April 23 – May 02, 2018, carbon sales conditional endorsement Oct, 2018, sold 6,350 carbon credit, remaining credits 49,566 credits, Nakau Methodology Framework</p> <p>8.2. Seeking partnership and funding support from RSC workshop design monitoring system Drawa monitoring plan, conditional endorsement of the Drawa project#4 policy position paper – hybrid approach to REDD+</p> <p>8.3. Chair thanked extensive presentation. LLEE/Drawa project. Suggest RSC to run a workshop to develop this framework, national one, Drawa</p> <p>PAC also looking at this, good to do it now, cost of the venue</p> <p>Focus group to discuss the paper – Governance WG review paper; present to RSC</p>	<p>8.1. Follow up on the activities undertaken at Drawa and provide an update on the Nakau Methodology Framework8.2. Provide an update on the activities requested for the Drawa project and the hybrid approach8.3. A national workshop to be conducted by RSC for the Drawa project</p>	REDD+ Unit, Ministry of Forests
9. CSO Platform	<p>June – July discussion</p> <p>9.1. Ms Moko gave an update of the CSO Platform activities. She said that some activities from Q2 were going to be shifted to Q3. CSO was going to target communities, the number, criteria and TOR for sub-committees</p> <p><u>ANSAB REDD+ Project</u></p> <p>Ms Tagivuni provided the objective and context of the Grace Trifam Ministry. She presented on the past & recently about the ANSAB sub project on REDD+ which was \$US 75,000.</p> <p>She said they were to undertake REDD+ awareness to communities and ensure participation of women, men and youth. The Work plan is to commence mid-June. There was special acknowledgement to Ministry of Forests Forestry, REDD+ Secretariat, CSO members, ANSAB and the World Bank.</p>	<p>9.1. Follow up on the activities to be undertaken</p> <p>REDD+ awareness to be conducted by mid- June</p>	
10. Update on REDD+ Emalu pilot site	<p>10.1. Ms. Tuivuna presented on the pilot site activities carried out in February, 2018. This includes monitoring and maintenance of pilot site activities, 05 – 09 February. Emalu landowner consultation, 13 February and Grassland reforestation report back to Mataqali Dranu and Lewenikaya, 14 – 15 February. Presentation of the pilot sites activities was done by Ms Tuivuna, specifically on monitoring and maintenance, consultation and grassland reforestation</p> <p>10.2. The Emalu landowner consultation, Mataqali members were updated with the lease process and lease financial arrangement. Mataqali members were updated on the lease process and lease</p>	<p>10.1. Monitoring and evaluation of the pilot sites to be strengthened</p> <p>10.2. Lease process and financial arrangement to be confirmed</p>	

	financial arrangement during the Emalu landowner consultation	10.3. Activities to be undertaken at pilot sites to be reviewed before commencing	
10.3.	<p>The next steps include fencing of reforestation site in March, cementing and extension of tree nursery, village to take over agroforestry demo plot maintenance, construction of bee keeping shed for harvesting, next planting phase in April and more participation from landowners.</p> <p>It was discussed that the next phase of planting to be carried out near the Emalu forest and to re-consider fencing as most reforestation site are not fenced. There is assurance to achieve the reforestation of the grassland area in the next 2 years.</p> <p>Drawa LO rep. Thanked government for their support and especially USP's Marika and his team</p> <p>Emalu Thank secretariat for the support, field work =, GIZ for the support. FGRM</p> <p>SPC/GIZ Master students finalised their master thesis have submitted it now developed final will be shared with FD then to RSC. Mangrove not part of REDD+ as it is under Dof Lands 95% prolong work with SPC and LLEE with new finance agreement Solomon Is first inception meeting RSC, success of Fiji helping them 2 retirements GIZ Wulf Kilman final farewell tomorrow evening, S.Bulai 3rd week of June retirement</p> <p>Ridge to Reef (R2R) with Department of Environment for a special meeting to talk on the REDD+ component</p> <p>Mangrove when and where, blue carbon workshop by CI because of data deficiency</p> <p>Considered in the future new pilot site, include a coastal system include mangrove, beach</p> <p>World Bank mission, RSC special meeting</p>	<p>Documentation of all activities, processes, agreements to be proficient to avoid data deficiency</p> <p>A proposed new pilot site for REDD+ to encompass the ridge to reef concept</p>	
11. Members' updates			
12. Other Matters		To be confirmed	REDD+ Secretariat
13. Next meeting	Tentative for October 2018	Date is to be confirmed	REDD+ Secretariat
14. Prayer & close	The chair on behalf of the Minister, Acting Permanent Secretary and Conservator Forests thanked members for their contribution in endorsing and implementation to the REDD+ programme. The meeting closed with a word of prayer Ilaia Leitabu at 4.50pm.		



Fiji HIGHER EDUCATION COMMISSION
Certificate of Registration

This is to certify that

Forestry Training Centre

is registered with the Fiji Higher Education Commission as a
Vocational School

for the period from 07/12/2018 to 07/12/2023 as required by the Higher Education Act 2008.

Registration Number of the Institution: RGN 0055/14 Date of Issue: 07/12/2018

Director

Date

11/12/2018

Chairperson

Date

18/12/2018



Certificate Number: RG 0071

CP
January 2020

CABINET MEMORANDUM

STUDY VISIT TO COSTA RICA ON PAYMENT FOR ECOSYSTEM SERVICES

(For Information)

[Memorandum by the Minister for Forestry]

1.0 PURPOSE

1.1 The purpose of this Memorandum is to:

- (i) Inform Cabinet of the study visit to Costa Rica by the Minister for Forestry from 15-17 July 2019;
- (ii) Introduce the Payment of Ecosystem Services (PES) concept to Cabinet which Costa Rica is using as a financial mechanism to support reforestation, sustainable management of forests and forest conservation, among others; and
- (iii) Inform Cabinet of the plans for the Ministry of Forestry to conduct further research on PES in collaboration with relevant stakeholders, and for the Ministry to revert to Cabinet for its final decision on whether or not the PES could be introduced in Fiji to enhance reforestation, address climate change, protect the environment, enhance biodiversity and contribute to Fiji's socio-economic development.

2.0 BACKGROUND

- 2.1 Fiji's natural forests and the ecosystem services that it intrinsically provides have been traditionally undervalued and thus forest areas have been long degraded due to the unsustainable practices when extracting timber and even deforested when converted to other land uses. This has often occurred with both the resource owners and the Nation losing out on the massive benefits of the forest ecosystems.
- 2.2 Given the already widespread forest degradation and deforestation with the undervaluation of its full ecosystem services, coupled with the global challenges with addressing climate change, it is imperative for Fiji to consider establishing Permanent Forest Estates (PFS) so that forested areas may be properly valued and managed to provide numerous forest products and services into perpetuity. Currently, resource owners are compensated only for the value of timber removed and not for restoring the ecosystem services that the trees are known to provide such as carbon sequestration, water filtration, and habitats for fauna and flora, among others.
- 2.2 One of the potential mechanisms to finance PFS is through creating payment schemes for ecosystem services (PES) to realise the forests' full bio-economic potential to provide tangible and non-tangible benefits for Fiji's communities and societies. The tangible benefits include carbon/biomass storage and other non-timber forest products, logs for timber production (from appropriate multiple use forests), clean water, prevention of soil and nutrients erosion, biodiversity conservation, etc. The non-tangible benefits include clean air, cultural values/recreation, protection of high conservation value forests for biodiversity values, watershed maintenance, ecotourism, etc.
- 2.3 Sustainable financing is required to encourage Fiji's forest resource owners to maintain and expand their forested lands for the provision of basic services that forest ecosystems intrinsically provide. PES could be one such sustainable financing mechanism.

3.0 FIJI'S FORESTS, CLIMATE CHANGE AND REDD+

- 3.1 Fiji's forests could be properly evaluated for all its tangible and intangible benefits to be appreciated and valued, to enable nation-wide implementation of its REDD+ Carbon sequestration as a major ecosystem service that is being established in Fiji

to mitigate the impacts of Climate Change and which is managed via the World Bank-funded REDD+ Program.

- 3.2 During the 14th session of the United Nations Forum on Forests (UNFF) held from 6th to 10th May 2019 at United Nations Headquarters in New York, the Fiji delegation had bilateral meetings with the Secretariat of UNFF and with the delegation of Costa Rica. The Costa Rican delegation expressed its willingness to assist with the efforts towards sustainably managing Fiji's forests.
- 3.3 Under the REDD+ Programme, funds were available for capacity building towards sustainable forest management. The Ministry of Forestry, with the active encouragement and support of Fiji's Permanent Representative to the United Nations H.E. Ambassador Dr. Satyendra Prasad, considered a visit to Costa Rica as highly appropriate in the overall effort to better manage Fiji forest resources by ensuring that Fiji's forests are appreciated for the full value they provide. The Ministry put together a delegation comprising representatives of key government agencies, resource owners and Civil Society Organisations that were directly involved with Fiji's REDD+ Emissions Reduction Program. The delegation is listed in **Annex A**.

4.0 COSTA RICA

- 4.1 Costa Rica faced massive deforestation and land degradation issues during the 1970s and 1980s when there was widespread forest clearing to make land available for agriculture, which was believed to be necessary for economic growth. Its forest cover decreased significantly to 21% by 1987, by which time much of its population suffered from the extreme environmental degradation. However, 54% forest cover has since been recovered through a mixture of reforestation and agroforestry techniques to establish and protect trees and forests for all their multitude of benefits, especially biodiversity, natural resource management governance restructure (new forest laws) and the development of payments for ecosystem services.
- 4.2 As a result, Costa Rica has become a leading country in addressing causes of deforestation through plantation forestry, sustainable forest management (SFM), and the design and implementation of innovative forest policies aimed at protection and utilisation of forest resources and promotion of the forest sector. Costa Rica is a pioneer country in establishing PES schemes.

Additionally, for a country with only 51,100 square kilometres (roughly three times Fiji's size), Costa Rica now contains nearly 6% of the world's biodiversity.

5.0 PAYMENTS FOR ECOSYSTEM SERVICES (PES)

- 5.1 The United Nations Development Programme states that "Payments for Ecosystem Services (PES) occur when a beneficiary or user of an ecosystem service makes a direct or indirect payment to the provider of that service. The idea is that whoever preserves or maintains an ecosystem service should be paid for doing so."
- 5.2 Ecosystem services are grouped into four main categories:
- i. Provisioning services (the products obtained from ecosystems such as food and fresh water);
 - ii. Regulating services (the benefits obtained from the regulation of ecosystem processes such as air quality and pollination);
 - iii. Cultural services (the nonmaterial benefits that people obtain such as spiritual enrichment, recreation and aesthetic experiences) that directly affect people; and
 - iv. The supporting services needed to maintain the other services (such as photosynthesis and nutrient recycling).
- 5.3 Participants can be individual landowners, farmers, communities, businesses or public entities. However, because most ecosystem services are not traded in markets, the intervention of a regulatory agency may be needed to create those markets.
- 5.4 Carbon sequestration is one PES scheme that is already well into development for Fiji via the REDD+ Programme. PES Schemes address the following Sustainable Development Goals:
- (i) Goal 1: No poverty;
 - (ii) Goal 3: Good health and well-being;
 - (iii) Goal 5: Gender equality;
 - (iv) Goal 6: Clean water and sanitation;
 - (v) Goal 13: Climate action;
 - (vi) Goal 14: Life below water;
 - (vii) Goal 15: Life on land.

6.0 FIJI DELEGATION VISIT TO COSTA RICA

- 6.1 From 15 to 17 July 2019, a 12 member Fiji delegation visited Costa Rica after the FCPF 20th Carbon Fund Meeting in Washington DC. The Delegation was led by the Minister for Forestry. More information on the visit is provided in the Visit Report attached as **Annex B**.
- 6.2 Areas of interest to explore and learn from Costa Rica included:
- (i) Institutional, legal and financial reforms relevant to Costa Rica's success in forest and biodiversity conservation, including approaches to ecosystem valuation.
 - (ii) Costa Rica's experience with financial incentive programs, particularly, Payment for Ecosystem Services (PES) and REDD+ programs, with a focus on the implementation process and benefit sharing mechanisms.
 - (iii) How the Emissions Reduction Program has been implemented and any lessons learnt in the Forest Carbon Partnership Facility context.
- 6.3 During discussions between the two delegations at the Ministry of Environment and Energy in Costa Rica, there was a mutual agreement between the Fijian Minister for Forestry and the Costa Rican Minister for Environment and Energy on a collaborative partnership for the development of payments for ecosystem services system for Fiji. Such a partnership could be outlined in a Memorandum of Understanding between the two Governments.

7.0 POTENTIAL BENEFITS OF PES TO FIJI

- 7.1 PES can provide incentives for Fiji's forest owning communities to value and appreciate their native and planted forests for more than just logs or timber-based wood products.
- 7.2 PES creates the financial mechanism(s) for a fairer user-pay system for forests tangible and intangible benefits whereby Fiji's forest resource owning communities collect payments from sectors that have long enjoyed forest benefits almost for free.

- 7.3 Fiji's rural communities would be able to make better informed decisions for sustainable resource use practices that are usually connected to PES through the provision of training and technical assistance.
- 7.4 PES can provide opportunities for cash income to Fiji's rural areas that are less developed and where poverty might be concentrated.
- 7.5 PES can create behavioural changes in Fiji against deforestation and forest degradation through positive incentives for sustainable forest management and conservation, rather than coercion, which would be more likely to lead to transformational change.
- 7.6 Fiji's forest resources could be enhanced to provide greater outputs which could in turn grow Fiji's economy. Such outputs could include nature-based tourism, culture-based tourism, fresh water, fresh air, and many other intangible benefits.
- 7.7 It is to be noted however that the economic valuation of ecosystem services can be a difficult and costly process, despite innovations in techniques and technology and may require a multisectoral approach.

8.0 WAY FORWARD

- 8.1 The Ministry for Forestry will conduct further research on the various types of PES schemes worldwide for possible adaptation to Fiji's needs. This could be accomplished through collaboration with other Ministries and both local and international forestry stakeholders.

9.0 RECOMMENDATIONS

- 6.1 Cabinet is invited to:
 - (i) note the study visit to Costa Rica by the Minister for Forestry and a delegation of key stakeholders to be introduced to the concept of 'Payment for Ecosystem Services' (PES) that has been developed to finance Costa Rica's reforestation and conservation program.
 - (ii) note the introduction of the PES concept to Cabinet as a potential financial mechanism to support sustainable forest management including

reforestation, forest conservation, environment protection, biodiversity enhancement, climate change mitigation and adaptation, and socio-economic development; and

(iii) note that the Ministry of Forestry will revert to Cabinet for its final decision once the appropriate PES Scheme is fully developed.

[O N]

File: FO/G/13-35

Ministry of Forestry
Takayawa Building
Toorak Road
Suva

January 2020

FORESTRY BOARD MEETING

MINUTES OF MEETING HELD ON WEDNESDAY 26TH APRIL 2017 AT LEVEL 3 CONFERENCE ROOM TAKAYAWA BUILDING

Present:

Mr Elik Senivasa	Chairman	Conservator of Forests
Mr Noa Vakacegu	Secretary	PFO Executive Support
Mr Jone Sovalawa	Member	Department of Agriculture
Mr Uraia Waibuta	Member	Land Conservation Board
Mr Wiliame Katonivere	Member	Landowner Representative
Mr Inoke Wainiqolo	Member	Forest Owners
Ms Losana Rokotuibau	Member	Dept of Town & Country Planning
Ms Catherine Pleass	Member	Forest Users
Mr Solomone Nata	Member	iTaukei Land Trust Board
Ms Susana Tuisese	Member	Public Interest

Apologies:

Mr Vimlesh Kumar	Member	Forest Industry
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1. The meeting begins with a prayer by Mr Waibuta the Land Conservation Board rep.
2. The chairman opened the meeting by welcoming both the new and continuing board members for accepting the offer to be a member of Forestry Board for the next two years.
3. PSFF deliver the opening remarks by congratulating new and continuing board members and thank them for accepting the request to be a Forest Board member. He informed members that under the provision of the Forestry Decree 1992, section 4 (1 – 2) it states that their role is to advise the Minister on matters relating to forest policy and the CF to be the chairman. After consultation by forestry board matters of concern to be taken up to the Minister. The PSFF needs to be consulted on anything that needs to be brought in to forestry board meeting. He stress on the roles of forest and the continuous change and its potential on timber production, biodiversity conservation and climate change. The board has a huge role to play in terms of setting the future for our forest as we can see that in overseas universities they have closed down forestry schools and move on to environment courses. It is important to see future roles of the forest on communities and other stakeholders and to have a balance approach. The PS thanks the FB members, remind them of the challenges ahead of them and wishing them well in the next 2 years of their term.

4. Past Forest Board Decision/Issues

FB01/13: GEF – PAS 4 Project: Forest & Protected Area Management

- The secretary informed members that the project will soon be conclude and the outcomes would be relayed to the board through a board paper as to the achievements and progress of the project in the next FB meetings
- The chairman later informed the board that the GEF – PAS 4 project for Fiji may extend again for 1 year.

FB02/13: Establishment of Forest Certification Committee

- The secretary informed the FB that certification process completed, but the industry relayed that they hardly exported native timber, so they are reluctant to go through certification as it would be costly & not viable for the small amount of timber and veneer they currently exported.

- Mr Nata strongly stressed the need for industry to go through certification and it has to be considered for the benefit to resource owners
- Mr Katonivere mentioned that we need to seriously consider certification due to illegal logging & use of portable mill in the North. There is a need to consider the issuance of logging license especially for pine as it causes problems between members of landowning units.
- Ms Tuisese asked if there is a cabinet decision on a National Certification Standard, the answer was no. She request for the development of one so it becomes law and everyone to abide by it.

FB03/13: REDD+ Programme Progress

- On the current progress of Monitoring Reporting and Verification of our carbon stock, the FB was informed that University of Hamburg selected as the leading consultants with FNU & SOPAC as the local counterparts. They will develop the MRV system and the contract work recently commence
- Mr Nata raised the issue on the conclusion of REDD+ lease
- The chairman explains to the new board members that the lease raised is for the REDD+ project site in Draubuta village, Navosa. The Lands Department demand for the full payment of the lease and it should be formalized within 2 weeks' time.

Access to Mahogany Plantation Resource

- The secretary informed the board that a briefing paper to the Minister by the chairman to address the poor harvesting practices in the mahogany plantations and the concern over access to mahogany logs by local timber manufacturer has not been prepared and can be confirmed in the next meeting.
- The chairman informed FB members that there has been ongoing consultation between the Forestry department and the industry and they are currently adopted open tender process for anyone who wants to access to mahogany logs.
- Mr Nata raises his concern on the implication of mahogany decree which is hindering communication on lease. There is a need to address issues on planting and figures on area planted to be provided.

Native Forest Replanting

- The secretary informed the board that the chairman promise to prepare a board paper on enrichment planting and this will be presented in the next FB meeting.

National Sustainability of Log Supply

- A decision from the FB meeting of 06/09/13 for the Forestry Department to present the National Forest Inventory result to the board. It has been raised by the secretary that it will be presented to the board in the next financial year sometime in August 2017 to July 2018 after consultation with other stakeholders.

Environment Impact Assessment (EIA)

- In the FB meeting of 06/09/13 the board request that the Code Steering Committee to deliberate on EIA and report to FB. Also noted that all Forestry committee to present their TOR to the board.
- Ms Tuisese requested that secretariat of committees to present to the board.

Mangrove Management Plan

- In the last board meeting of 06/09/13 the FB request a draft on Mangrove Management Plan circulated to all members.
- The chairman raised that there is a Mangrove Management Committee chaired by the Department of Lands.
- Also brought up by the member issues related to the issuance of license to harvest, payment of royalties and monitoring. There is a need to evaluate mangroves and its biodiversity.

FB05/13: Forest Carbon Rights

- In the FB meeting of 06/09/13 a decision raised was raised that discussion on forest carbon rights moved to a Special Board meeting in October but no confirmation on that meeting
- It was raised in the meeting that forest carbon rights are covered in the Forest Bill 2006.

FB06/13: Forestry Public Sector Investment Capital Project

- The chairman informed the board that all PSIPs discussed in the board meeting of 06/09/13 are all on-going projects

FB08/14: Permanent Forest Estate (PFE)

- It was raised by the board that the department of forest needs to address the issue on PFE and present to the board.

- The chairman informed the board that PFE is the forest area demarcated and only forest activities such as logging, reforestation, conservation, protection etc can be carried out in it.
- Ms Tuisese asked what actually we need to get out of this PFE and she raised some of the concept on conservation. To wait for a national land-use plan it will take some time, she added that we can have default area for PFE. The Rural Land Use policy can be used to support existing forest areas.
- It was also raised that sharing of data between other Ministries can assist to identify areas suitable for PFE and forestry department can work on it to get a draft.

5. Discussion on Board Papers

5.1 Sustainable Removal of the Invasive African Tulip Tree Species in Viti Levu

- The CF briefly explained that most research has been done to remove the African tulip and one is the use of chemical which applied to the bole of the tree after ring barking. Now with a partnership between the government and the industry this invasive species will be used for the generation of power. A taskforce has been formulated to look into the use of African tulip to produce pellets. A capital project on eradication of African tulip formulated to prepare a Public Sector Investment Programme (PSIP). CF also informed the board the African tulip also have environmental values and are currently establishing their own environment.
- Mr Nata also raised the importance of African tulip as a carbon sink which is a mechanism that removes carbon dioxide from the atmosphere.
- Ms Tuisese was concerned with waterways and she suggested that Nabou Green Energy to use portable chippers to do chipping on site and harvesting code to be enforced. Harvested sited to be reforested again.
- CF confirmed that logistic from the field to the mill will be covered by the company.
- Mr Nata raised the issue on cost and Ms Tuisese raised some of the area that needs to be covered by Nabou Green Energy if they are willing to pay. These includes royalty and the functions of the trees There is also a

need to reflect on the volume to be consumed by the company and environmental issues that will affect people.

- It has been raised that there will be opportunity to plant gliricidia sepium and eucalyptus as short to long term crop.
- An issue raised was for people to be compensated to plant and there is a need to have a clear plan as past experiences showed that even though funds available people still reluctant to plant.
- There was a suggestion that Nabou Green Energy buy the gliricidia and it has been clarified that the company has already prepare agreements with landowners that plant their land, and they will be the market to buy their crop.

5.2 Forest Protected Area in Fiji

- Ms Tuisese informed the FB that the purpose of this paper was to inform the FB that there is a need to develop and secure large area with high biodiversity value and provide the current status of the protected area and the area of national significance that needs to be protected
- It was also highlighted that Forest Policy 2007 need implementation framework and activities to support protected areas.
- The protected area committee developed under the National Environment Council and is mandated to report to the council.
- FAO GEF-PAS4 project facilitated by the Department of Environment works on expanding protected area through establishment of greater Delaikoro (new reserve), expansion of greater Tomaniivi and proper demarcation of Taveuni reserve due to encroachment.
- There is need to gather signatories from Taveuni, greater Delaikoro and greater Tomaniivi for leasing purpose.
- Wildlife Conservation Society (WCS) secure a conservation lease near Kilaka
- The Nakanacagi protected area was bought through a consortium between the Institute of Applied Science (IAS) of USP, Nature Fiji Mareketi Viti (NFMV) and National Trust of Fiji (NTF) and also donated by individuals.
- For sustainable financing on protected area the Sovi Basin provides an in-country reference model to adopt in Fiji at a larger scale
- Through GEF-PAS4 the International Union for Conservation of Nature (IUCN) to report on analysis of Fiji current laws and policies related to terrestrial protected areas and recommendations on appropriate

framework for effective protected area management. The analysis & recommendations to be presented to the FB for support.

- Under Convention on Biological Diversity (CBD) Fiji needs to have 17% of protected area. This is also addressed in Aichi target 11.
- Ms Tuisese also raised that commitment needed to extend Sovi Basin model to other protected areas. The Sovi Basin currently managed by the NTF and payments to landowner received biannually to pay for conservation lease, compensation on royalty for standing trees, community development funds and management cost.
- The FB agreed to adopt the paper.

5.3 Plantation Policy

- The board was informed that the consultation process completed and a FAO consultant hired to prepare a draft policy which will be vetted first by SG's office before it is sent back to the consultant.
- The vetted policy paper needs to be cited and discussed by the FB for comments before its sent back to the consultant.
- The Director Research and Development raised through the information paper presented that there is a need for a clear direction on the role of the plantation in achieving sustainability.
- Mr Wainiqolo raised an issue on the need to look at the silvicultural regime on plantations. Fiji Pine Ltd mostly targeting pine chips which is about 75% of our export. There is a need to look into high value commodity from logs.
- Its been agreed by the FB to adopt the paper.

6. Other Matters

- Next Meeting is scheduled for Wednesday 2nd of August 2017.
- Closing remarks by the chairman
- Closing prayer by Mr Wainiqolo
- End of meeting
- LUNCH

Email Correspondence:

Subject	PAC Request for Supplementary Evidences - Minutes of the Forestry Board Meeting
From	Sanjana D Lal - sanjana.lal@govnet.gov.fj ; Pene N Baleinabuli pene.baleinabuli@govnet.gov.fj
To	Mateo W Lagimiri – mateo.lagimiri@parliament.gov.fj
Cc	Temalesi S Fong tfong@govnet.gov.fj ; Savenaca Koro savenaca.koro@govnet.gov.fj
Sent	Tuesday, May 12, 2020 01:06 PM
Content	Please find attached the Minutes of the Forestry Board meeting that was last convened by the Ministry of Forestry. The Board term expired in 2018 and we are yet to renew Board membership. Process for reviewing the Board membership is in progress and will be finalized soon.



LIST OF VERBATIM REPORT

Report of the Auditor General –Performance Audit Reports on:
(Parliamentary Paper No. 153 of 2019)

No.	Witnesses	Page No.
1.	Joint Hearing:– (i) Ministry of Infrastructure, Transport, Disaster Management and Meteorological Services; and (ii) Energy Fiji Limited Report of the Auditor-General – Performance Audit Report on the Management of Rural Electrification Program	2
2.	Ministry of Forestry Report of the Auditor-General – Performance Audit Report on the Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007	29

[VERBATIM REPORT]

STANDING COMMITTEE ON PUBLIC ACCOUNTS

REPORT OF THE AUDITOR-GENERAL

**The Special Joint Committee Inquiry on the Performance Audit
Report for the Management of Rural Electrification Programme**

INSTITUTION: a) Ministry of Infrastructure, Transport,
Disaster Management and Meteorological
Services
b) Energy Fiji limited

VENUE: Big Committee Room (West Wing)

DATE: Wednesday, 18th March, 2020

VERBATIM NOTES OF THE MEETING OF THE STANDING COMMITTEE ON PUBLIC ACCOUNTS HELD AT THE COMMITTEE ROOM (WEST WING), PARLIAMENT PRECINCTS, GOVERNMENT BUILDINGS ON WEDNESDAY, 18TH MARCH, 2020 AT 1.05 P.M

Interviewee/Submittee: (a) Ministry of Infrastructure, Transport, Disaster Management and Meteorological Services
(b) Energy Fiji limited

In Attendance:

Ministry of Infrastructure, Transport, Disaster Management and Met Services

- | | |
|------------------------------|----------------------------|
| 1) Mr. Taitusi Vakadravuyaca | Permanent Secretary |
| 2) Mr. Mikaele Belena | Director Energy |
| 3) Mr. Deepak Shanil Chand | Assistant Director Energy |
| 4) Mr. Karnil Prasad | Principal Accounts Officer |

Energy Fiji Limited (EFL)

- | | |
|------------------------------|--|
| 1) Mr. Hasumukh Patel | Chief Executive Officer |
| 2) Mr. Jitendra Vishnu Kumar | General Manager Network |
| 3) Mr. Karunesh Rao | Corporate Affairs & Communications Manager |

Office of the Auditor-General

- | | |
|----------------------------|----------------------|
| 1) Mr. Kuruwara Tunisalevu | Director Audit |
| 2) Mr. Samuela Tupou | Acting Audit Manager |

MR. CHAIRMAN.- Good afternoon everyone. I welcome all Honourable Members, members of the public who are watching and the media to today's Committee Inquiry on Performance Audit Report on the Management of Rural Electrification Programme. I take this opportunity to welcome the Permanent Secretary for the Ministry of Infrastructure, Transport, Disaster Management and Meteorological Services and the Director for the Energy Department. We also welcome Mr. Patel, the Chief Executive Officer of Energy Fiji Limited and his team and we also have the presence of staff from the Office of the Auditor-General who have agreed to appear before today's Committee's hearing.

The Special Joint Committee Inquiry on the Performance Audit Report for the Management of Rural Electrification Programme was established by a resolution of Parliament when it was referred to the Standing Committee of Public Accounts on 22nd November, 2019. It is part of the Committee's responsibility to gather information from the relevant stakeholders regarding the findings in its Audit Report. The purpose of the inquiry is to:

- (1) allow the witness to present and produce relevant documents and information in line with the finding in its Audit Report;
- (2) allow the Committee to ask questions specifically related to the Ministry's function as far as this Audit Report is concerned;
- (3) allow the witness to respond to Committee's question; and
- (4) provide important information that will assist the Committee in the formulation of its Report to Parliament, particularly on our finding with the recommendation that will be debated on.

I would like to take this opportunity to introduce my team.

(Introduction of Committee Members and Secretariat Team by the Chairman)

For the information of the submittees, please be mindful that you are live on television (*Walesi* platform), also live on our *Facebook* page and as well as our website. So anything said here is a public document and it will be covered by the media as well. If you have any information that cannot be informed to the Standing Committee on Public Accounts in public, you can give a written submission or give us in private.

For the media, because there are cameras all around so they will be capturing the session today and if there is any movement, this will be a hindrance to those recording today's session. Without further delay, I would now like to request if the submittees could introduce themselves and then we will go into submission proper. Thank you. We shall start with the Ministry of Infrastructure.

(Introduction of the team from the Ministry of Infrastructure)

MR. CHAIRMAN.- Thank you. Now we shall give the floor to Energy Fiji Limited. They can introduce their team.

(Introduction of the team from Energy Fiji Limited)

MR. CHAIRMAN.- Thank you. With us we have staff from OAG, if they can introduce themselves please.

(Introduction of team from the Office of the Auditor-General)

MR. CHAIRMAN.- Thank you. I was informed, there is a presentation by Energy Fiji Limited with regards to the questions that were sent over.

We will start with Energy Fiji Limited and please be mindful we might interrupt in between, should my Members have any supplementary questions or any clarification that they would like to seek. The floor is yours, Sir. Thank you.

MR. H. PATEL.- Thank you very much and once again a very good afternoon to the Public Accounts Committee. It is a pleasure to be here and present a report on behalf of Energy Fiji Limited (EFL). I will go procedurally with the questions that have been posed. I will actually say out the question and then give the answer.

The first question is policy and procedures for the Rural Electrification Programme.

Please advise on the status of consultation with stakeholders and the update on the review of the Rural Electrification (RE) Policy and Standards Operating Procedures (SOPs).

As far as the RE Policy and SOPs are concerned, that actually lies with the Ministry. As far as Energy Fiji Limited is concerned, we are the executing agency whereby we construct the schemes and ensure that the customers are thereafter connected. So our response is, EFL

carries out surveys and preliminary design upon request by the Department of Energy, Ministry for Infrastructure, Transport, Disaster Management and Meteorological Services and provides quotations for identified Rural Electrification Schemes.

The Director of Environment (DOE) then advises EFL of the schemes that are earmarked for construction and connection to the EFL grid on a yearly basis as announced at the National Budget. Once payment is received for the respective RE Schemes, way leaves are obtained, designs are finalised and construction is programmed by EFL teams or contractors appointed via tender procedures. The Rural Electrification Projects Implementation Committee (REPIC) which consists of the Department of Energy, EFL and Ministry of Economy meet on a regular basis to review progress.

Mr. Chairman, do you want me to continue or do you want the Ministry to answer Question 1 as well?

MR. CHAIRMAN.- We will go with Energy Fiji Limited first and then we will switch on to Ministry. Any supplementary, Honourable Members?

We will just change our format a bit. What we will do, we will request the Honourable Members to ask specific questions that were posed to you, so they will ask the question and then you can respond to that.

MR. H. PATEL.- Okay, thank you.

MR. CHAIRMAN.- Honourable Prakash.

HON. V. PRAKASH.- Thank you, Mr. Chairman, through you Sir. My question to the EFL. The funding of Rural Electrification Unit Programme. Can the Director of Energy provide the summary of the RE programme by the division with its associated cost as at March, 2020?

MR. CHAIRMAN.- Sorry, Honourable Prakash, we have a presentation before us, if we can follow that.

HON. V. PRAKASH.- I am sorry for that. Thank you Mr. Chairman, the funding of Rural Electrification Unit Programme. Can the EFL provide the summary of the REU Programme by division with its associated cost as at March 2020?

MR. H. PATEL.- Mr. Chairman and Honourable Members, this is question 3, just for clarification and the response is as outlined in the hand-outs that we have distributed. In 2017 we had actually spent \$12.2 million and executed 71 schemes:

- 28 in the Central Division
- 32 in the Western Division
- 21 in the Northern Division

We connected 3,328 households.

In 2018, we spent \$11.92 million, executed 127 schemes:

- 34 in the Central Division

- 61 in the Western Division
- 32 in the Northern Division

And connected a total of 2,469 households.

In 2019 we spent \$11.18 million where 98 Schemes were completed:

- 25 in the Central Division
- 43 in the Western Division
- 30 in the Northern Division

A total of 2,213 households were connected.

For the year 2020 as we speak, total schemes completed are 27:

- 6 in the Central Division
- 18 in the Western Division
- 3 in the Northern Division

We have connected 295 customers in 2020.

As you can see, EFL spent a total of \$22.85 million in 2019 on the construction of the new Government Rural Schemes, grid extensions for commercial and industrial project as well. Just for clarification, EFL not only extends the grid to connect to rural customers but also the commercial customers who are opening up new factories or new buildings, we need to extend the grid to connect them as well. We also carry out what we call system reinforcement works and concrete jobs. So the total amount of money, there is breakdown there, for example in 2019 we have spent \$11.18 million for 98 Rural Electrification Schemes.

The general extension projects for commercial and industrial customers, there were 71 schemes, \$7.76 million was the cost, 26 contract jobs (these contract jobs are for any organisation who wishes EFL to relocate their assets to accommodate their services). It could be Fiji Roads Authority or anyone. We did 26 contract jobs, spent almost a million dollars and we also spent around \$3 million in 23 Power Reinforcement Schemes to ensure that people were getting the right voltage and we are able to meet their power demand. Thank you.

MR. CHAIRMAN.- Any supplementary question?

HON. A.M. RADRODRO.- Thank you, Mr. Chairman and thank you CEO for a very detailed answer regarding the programmes by Division. You had mentioned that EFL spent a total of \$22.85 million. In a broader context, can you just elaborate to the Committee whether this also includes the Government contributions or subsidies or is it just a total cost that is borne wholly by EFL.

MR. H. PATEL.- Thank you very much for the question Honourable Member. As I said earlier, out of that \$22.85 million, \$11.18 million were for 98 RE projects. So this \$11.18 million funding came from the Government. So the Government pays 100 percent of the cost of Rural Electrification projects.

As far as the general extension projects for commercial and industrial customers, the policy that has been determined by FCCC is that if a commercial customer wishes to extend the grid to supply his new factory or plant or whatever it may be (new building) then they have to pay 100 percent upfront cost. For example, if it is going to cost \$100,000 to extend the grid to supply these customers' new factory, then they have to pay that \$100,000 upfront and we use that money to actually extend the grid and connect the supply to him. But the customer then has six years to recover his \$100,000 so that \$100,000 is a refundable contribution. So every year the amount that he gives us as revenue for electricity revenue, for example, if they are paid \$100,000 upfront, we connect him and thereafter the customer every year, say the first year he gave us \$20,000 as electricity revenue then we returned him half that amount which is \$10,000 and he has six years to recover his \$100,000. He can recover it in one year, he can recover it in three years, he can recover it in six years but after six years if he has not recovered that \$100,000 which means he has not given us \$200,000 in revenue then he forfeits the remaining balance. So that is for the general extension projects for commercial and industrial customers. As far as that \$0.92 million on contract jobs, again if any utility (it could be any third party) who is wishing us to relocate our assets then they have to pay for that contract job. But the last one \$2.99 million for 23 distribution power system reinforcement projects EFL actually spends its own money (\$3 million) to strengthen the system in order to cater for the increase in demand.

HON. V. PRAKASH.- Mr. Chair, supplementary question. CEO, you have mentioned that \$11.18 million for Rural Electrification Projects is totally funded by Government. Does it mean that there is no contribution now from those people who are staying in the rural areas? Is it that the whole sum is now paid by the Government?

MR. T. VAKADRAVUYACA.- Yes, Honourable Member, there is no more contribution from the communities now.

HON. V. PRAKASH.- Mr. Chair, another supplementary question. What about those who have paid before and their money is within the system? So, what will happen in that regard, Mr. Chair?

MR. T. VAKADRAVUYACA.- Thank you, Honourable Member. Mr. Chair, through you the answer to the question is there is a refunding process that has taken place in terms of the people that have already paid their 10 percent deposit and the decision that was made for Government to fully fund the rural electrification project, so the Department has taken that process of refunding all those communities that have paid. So the refunding process has taken place.

MR. CHAIRMAN.- Just a supplementary question. All those communities who paid a certain percentage, I believe that was 10 percent of the contribution to the total cost of getting the grid extension to their community, when they were actually refunded where they prioritised because they had actually paid a deposit?

MR. T. VAKADRAVUYACA.- Thank you, Mr. Chair. The Department took a stand on making those priorities because they showed interest and they paid the 10 percent deposit, they were given preference over the lease that was later generated through the Government initiative of full 100 percent. So, the answer is, yes.

MR. CHAIRMAN.- So, all those projects have basically been completed by now?

MR. T. VAKADRAVUYACA.- Yes, thank you.

MR. CHAIRMAN.- Yes, Honourable Ratu Lalabalavu.

HON. RATU N.T. LALABALAVU.- Thank you, Honourable Chair. Thank you PS and CEO. I understand from the Report that is before us, Page V it is quite obvious that Government is funding everything as alluded to a while ago by yourself, PS and CEO; Government is funding rural electrification now without deposits being paid. Just to help guide the Committee, Mr. Chair, if I can take us back to the initial status of when we started this rural electrification especially with the role that now this new company (EFL) is now playing. On the acquisition of some portions of land up there in Monasavu, the leasing of the way leaves also the high voltage and the rural electrification grid extension, et cetera, in the change of the mode of operation to EFL from FEA and now this percentage of payment from the community is no longer taken in as being borne by Government, any thought was given to going back and holding discussions with the landowners that were affected in the way this change has now happened as apart from the initial negotiators that happened way back especially on this rural electrification programme. We are trying to take the electricity up to the interior, to the hinterland, the very people that provided through their generosity the opportunity to have this big project built on their land. But in this change, what I am trying to get at, Honourable Chair is, were there some thought given as to how the landowners could be informed of this new change? I understand CEO shares were floated but when we raised it in the House, it said everyone is the same. There was no particular or special mention of the landowners in this regard. They had to either comply with what was being floated by registering themselves or the company, et cetera to get shares but that is the crux of the question that I am raising. Were there thoughts given, were talks held again or it was simply what we have in hand is enough to take us through?

MR. H. PATEL.- Thank you, Mr. Chairman. I think we are here to discuss rural electrification and the Honourable Member has brought another angle to it and he has brought in the Monasavu Hydro Scheme, I believe. To be honest, when the Monasavu Hydro Scheme was actually conceived and constructed way back from 1978 to 1981 the landowners were not given electricity then. It was only many years later that electricity was then connected to all the villages in the vicinity of Monasavu and it was done by the Government and no contribution was charged to the customers.

As far as the land is concerned, I believe the land was acquired then by the government of the day and proper procedures were followed and they were compensated according to the policy prevailing then. And even today, the same policy is there. Obviously the policy has been reviewed, there were some challenges, there was a court case and whatever the court case ruling came out in accordance with that particular ruling, EFL is making payments on a yearly basis to people whose land has been utilised for the particular scheme and the transmission line as well as the amount of electricity that is generated by the Monasavu Hydro Scheme; the landowners, each particular *mataqali* is being compensated on an agreed rate. Thank you, Sir.

MR. CHAIRMAN.- Thank you, that is well noted.

HON. RATU N.T. LALABALAVU.- Mr. Chairman, a supplementary question just for the CEO to elucidate further on the reply that he has given. So, no talks were undertaken with the landowners in this change? You changed from FEA to EFL even though you floated shares,

that is where the crux of the question is coming from. You are inviting people to participate in it, what about the landowners?

MR. CHAIRMAN.- I believe as far as I see, Honourable Member to that particular question, the shares that were offloaded were to the customers and not to the landowners. As alluded by the EFL CEO, if they are getting a royalty on the units of energy or power that is produced through rural electrification, let us say if they were producing 10 units till to date, they were getting a certain amount, let us say one cent per unit. Now, with ten units they were getting ten cents but now because of this rural electrification if they are producing 15 units, they are getting 15 cents if I am on the same page.

MR. H. PATEL.- No. What I am saying is that there are two different subjects one is rural electrification and the other is the landowners who leased their land or some land was outright sold to Fiji Electricity Authority through the Government. So, I am saying that is totally a different deal. The government of the day at that time went through that process. The question that the Honourable Member is asking is that when Fiji Electricity Authority was corporatized to EFL and when shares were given to the domestic customers of EFL, of course, there was a criteria, did EFL or the Government go back and consider those landowners? What we are saying is, that deal was a separate one that went through the court, initial payments were there, then there was a court case and then the amount of payment was revised. So the lease payment is also being given and also for the amount of electricity that is generated by the Hydro Scheme on an annual basis for every unit that is generated (not sold), they get so many shall I say “half a cent” or whatever it may be per unit which is given to the landowners.

MR. CHAIRMAN.- That is where I was coming from. With rural electrification, the energy produced at Monasavu would increase. That means the royalty would proportionately increase with the increase in the production of electricity.

MR. H. PATEL.- Not necessarily, because the Monasavu Hydro Scheme on a long term average produces about 400 million units of electricity. Some years if the rainfall is better, then it could produce 420 million units or 430 million units, like for last year it produced 454 million units, but because the rainfall was greater and it produced more than the long term average, obviously the landowners benefitted.

MR. CHAIRMAN.- All right. Yes, Honourable Radrodro.

HON. A.M. RADRODRO.- Thank you, Mr. Chairman. Thank you CEO for some of the clarifications. Just a question on royalty. You mentioned that EFL is still continuing to pay out royalties as per power generation, is that still continuing to-date?

MR. H. PATEL.- Yes. Every unit of electricity that is generated out of Monasavu Hydro Scheme, the Wailoa Power Station, there is a certain amount of payment made for every unit of electricity generated.

HON. A.M. RADRODRO.- Per kilowatt hour?

MR. H. PATEL.- Per kilowatt hour.

HON. A.M. RADRODRO.- Secondly, Mr. Chairman, just a follow-on from the earlier questions regarding the consultations with the landowners. We know that EFL has now

changed its operation to become privatised or corporatized and this is where it issues shares, but the concern is regarding consultation where the lease amount that you used to pay the resource owners, whether it has increased and if it has not, why has it not increased given that now it has changed its operations?

MR. H. PATEL.- It has not changed its operations, it has been corporatised from a statutory organisation or statutory government body to basically a corporate organisation, limited liability company with shareholders. As far as the deal that was struck between Fiji Electricity Authority, that is still continuing. As part of the new entity, the new entity has to actually fulfil that agreement. There is no way the agreement has been reduced in anyway. That agreement passes onto EFL and it has to meet those commitments.

HON. A.M. RADRODRO.- Mr. Chairman, just follow on. I think the issue that we have also brought up is the Wailoa Power Station and the Wailoa Power House. The landowners are still asking about the leasing of those two properties. You can give us an answer to those particular issues?

MR. H. PATEL.- As far as we are concerned, Mr. Chairman and Honourable Members, EFL has all the necessary leases that are required for all the assets that we have out here. If this topic could be taken up at our office level, we can actually show you all the leases and the landowners through iTaukei Land Trust Board, whoever is the land administrator. If it was a crown land then obviously the Government had come in, but if it is a native land then obviously iTLTB is the administrator and we have the necessary lease agreements or outright purchase agreements.

MR. CHAIRMAN.- Thank you CEO for that clarification. We will move forward, Honourable Nand, your question, please.

HON. J.N. NAND.- Thank you, Mr. Chairman. I refer to page 2 of your presentation, that is on human resources. Please advise what is the status of the staff structure of EFL on Rural Electrification Scheme?

MR. H. PATEL.- Thank you, Mr. Chairman and Honourable Members for that question. Mr. Chairman, EFL does not have a separate rural electrification unit per se. Works required for rural electrification projects are handled by existing teams from the Ministry of Land which carries out the survey and way leaves, then we have our Planning and Design Department that carries out the design, then obviously we have our Finance Division that ensures that capital is allocated for the construction of the scheme. We have our Supply Chain Department which ensures that all the line hardware and materials that are required for the construction of that Rural Electrification Scheme have been ordered and arrived in our inventory, then obviously we have our Legal Team that drafts the agreement that is signed between the Ministry and EFL and then finally, we have our Network Construction Teams and our contractors who then go and construct the powerline. Finally, once the powerline is constructed and energised, then our Customer Services Team actually goes out to the various rural areas and assist the customers to get connected and of course the prepaid system is installed in the rural areas and the villagers are then taught how to actually buy and purchase the units using their mobile phones or our agents and how to actually enter those digits into these prepaid metre so that the electricity can then flow into their houses.

I would not say we have got RE Unit per se, but we have got many various departments and all these departments play their part in ensuring the scheme is constructed and finally electricity is delivered.

MR. CHAIRMAN.- Yes, Honourable Lalabalavu.

HON. RATU N.T. LALABALAVU.- Thank you Mr. Chairman, through you. Thank you CEO, just a question on the Rural Electrification Unit. You do not have a unit as such, even you have jobs being spread out in your present EFL structure, but you as a CEO, having this Rural Electrification Project as one of our primary targets, whether it is this Government of the day or any Government to see that electrification touches the very people that needs it mostly in the especially in rural areas, do you not think that it is prudent that there should be a separate unit for this, given that there is a role that is being played by the Department of Energy here and you two run these two together?

MR. H. PATEL.- What I am saying is, there are different types of resources that are required to execute this scheme. As I said earlier, you need a team that carries out the survey and gets the way leaves, so that is a group of people. We have a department, so that is their functionality. Then we have another department which is the Technical Department that actually carries out the design of the scheme; that is another department. All I am saying is, these various departments that I have talked about when answering the question, they do not only carry out rural extension schemes, they also build many other power lines, design many other power lines for commercial customers or for reinforcement schemes.

Basically all these resources are there, Sir. There is no problem, we have not failed in any way till today to carry out these schemes. Whatever our agreement is with the Ministry to execute so many schemes, we carried it out. So the point is, the resources cannot be built into one unit to carry out just RE Schemes, because as I said, there are many commercial schemes that are done and the same group of people in each department will do that, but we make sure that our resources are properly utilised. We give RE a lot of priority, in fact, we discuss and we have meetings every month between Ministry of Economy, Department of Energy and ourselves. We look at the schemes as prioritisation, there is the funding that comes in and we have a yearly target.

In fact in EFL, we have got a Key Performance Indicator that we have to build so many schemes in this particular year and connect so many customers. It is not a question of whether we should have an RE Unit per se within the organisation because as I said, different skill sets are required right from the word “go” till the end and all these skill sets are in different departments where they carry out their roles, because this is not the only role that they carry out. We build many of the power lines for commercial customers and for EFL Re-enforcement Schemes as I alluded to earlier. Thank you, Sir.

MR. CHAIRMAN.- So basically, you have in-built capacity within FEA to handle. We do not need a separate unit.

MR. H. PATEL.- We do not need a separate unit. For example, as I said, we have got survey team, way leave team, design team, finance team, construction crew, they do not carry out only RE schemes, they carry out many other schemes.

MR. CHAIRMAN.- And coming up in other units would be just duplicating this department again?

MR. H. PATEL.- That is right.

MR. CHAIRMAN.- Yes, Honourable Lalabalavu.

HON. RATU N.T. LALABALAVU.- Thank you, Mr. Chairman. Thank you CEO, I beg to differ with that explanation given by CEO. Why? I must declare my interest especially with the Rural Electrification Programme that was undertaken in Taveuni. We had problems right from the initial stages of the work especially when you are trying to do your way leave. We had talks with the Department of Energy and then EFL came in very much later. When the talks that were held with the Department of Energy were not properly well fulfilled in terms of the agreement that was done, because FEA taking over EFL, there was nothing of that sort with EFL. The agreements were done with the Department of Energy, ye the running of the Rural Electrification Programme when it was opened by the Honourable Prime Minister was undertaken by FEA. So this is where I thought that there is a need to have a separate unit so it can dovetail with the role of the Department of Energy. Apart from the Department of Energy, there were other people, other Government officials that were doing the negotiation such as the District Officer, et cetera. When it came to us asking about the agreement, they said, “FEA is running the thing now.” FEA does not know anything about this agreement that they had raised.

MR. H. PATEL.- Mr. Chairman, can I answer the question?

MR. CHAIRMAN.- Yes.

MR. H. PATEL.- Let me tell you, that is not an issue you are certainly relating to one particular issue, that does not justify our unit, Sir. Let me tell you what the Department of Energy does is, they are the ones who decide which area is to be reticulated first. How many people in that area? All we are given that information, we have absolute liaison between the two divisions; EFL and the Department of Energy. They tell us that this is the area, these are the 50 customers, this is the plan, these are the names. As far as the way leave is concerned, we assume that these people because they want electricity, way leave is going to be an easy issue. Why will they object to EFL planting their power poles because they are going to be the beneficiaries.

So between EFL and the Department of Energy, we co-ordinate the way leave. Generally it is left to us because under the Electricity Act there are certain places, we can obviously in the road reserves and all, we can put out power poles but if it needs to enter into private property, for the private property’s owner, obviously why will he object but we then consult him and say, “where do you want the power pole to be?” Sir, I do not see any difficulty, we have not had any difficulty in executing so many hundreds of schemes that we have done. EFL within our resources which are properly allocated in track, as the Government started pumping in more money towards the rural electrification, we had to increase our resources.

Let me assure you, Sir, that the amount of people that are doing way leaves, we had to bring in more Way Leaves Officers because there are more projects and more money coming in now. We had to increase our resources, in fact the contractors at one stage, we had only half dozen of contractors, today we have 20 contractors because we have to build many, many more

schemes. So if you are trying to see whether EFL has been effective in constructing and executing these schemes, I am very humbly saying “yes, Sir we have been”. We agreed to a programme and we deliver the programme. What department in EFL, we all contribute, we do not have a unit per se; that is not the right way to go because we need to do build many power lines. A commercial customer also come to us, we do almost about 100 schemes a year for them; they are opening new factories, new buildings they also apply for power. So the same group of people are involved. You can say, “it is a unit within the organisation but we know where the Unit is, we know who is responsible for what. Thank you, Sir.

MR. CHAIRMAN.- Just for general knowledge, people also need to understand when the Department of Energy actually goes and visits certain communities like if there are 55 houses, only 50 people might actually give consent realising there was an issue previously when we actually started with the Rural Electrification, not everyone was consenting to have EFL lines connected to their houses because they had this fear of fire. When the project started they started running to the Government saying, “why only 50 houses have been connected to the grid and five have been left out?” When we contacted the Department of Energy, we found out that they were the ones who did not give consent in the first place. So it has been happening and these are some of the hiccups that came about with rural electrification at the initial stage.

MR. T. VAKADRAVUYACA.- Mr. Chairman, if I may just add to the conversation that is going on, another issue that is being looked at by the Department of Energy is the after the survey problems. When the Department of Energy goes and does the survey or takes account of people’s needs, one must understand that the target is always moving. If we went and surveyed 50 houses, within the next two or three weeks there would be two more houses coming in to be surveyed. The community is also growing and the budget allocation that goes through the process of budgeting is allocated for the first survey numbers. So, that is an issue that is also encountered by both the Department of Energy and EFL in terms of trying to sort out these problems.

MR. CHAIRMAN.- I believe the two houses that are left, they actually have to wait for another survey to be conducted. They cannot be connected while others are being connected. This is very important for the general public’s knowledge as well because they expect that if 50 are connected, they should be connected as well without realising that the budget is only for the 50 houses and not for 52 houses. That is a very important thing to note. We will move forward.

HON. A.M. RADRODRO.- Mr. Chair, just a further clarification on the funding for rural electrification. According to the explanation by the CEO, EFL does the survey and the costings then refer those costings to the Department of Energy. Can you just advise the Committee what sort of verification process or independence approach in terms of verifying the costings given by EFL that the Department of Energy uses to fund the rural electrification projects.

MR. H. PATEL.- The Department of Energy and EFL has very close affiliation. We are very transparent. When we give the quotation for any particular scheme, we do not just write and say, “we need \$200,000.” We then a total breakdown of how many power poles, what is the conductor length, how many insulators, how many fuses; sometimes it is three or four pages of each hardware that is required, the quantum that is required and the price for it. And be it known that when EFL quotes for such schemes, there is no margin. The intention is not to make money. The intention is to electrify Fiji and therefore what we do is, we do it at cost and we give them that this is the costing and this is the breakdown.

The Department of Energy has every right because remember they know how many customers are there. So when we give them a plan together with the cost, they will make sure that the plan is referring to those 50 people that they asked for and not 60 people and we have added 10 more or not 40 people when they ask for 50. So, they do their checks and balances and they have a complete breakdown as I say of quantities of material, labour, time, rates and they have every right. In the past this has happened, Sir, that there have been lots of questions raised and they have actually come down to EFL and gone into our Navision system software to see what is there. For example, when we buy anything, it goes into our inventory then our financial software automatically says what is the cost of this thing as it entered in our inventory and that is the cost that we charge when we bill the department for executing any particular scheme. So, the checks and balances are there. They have every right and they have done so in the past. PS, you might want to say a word or two.

MR. M. BELENA.- Thank you, Mr. Chair. Just to add onto the explanation by CEO. Yes, I think there has been a very thorough process in place in terms of the detailed breakdown of the quotations that are forwarded to us. I think before EFL just provide us the total cost of the project and through that discussion that we have been having with them, we have made some changes in terms of them providing us a detailed breakdown of the cost that are involved.

I believe in some cases even though we want to extend the grid to a certain place whether there is only one or two houses but the cost might be more compared to a location where there is more than 10 or 20 houses. This is because of the materials that are involved in terms of the transmission, the transformers and all the other equipments that will be used from those grid extension projects.

HON. A.M. RADRODRO.- A follow on supplementary question to what has been mentioned by the respective gentlemen. The role of the Committee is to ensure that there is maximum value for money on the use of public funds. This \$11.18 million for rural electrification is quite a big amount and knowing that EFL is just the only entity that provides electricity. So the question that I was raising initially was whether the Department of Energy conducts its own independent assessment of the cost that is being given by EFL being the only entity that is providing the electricity grid extension, say in this particular case, rural electrification?

MR. M. BELENA.- Thank you Honourable Member for the question. Yes, for the department also does its analysis with our electrical team in terms of the quotations that were provided by EFL. We also make sure that we always get value for money for the quotations that were provided in relation to the customers and the communities that will be assisted for that project. Thank you.

HON. A.M. RADRODRO.- Mr. Chairman, a supplementary question to the Department of Energy. In your process of verification and the costings that comes from EFL, do you also consider the places where the new grid extension is going to take place for rural electrification, the returns to resources owners; is that also part of your verification process of costs to what EFL has produced or is it just relating only to the grid extension?

MR. T. VAKADRAVUYACA.- Apologies Honourable Member, maybe just for clarity on what sort of benefits to the resource owners?

HON. A.M. RADRODRO.- Leasehold money or compensation where the electricity poles are placed en route to the respective settlements or villages. Do you also take those into consideration as part of your costings of the rural electrification projects?

MR. M. BELENA.- Thank you Honourable Member. As alluded to by CEO in terms of our rural electrification programme, it is something that we have agreed upon together with the communities that part of their contribution is for them to provide the access for grid extension projects and

HON. A.M. RADRODRO.- That is free of charge?

MR. M. BELENA.- Yes, so currently we do not provide any compensation for any rural electrification project especially when the project directly goes to those beneficiaries.

MR. T. VAKADRAVUYACA.- Just to add on to that supplementary question, one must understand that rural electrification grid extension goes through after the Fiji Roads Authority have built their roads. There is a chain of events that is happening so based on that progress in terms of FR extension in terms of rural communities, the next project in line is the rural electrification project.

So, based on that sort of scenario things happening under the Department of Energy and EFLs contribution to this project. There is a way leave process that is happening and also trying to meet the target or the demand or the needs of the rural communities out there and that is one of the contributions from the public or the rural communities is the benefits that they are getting through this rural electrification exercise.

HON. RATU N.T. LALABALAVU.- Through you , Honourable Chairman, thank you PS, just to help guide the Committee. I understand that the Director of Energy has been mentioning that our CEO is a different representation altogether, he is representing EFL. The Department of Energy is part of the ministry. So, I think we need to be clear with that but again PS when landowners give their consent for the power poles to be constructed through way leave, et cetera, whether it is within road reserve or touching on land that has not been paid compensation, we give it with that full understanding as CEO alluded to earlier on, we want electricity but at the same time the same electricity when the powers are being connected, user-pay kicks in. Whether it is the landowners or the people who finally receive the power, whether they are running shops or whatever, that is it. Nothing through the very generosity of the landowners, they are provided the opportunity for the way leave to be put through their land without anything being paid. Again I bring our experience in Taveuni for this. Nothing has been paid, even though we have free wiring et cetera in the village itself, but apart from other than that, user pay; whether you are in the village or outside of the village. So it is based on that and that is EFL. They have to generate income so as to sustain themselves, but in the process, where is this understanding of the role that the landowners have played, anything going back to them?

MR. CHAIRMAN.- Honourable Member, I believe we are diverging from the report itself on these lease issue et cetera. I think those questions are policy ones and it would be better if these questions can be posed in the Chamber.

HON. A.M. RADRODRO.- Mr. Chairman, I think those are relating to rural electrification funding, whether that is also included in the funding that is highlighted here by

the EFL; whether the Ministry has also taken into consideration those issues that we have raised, especially it is in the Constitution. The CEO and the PS would be very much aware that this is related to the Constitution; Section 30 on the the rights of the landowners. So how does that take into consideration the funding that you are showing, that is why I asked the question of verification of the funding.

MR. CHAIRMAN.- Yes, as alluded to by CEO, EFL is not making a single percent profit when they are doing rural electrification, because if they actually start to do so, you must realise that there is a cost transfer and then it will be transferred to the customers. Already people are saying that tariffs are high. With the cost is going up, it will again increase the tariff. As I said earlier, these are policy decisions. The best person to answer would be the line Minister line Minister in the Chamber rather than asking the civil servants who basically are just implementing the policies that are coming from the Government.

HON. A.M. RADRODRO.- I think we are just asking supplementary questions on what has been given by the interviewees. They have mentioned that they did the surveys and the costings and that is why we raised those questions whether those particular costings also include the issues that we have raised.

MR. T. VAKADRAVUYACA.- Thank you, Mr. Chairman. The Department of Energy and the Ministry requests to take the questions and we will get back to you in writing in terms of the verification.

MR. H. PATEL.- Mr. Chairman, I just have one more point to make with regards to the questions that have come. When we are constructing or extending the grid to supply rural customers, part of the line could be going through the road reserve, so that is the road reserve. Supposedly, if there are three power poles that may fall into some landowner's land, so obviously he is being asked that in order to supply you with electricity , the benefit of supplying, we will have to put a power pole out here, do you agree?. Now the choice is his. He has a choice to make, whether he wants electricity, then he has to give that land for the power pole. If you say on one hand that the landowner needs to be compensated, then at the end of the day, is it fair that you have to pay the landowner for that particular power pole, then give the free connection to them. Then the cost ultimately will come on to the taxpayers anyway. So that is the point and it is a policy decision as far as

HON. A.M. RADRODRO.- (Inaudible)

MR. H. PATEL.- If I may finish, Sir?

As I am saying, as far as EFL is concerned, EFL costs are basically to do the construction, that is all we do. As far as other matters that are concerning landowners et cetera, that is up to the policy makers of the country. Thank you.

HON. V. PRAKASH.- Mr. Chairman, one supplementary question. The first thing is, whatever work that is being done with the rural electrification, that is within the legal framework. The other thing is, the cost of energy that is supplied to rural customers are at a special rate compared to those in the urban centre or do that have the same rate?

MR. H. PATEL.- Thank you, Sir, through the Chair. The Government actually subsidises electricity to those domestic customers whose combined family income is

\$30,000.00 per annum or less. As we speak today, there are thousands of customers who are being subsidised by the Government for the electricity they consume especially in the rural areas. While the customer may have agreed that you can put your power pole out here because I want the electricity and also another important point, there was a question asked by the Honourable Member, how does the landowner benefit? When you get electricity, life totally changes, Sir. There are so many benefits, the children can study at night, people can surf the internet, many benefits, you may say those are intangible benefits but you can put a price to it.

We have seen this, that life totally changes when someone starts receiving electricity, but in answering your question, Sir, yes, there are customers, thousands of domestic customers who actually their electricity is subsidised by the Government. In fact those are first 100 units. If you are a subsidised customer that means your combined family income is \$30,000 per annum or less, you can come to EFL and say this is my situation, there are few checks and balances, you sign up and then you become a subsidised customer. So the first 100 units of your electricity consumption basically, it is almost like you pay 52 percent and Government pays 48 percent; almost 50/50 for the first 100 units.

HON. V. PRAKASH.- That means the benefit goes to most of the rural customers compared to the urban customers?

MR. H. PATEL.- I would think so, because the rural customers probably do not have that income level that perhaps the urban dwellers would have, but there is a process. Even if you are an urban dweller and if your combined family income is \$30,000.00 or less, you also have a right to become a subsidised customer.

MR. CHAIRMAN.- Thank you Honourable Prakash for that question. Yes, Honourable Radrodro.

HON. A.M. RADRODRO.- Mr. Chairman, just a comment on what CEO has mentioned about the rights to landowner's benefits. I think it needs to be directed towards the Constitution and that is the main legal authority in terms of the fair share of royalty to the landowners and that is the basis of the question that has been asked in terms of the valuation and the costing that has been given regarding rural electrification. Of course, we need electricity and when electricity comes, yes, we will enjoy it but should it be given to us at the expense of resource owners and against the Constitution which says that every resource owner needs to be compensated on a fair share on the resources that they own. That is basically the angle that we are trying to elaborate on this afternoon.

MR. H. PATEL.- Thank you, Sir. Just a final verification unless the PS wants to say anything. As far as we are concerned, basically till the landowner allows us to put the power pole, we do not put the power pole and he agrees that you can put it there at free of charge, then we do it. If they wish to levy a charge, then it is up to the Department of Energy to liaise with them. Thank you.

MR. CHAIRMAN.- Thank you. We will move forward.

HON. A.M. RADRODRO.- Just a question to the CEO, I note that the question and answers that you gave on the EFL and RE Unit, I think we have touched this question too already?

MR. CHAIRMAN.- Yes, we have.

HON. A.M. RADRODRO.- You have a section on land affairs, can you just elaborate what does this land affairs do in terms of the work that they do and probably it might give us some hindsight of what we are just talking about now.

MR. H. PATEL.- Thank you, we have a lands affairs department which is headed by a departmental head. They probably have at least close to 8 to 10 people within the Department. These are basically officers who are involved in the acquisition of land when we execute our projects, even the RE projects they are involved in, they make sure that if the power pole is going to be located in a certain location, that the landowner does not have any objection to it. If there is any objection to it then we do raise it with the Department of Energy and saying 'we cannot build the line there and supply electricity because there is an objection'. So the Lands Affairs Department's function are basically to carry out all land affair matters in the act position of land whether it is leased or price purchase on various projects. There are a number of people who are involved in this entire role. Thank you.

MR. CHAIRMAN.- Thank you. We will move forward to Question No. 4. I believe Honourable Ratu Naiqama Lalabalavu will ask that question.

HON. RATU N.T. LALABALAVU.- Mr. Chairman, through you, it is in two parts:

a) Diesel Generator Scheme

Can EFL advise on the Rural Electrification Policy and whether consultations conducted have incorporated the necessary changes? If not, why not?;

b) Solar Schemes

Can EFL explain its role on how does the Rural Electrification Programme incorporate the Leonardo DiCaprio Foundation on the Rural Electrification Funding Programme.

Especially on the second question because we found this to be quite interesting in the way you have explained the role that EFL plays and the Department of Energy and this one here seems to be on its own. Thank you, Mr. Chairman.

MR. CHAIRMAN.- Thank you, Honourable Ratu Naiqama Lalabalavu for asking that question. I believe (a) is directed to the Department of Energy and question (b) is for EFL. So we will go to Question (a) first if the Department of Energy can give a response because I do not think the Diesel Generator Scheme is directed to EFL and then we will go to EFL for the second part of the question.

MR. D.S. CHAND.- Thank you, Mr. Chairman. We will respond on the Diesel Generator Scheme first. Just to brief the Honourable Members of the Committee on the Rural Electrification Policy currently we are in the process of drafting our Rural Electrification Policy, it is still in the draft stage and we have sent it for consultation but once it is done we will bring it to Cabinet for approval. That policy will actually promote the use of sustainable and affordable electricity supply which is also in the currently policy which we have. It is just the extension of the old policy to the new one. This will include the installation of solar diesel and the wind grid system. Also the Government is currently facing out the use of diesel

generators due to the high fuel cost, lack of technical and managerial skills and high operational maintenance cost.

So just to brief the Committee, we have currently around more than 200 generators on the field. Some of these generators are currently having problems so what we have done, we have slowly installed the solar home systems on these current communities due to the reasons which I have mentioned earlier. Also for some of these communities we have also pulled the Grid Extension Programmes particularly for Viti Levu and Vanua Levu and also we are slowly doing it for Taveuni and of course Ovalau is completely done.

Mr. Chairman, for Solar Scheme in the Draft Policy there is a section which has been included also for donor funded projects. This will also include the Leonardo DiCaprio Foundation Programme. This is also an amended section in the new policy where we also encourage the donor funding agencies to come in. This section will highlight the processes and procedures to be followed before the project is implemented. This will include but not limited to the vetting of projects designed and also the operation and business model that the company intends to use. It is in the best of Government that such projects are sustainable and in line of the existing policies and plans. Thank you, Mr. Chairman.

MR. CHAIRMAN.- Yes, Honourable Lalabalavu.

HON. RATU N.T. LALABALAVU.- Just a supplementary question on that, Mr. Chair. Thank you, Director. When do you foresee the turnaround time for the implementation of the new policy? Why I am raising that is because, see for the second part of the question, money is being received. And where the money goes, that is another big story. It does not go to the treasury neither does it go to EFL. It goes into a private account, yet you are coming up with this new policy of donor funds being generously given or provided for to help communities such as we have in our country to be able to access this kind of basic necessity. Thank you.

MR. M. BELENA.- Thank you, Honourable Member. As highlighted by my colleague that the Draft Electrification Policy has been circulated to stakeholders for their comments so we should expect to receive all their comments before the end of the month before we will submitting it to Cabinet for their endorsement. So, probably we are looking at around May to have the policy endorsed.

HON. RATU N.T. LALABALAVU.- Mr. Chairman, will that affect the programmes that you have in place because when we visited Vio Island, Kadavu is already on the radar with the Department of Energy, yet it is the funds, the collection of funds. Where do you collect that funds? Where does that money go to? I thought once you are provided electricity perhaps that could be part of the new policy where the funds go to. Does it go to EFL?

MR. M. BELENA.- Thank you, Honourable Member. Something that we are currently facing especially with donor funded projects, I think, not only with Leonardo DiCaprio Foundation on Rural Electrification Funding Programme but other projects that does not come through Government or the Department of Energy, we tend to come and realise that the project is there only when the community comes back to us with complaints that there are some technical issues with the design. For us to address that, we have included that section in our revised policy to ensure that due process is followed especially where we have to engage Government or the Department at the initial stage especially during the vetting of the design and also looking at the operation model or the business model that the donor agencies or in

some cases private companies will want to use or to implement for rural communities. So, we have come up with this section with the intention to safeguard the participation of rural communities especially for these kind of projects which are not channelled through the Government machinery.

MR. CHAIRMAN.- Yes, Honourable Radrodro.

HON. A.M. RADRODRO.- Thank you, Mr. Chair. Just a supplementary question to the Director. This issue was brought up in 2014 when the Diesel Generator Schemes were found to be very expensive to the settlements or villagers who were utilising those diesel generators. The follow up audit stated that the Department of Energy will draw up and finalise the Rural Electrification Policy and that was in 2014. Are you sure that you will take up to mid-year that you will finalise this policy? Secondly, once you are in the process of finalising this policy, how long it will take, what happens to those diesel generated electricity, has the Ministry conducted any viable study to provide an alternative source of electricity or do they still continue with the high cost of the diesel generated schemes?

MR. T. VAKADRAVUYACA.- Thank you, Honourable Member. The policy's target date given under my Ministry will be completed this year; that I think is on record. I just wanted to highlight to the Committee this afternoon in terms of the progress of rural electrification in Fiji. Just for your information, what we are trying to achieve is electricity for all by year 2021 which is next year and every Fijian needs to be having access to some sort of electricity.

There is another target which is to have renewable energy by year 2035. When you look at the timelines in terms of the targets and the progress so far, it is quite a challenge not only for the Ministry but EFL also and for other stakeholders on the market in terms of making sure that Fiji is energised through electricity. While the target for rural electrification is ongoing at the moment, we look at diesel generators, we look at solar home-systems and we look at renewable energy. We are also looking at bio-fuel and wind energy. These are programmes under the Department of Energy that are all ongoing programmes in terms of trying to achieve the targets.

When you look at the current mix in terms of where we can achieve our renewable energy, we are looking at Viti Levu in terms of trying to achieve 2035 target of getting renewable energy to the people of Fiji because that is where most communities are located and that is also where the resources are in terms of hydro power and renewable energy.

So, basically when one strategically looks at it, we are trying to phase out the diesel generators that are currently here with us and we are all trying our best to make sure that where we can, we pull the energy from grid extensions and also the new technology that has come on board which is the solar home systems. I hope I have cleared the Committee with my explanation. Thank you.

MR. CHAIRMAN.- Thank you for that explanation. EFL if you have any contribution to that particular question.

MR. H. PATEL.- No, thank you.

HON. A.M. RADRODRO.- Just a follow-up to the second one regarding the answers that has been given, Viti Renewable Energy is the entity that is conducting the solar energy electrification of Vio Island and maybe you can advise us of the arrangement there, because we found out that the villages were paying so much and they were only levied so much electricity per day. They were only allowed to use so much equipment so that it can be in par with their daily quota. Can you just enlighten the Committee on the arrangement that has been made there?

MR. H. PATEL.- The Vio Island Electrification Scheme, first I will tell you about Viti Renewables. Viti Renewables is a subsidiary of EFL which has a 51 percent shareholding by EFL and 49 percent by a local company who is in the solar energy game called Synergize. So, basically Leonardo DiCaprio Foundation had allocated certain funds and there is a trust that actually operates that fund. Sir, EFL does not have anything to do with that fund neither does Synergize has anything to do with that fund. There is a trust that has been operating and the Leonardo Fund comes into a trust and there are a number of trustees.

The actual construction of the scheme in terms of the solar panels, et cetera that was done under Viti Renewables by Synergize. Synergize has the expertise to do all that, they are in that particular business. So, that was agreed. They had put their quotes and the trust had given them to carry on. That was the whole arrangement with Leonardo that Synergize will do that and Viti Renewables is a company because EFL will also ensure that basically everything is above board.

So, the scheme as you will need to understand that solar energy has its limitations. Solar energy without batteries can only supply you certain amount of electricity, depends on what the sun hours are like. So, it is not like, if you are an EFL customer, grid connected, you will have electricity most of the time unless there is a planned outage or something.

But as far as the sun solar in Vio Island is concerned, there is a certain amount or shall I say, solar panels have been installed, depending on the number of hours and that is why there is a restrictions on what you can use and how much because if some particular customer starts using more, then the other will be denied electricity because there is usually a certain amount of sun hours during the day and the panels will only generate a certain amount of electricity. There is a diesel plant out there as well to actually supplement the whole thing. But again, that cost also has to be then borne by the villagers because it is the scheme for them, and it is not a grid connected scheme. That is the understanding, so it is unlike customers who are connected to the EFL grid, they are totally different. They get their supply 24/7 unless there is an outage or something.

This one, there are totally dependent only on that solar that is on the island plus there is a diesel generator. Again, the diesel generator can run but the diesel needs to be fit in by the team out there. The villagers will have to see how they sort it out but for most of the time, if they use electricity as they had been told in a regulated manner, then they should be able to enjoy the benefits of electricity. Remember, unless you have a proper big plant, you cannot ensure 24/7 electricity and that is the reason for that, shall I say, limitations in regulating what you can use and how much you can use. Thank you.

MR. CHAIRMAN.- Yes, Honourable Lalabalavu.

HON. RATU N.T. LALABALVU.- Thank you, Mr. Chairman. Thank you CEO for that explanation. I had only hoped that that was the message that was conveyed by the Honourable Prime Minister when he launched that Dicaprio Project on Vio Island. We toured Vio Island, the Honourable Chairman led our group and the expectations, so to speak, is totally different. They were led to believe that this will be 24/7 apart from what you have just said, power supply, men can run their own deep freezers, since most of them were fishermen and they can run these small businesses from there; however the reality was totally different. It was a bit hard for them to understand that, so we came back with this feedback in mind. Now having heard that it is a subsidiary of EFL, I am just wondering about the funds that are being collected there.

MR. H. PATEL.- The funds do not come to, what basically we do is, for example, the initial contractor was Synergize and the ONM of the scheme is also carried by Synergize. So, when any payment has to be done, he will raise the invoice to the Trust, the Trust will then forward the funds to EFL and EFL will then pay him. So, EFL in anyway does not make a cent out of that, we are just out there to ensure that things move in a very transparent and smooth manner and the community is benefitting. That is our role.

HON. A.M. RADRODRO.- Mr. Chairman, just a question to the Director of the Ministry, especially with this kind of project like the one in Vio Island. What role does the Ministry play in the oversight of its implementation and the operations of this project?

MR. M. BELANA.- Thank you, Mr. Chairman and the Honourable Member. I think for the Ministry, we were part of the technical team that were involved in the vetting of the design of the project. Apart from that, we are also a member of the Fiji Rural Electrification Project (FREP) Committee which meets on a regular basis in terms of replicating the design. I think the plan on the project was to include an additional 10 sites, so we were part of the Committee that had gone through that process of shortlisting the 10 additional sites for the FREP project. Thank you, Mr. Chairman.

HON. A.M. RADRODRO.- Mr. Chairman, you are just part of the planning side not the operational processes?

MR. M. BELANA.- No, Honourable Member.

MR. CHAIRMAN.- Thank you for that. We will move forward and this question is posed to both; the Ministry as well as EFL. How do you maintain records, do you have a database or anything for rural electrification and grid extension?

MR. D.S. CHAND.- In the department we have many database at the moment. For rural electrification, let me just brief you on what projects we are doing. The first project is, we do grid extension programmes together with EFL. The second one is the house wiring programmes, the third one is the solar home system programmes, the fourth one is to implement or we have started piloting this - solar hybrid projects and the fifth one is the other renewal projects, for example, pico-hydros and all those.

For all these projects, we have different databases. Currently we have the excel database, but the plan is to have all these databases together at once. Currently we have this databases implemented in our units. Just to respond, the answer to this question, currently the Rural Electrification Unit is storing all the data through an excel spreadsheet. This is managed by two of our Clerical Officers who are manually updating each individual customer information. As

application progresses, the Department has already had some preliminary discussions with ITC on the development of a proper database, however this will be proposed as part of the Department's submission in the next budget year.

MR. CHAIRMAN.- Any reason for not considering having a database because you have been involved in rural electrification since 2017 and we are now in 2020. What were some of the hindrances that the Ministry is proposing now to have a database when we are almost on the verge of completion because as announced by Honourable Prime Minister, this Rural Electrification Programme comes to an end in 2020 or 2021, at least by next year. So, what was the purpose of not actually coming forth and having this database and just using an excel to store data?

MR. M. BELANA.- Thank you, Mr. Chairman. For the database, we have already undertaken the process of coming up with a structure; the structure of the actual database or how the database will look like. That was actually funded through a programme that we had with UNDP, the Fiji Renewable Energy Power Programme, so they had actually assisted us with the formulation or the setting up of the structure for the database. Unfortunately, that programme has come to an end. We had actually proposed for Government to provide us with a budget for the actual setting up of the database. We had proposed that in the last budgetary year for this current financial year, but unfortunately it did not come through. We will be proposing again in the next budget.

MR. CHAIRMAN.- But do you think it is practical to actually ask for the budget when we know that this Rural Electrification Programme is coming to an end? What would be the purpose of having this database now if these programmes are coming to an end because as I had alluded earlier, that by 2021 or 2022 or in the next couple of years, this programme will be obsolete, when everyone has some kind of power source. So if there is any modification to the database, we are proposing that the Ministry may use that in the future because development could take time as well.

MR. M. BELANA.- Thank you, Mr. Chairman. I think the database is a very important component in terms of storing the information and the records of all the applications that have applied for assistance through Government. Even though we have set a target for 2021, I think the programme will continue to go on taking into consideration the level of development that has been taking place especially in rural areas, new houses being built. That is why the database would be very important in terms of keeping and storing all the important information for our customers.

MR. CHAIRMAN.- Yes, PS.

MR. T. VAKADRAVUYACA.- Mr. Chairman, just to clarify that the Ministry of Infrastructure, Transport, Disaster Management and Meteorological Services is a very big ministry. This Department are sort of interlinked and related. Under the Ministry there is a Disaster Management Office that looks after disaster management and information in terms of database storage for the people of Fiji is quite important. One needs to understand the communities and other capabilities around those communities and based on that data information around disaster management. The Disaster Management Office is also going towards community based disaster management and this database will be very important in terms of village profiling and understanding what are the capabilities within that community when it comes to disaster management. Thank you.

MR. H. PATEL.- Mr. Chairman, if I may?

MR. CHAIRMAN.- Yes, Mr. Patel.

MR. H. PATEL.- How does EFL maintain its record database on Rural Electrification and Grid Extensions?

We have a very elaborate and simple system. Let me just repeat what I have said already but this will become absolutely clear. So when we are told that you need to extend the grid to supply so many rural customers, obviously we go through surveys, way leaves are obtained, we do what we call our “Path System Load Flow Analysis”, the designed approvals and then we construct the schemes. Once we have constructed and commissioned the scheme, that means now the electricity is flowing. Then as far as all the assets that we have on site (power poles) that is all collected into our Geographical Information System (GIS). So we can go into our office and open all that and we know exactly every power pole that is out in the field and where. So that is as far as our assets go. As far as these people who have already been connected, they have become our customers now. So we have all their customer database in our billing system. We know exactly everyone in Fiji who is connected to the grid.

MR. CHAIRMAN.- Thank you CEO for that answer. Yes, Honourable Radrodro.

HON. A.M. RADRODRO.- Thank you, Mr. Chairman and thank you CEO for the steps taken by EFL in terms of record keeping. Just a question - since the two institutions are under one Ministry. Do you share information in terms of the records that you do have? Can you share the resources to ensure that the limitations by the Department of Energy can be facilitated by EFL especially they have now become your customers from EFL? But in terms of solar, they are probably in the way of becoming your customers in future or at a later date because they are independent.

Secondly, the system of payment that is currently in use by those solar customers. The Office of the Auditor-General have highlighted that it has failed numerous times and therefore the customers are not charged or are not being supplied with electricity because they are not paying or they are using electricity without being properly levied the right amount. So can you just give us an update on what steps are being taken by the Ministry and the Department in terms of addressing those solar customer’s RESCO machines as they call it.

MR. T. VAKADRAVUYACA.- I will respond to the sharing of information question that was asked by the Honourable Member.

As Permanent Secretary one of the agenda that I put through to the Ministry is to ensure that the capacity building within the Ministry and also to look at the disaster management side of the Ministry in terms of the Disaster Management Office, and through that, one of the requirements through the Director NDMO is to work very closely with its stakeholders mainly EFL, Water Authority of Fiji and Fiji Roads Authority. So through this Disaster Management Policy and the mainstreaming of disaster management activities, one of the requirements is data sharing. Based on that database that is being built with the Department of NDMO and through that information sharing, the NDMO office is working very closely with Karunesh’s team through EFL during disaster management.

The target is for the Ministry to understand where all the infrastructure is in Fiji during times of disaster and during normal times also. So, this database sharing and information sharing is a work in progress at the moment with the Ministry through the Director of NDMO's office.

HON. A.M. RADRODRO.- That information sharing regarding customers are those that are only connected through FEA grid?

MR. T. VAKADRAVUYACA.- This is all the information that is with EFL; EEFL's customers.

HON. A.M. RADRODRO.- For the second part of the question?

MR. M. BELENA.-Thank you, Mr. Chair. Honourable Member, I think for the solar home system as you have rightly mentioned that in terms of the collection, just for the information of the Committee, at the moment Government have already installed more than 13,500 systems on the ground. Each customer is requested to pay \$18 per month as a rental fee on the system. We have some arrears as highlighted by the OAG Report. We have also highlighted some of the challenges that we are currently facing in terms of the collection of the \$18.

Firstly, at the moment we are doing the manual collection. So, we have our revenue collectors who normally goes out on a quarterly basis to collect the solar revenue from the customers. We have about 14 revenue collectors which have been appointed to collect solar revenue from these 13,500 customers. With that, we have 13,500 customers, so looking at the ratio, each revenue collector will be looking at around 900 customers. So that in itself is a big challenge and also the cost associated for us to mobilise our team to do the collection is also very expensive.

HON. A.M. RADRODRO.- I am sorry, just a clarification. How does the RESCO system work? Does it work similar to the cash power system?

MR. M. BELENA.- The RESCO operates in a slight different way from the prepay system. In this case, the prepay, they buy the tokens. I think for the solar system we manually collect the cash from the communities. Initially when we had started with the solar programme back in the early 2000, we were using the prepay meter but because of the modification of the design, that also changed the mode of collection. Back then we were using the DC meters. So, we have the DC prepay meters that we had installed where customers have to pay the tokens. But now that we have modified the design, we are using mostly on the AC system. I think in the market we do not have those kinds of AC meters available and that is why we are manually collecting the revenue from our customers.

I think also the accessibility, looking at our project locations. We have projects in Rotuma, Lau and all over Fiji especially for those areas which are inaccessible by EFL. So accessibility to the site is also a big challenge for us. And of course looking at the financial manual, I think as per for the financial manual, they have to do the banking on a daily basis but due to the remoteness and the unavailability of banking facilities, it is quite a challenge for our officers to carry out this banking on a daily basis especially when they are out in the islands.

MR. CHAIRMAN.- Thank you. Any final question with regards to rural electrification?

HON. A.M. RADRODRO.- Mr. Chair, just a question to CEO regarding the accessibility for recharging of the cash power system. There used to be accessible to FEA officers but now we no longer can get recharge from FEA Head Office in terms of cash power purchases. Is there any particular reason why we are no longer allowed to make purchase from FEA office?

MR. H. PATEL.- Thank you for the question, Honourable Member. Previously we used to have agents appointed at various locations and the customers used to go to various agents in the business districts whether it is Nausori, Suva or Nasinu and Tailevu also and they used to purchase this. But we have even created a better system for quite some time now, where practically in Fiji everyone has a mobile phone.

So, you can always go on your mobile phone, within the luxury of your home, because supposedly if your electricity goes off at 8 o'clock at night whatever you had purchased, that credit has expired and even at 8 o'clock at night (in the luxury of your home) you can go on the mobile phone and buy it. You will get the numbers and you can punch it in and you will have the electricity again. So, that is even better. Why do you have to come to EFL office? You can just sit in your home, you do not even have to spend bus fare ; save money.

HON. A.M. RADRODRO.- Only to the Vodafone users?

MR. H. PATEL.- Vodafone, Digicel; both the platforms. If you are a Digicel customer, you go on Digicel, or Vodafone customer go on Vodafone platform. But the agencies are still there if you want to use them. This is for people who suddenly run out of electricity credit at night, then you can always go on this platform. Thank you.

HON. V. PRAKASH.- Mr. Chairman, thank you very much. Sir, we are really proud for brightening this nation but we feel with the programmes that you have and the advancement that you have gone through and also trying to assist the customers living in the rural areas, how about your awareness programme? Are you carrying out regular awareness programmes so that these customers, especially those in the maritime areas and rural areas are able to know whereas we feel that this Vodafone and Digicel mobile phone payment and the other things that you have for the Sustainable Development Goal up to 2035 so that the entire country knows about your plan.

I am really interested to know. How often do you carryout these awareness programmes so that the people are aware with all the latest products that you have got to brightening our nation in the future?

MR. H. PATEL.- Thank you very much, Honourable Member. Firstly, I think I just want to clarify that EFL's presence is on four islands right now. We are in Viti Levu, Vanua Levu, Ovalau and Taveuni. So, these are four areas which we electrify and supply electricity to. Now, obviously whenever we connect new customers like, for example, if there is an RE Scheme in any one of these islands, before the customers get connected, once the grid is extended, my team from customer service go to these villages. They talk to these villagers, they teach them how to buy these tokens, et cetera and then also if there is no power supply or something happens to the power lines how do they get in touch with EFL, et cetera. So, there

is regular visits by the EFL team to these new batch of customers that we connect on a regular basis, that is one side of information dissemination.

Now, in terms of our big programmes, in terms of safety, et cetera we do leaflets in the bills that we send, we go on TV advertisements; there are a number of ways we are actually disseminating information but we intend to actually expand that further.

We will be launching a proper information programme regarding safety because I have seen there have been a number of electrical accidents that have happened and we want people, especially in the rural areas not to fall prey to these accidents. So, we will be launching a lot of things; we are still doing lots of pamphlets. If you go to any of our customer service centre, you will find all these pamphlets available for people to take and read and discuss with their families. However, this year once we get out of this *coronavirus* situation and hopefully we will by God's grace very soon then we will be launching a very important public dissemination programme on safety and many other issues.

Also the way on how EFL plans to become renewable. What are our plans to bring in more hydro electricity? What are our plans for more solar plants that we already have our plans, we will try disseminating information so that people are well aware of the plans. Thank you.

MR. CHAIRMAN.- Thank you very much Ministry of Infrastructure as well as Energy Fiji Limited for that particular submission. We do take note of the response that you have provided with regards to SDGs and we will go through it at a later stage within the Committee. You do not have to present yourself to present that. Final comments from OAG with regards to today's submission?

AUDIT REP.- Thank you, Mr. Chairman. We note from the submission today. From the report itself as you can see on page 7, 50 percent of the recommendations have been implemented once this report was compiled, while the additional 36 percent were being implemented. We note the main issue that is outstanding now is the policy that they will be finalising soon.

MR. CHAIRMAN.- Thank you OAG. Any final comments from EFL?

MR. H. PATEL.- Mr. Chairman, once again I would leave my business cards, I wish to give to all the Members and if they need any services from EFL, please feel free to call me. Thank you very much.

MR. CHAIRMAN.- Thank you CEO. Yes, the Ministry?

MR. T. VAKADRAVUYACA.- Thank you, Mr. Chairman and Honourable Members for the opportunity. Before we leave I just would like to close off with a final comment as the Permanent Secretary. We have in front of us some targets that we need to achieve and the energy for all by 2021, which is next year and renewable energy by 2035. That is the national target and I think everyone in this room is responsible for that target.

Based on the submissions and the questions and answers that have come through this afternoon, I already see an issue in terms of renewable energy, and there is a need for collaboration between the landowners and the Government and even the private sector in order for us to be able to achieve our renewable energy target, especially in the main islands of Viti Levua and Vanua

Levu. Based on that statement, there is a need for the rural communities to actually start organising themselves with the potential resource of renewable energy through hydro power schemes and come out and start working closely with the Government and investment partners for us to be able to achieve that target. As for the Ministry, we are here to facilitate the policy and ensuring that these targets are met. Thank you very much.

MR. CHAIRMAN.- Thank you PS for those comments. I would like to ask Honourable Nand to thank the submittees on behalf of the Committee, please.

(Vote of thanks – Hon. J.N. Nand)

MR. CHAIRMAN.- I shall now adjourn the meeting.

The Committee adjourned at 2.48 p.m.

STANDING COMMITTEE ON **PUBLIC ACCOUNTS**

**Performance Audit Report on the Follow-Up Audit
on the Progress of Implementation of Policies and
Strategies in the Fiji Forest Policy Statement 2007
(PP No. 153/2019)**

Verbatim Report
Ministry of Forestry

THURSDAY, 19TH MARCH, 2020

VERBATIM NOTES OF THE MEETING OF THE STANDING COMMITTEE ON PUBLIC ACCOUNTS HELD AT THE COMMITTEE ROOM (WEST WING), PARLIAMENT PRECINCTS, GOVERNMENT BUILDINGS ON WEDNESDAY 19TH MARCH, 2020 AT 1.05 P.M

Interviewee/Submittee: **Ministry of Forestry**

In Attendance:

- | | | |
|----|-----------------------|--|
| 1) | Mr. Pene Baleinabuli | Permanent Secretary |
| 2) | Ms. Sanjana Lal | Conservator of Forest |
| 3) | Mr. Semi Dranibaka | Director Research & Development |
| 4) | Mr. Ilaisa Tulele | Programme Team Leader Fiji REDD + |
| 5) | Ms. Deborah Sue | Director Forest Resource Assessment and Conservation |
| 6) | Mr. Mohammed Shorab | Forestry Officer (GIS) |
| 7) | Ms. Olivia Vakaloloma | Principal Economic Planning Officer |

Office of the Auditor-General

- | | | | |
|----|-------------------------|---|----------|
| 1) | Mr. Kuruwara Tunisalevu | - | Director |
| 2) | Mr. Lote Naicavu | - | Auditor |

MR. CHAIRMAN.- I welcome all Honourable Members of the Public Accounts Committee (The Committee) and the general public, who are watching from the comfort of their homes, to today's inquiry on the Performance Audit Report on the Follow-up Audit on the Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007 (Parliamentary Paper # 153 of 2019).

I take this opportunity to welcome the Permanent Secretary (PS) for the Ministry of Forestry (The Ministry) and his team. We also acknowledge the presence of auditors from the Office of the Auditor-General (OAG).

This special inquiry on the Follow-up Audit on the Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007 was established by resolution of Parliament when it was referred to the Committee on Friday 22nd November, 2019. It is part of the Committee's responsibility to gather information from the relevant stakeholders regarding the findings of the audit report. The purpose of this inquiry is:

- (1) To allow the witness to present and produce relevant documents, information in line with findings in the audit reports;
- (2) To allow Members of the Committee to ask specific questions related to the Ministry's functions as far as this audit report is concerned;
- (3) To allow the witness to respond to questions raised by the Committee; and
- (4) To provide important information that will assist the Committee in the formulation of its report to Parliament, particularly on our findings with recommendations that would be debated on.

(Introduction of Committee Members and Secretariat Team).

I request the PS to please introduce members of his team before we proceed further. Thank you.

(Introduction of Ministry of Forestry officials by PS)

MR. CHAIRMAN.- Thank you, PS. With us, we have auditors from the OAG as well. I request if they can introduce themselves, please.

AUDIT REP.- Thank you, Honourable Chair. I am Mr. Kuruwara Tunisalevu, the Director of Audit. I am accompanied by our auditor, Mr. Lote Naicavu. Thank you.

MR. CHAIRMAN.- Thank you. For the information of the general public, watching us live, I would like to just provide a brief on the report before we go into the submission proper.

The Performance Audit Report on the Follow-up Audit on the Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007 (Parliamentary Paper No. 153 of 2019) summarises the follow-up audit that was conducted to examine whether the Ministry of Forestry effectively implemented the recommendations which were made in the Progress of Implementation of Policies and Strategies in the Fiji Forest Policy Statement 2007.

The audit conducted by the OAG assessed whether the actions taken, addressed the underlying issues that led to the formation of recommendations in the initial report. The scope of the audit that was conducted by the OAG in its follow-up audit included a detailed review and analysis of work undertaken by the Ministry in addressing the initial audit report recommendations and were focussed under the following key areas:

- (1) Conservation of forests and biological resources;
- (2) Integrated forest resource management; and
- (3) Institutional framework and human resources.

For the information of all stakeholders, this is a follow-up audit. Again, it focussed on those three key areas and the findings of the follow-up audit will be discussed in this session. That was the brief on the report itself.

We will now give the floor to the Ministry because I believe there is a presentation. After the presentation, Committee Members would be asking questions and then we will get the Ministry's response. Also, the Committee Members will ask supplementary questions through me. All the answers that are provided in response to the questions are supposed to be done through the Chairman.

Please note we are live on television through the *Walesi* platform. Also, through the Parliament's website and *Facebook* pages. Regarding confidential information that cannot be given out in public, you can do so in writing or privately to the Committee. Thank you and the floor is yours.

MR. P. BALEINABULI.- Thank you, Honourable Chair. Thank you again for this wonderful opportunity and for allowing us to present to you on PowerPoint.

What we have proposed to share with you is the kind of data and information that the Ministry collected over the years. The Ministry is preparing to submit these to management for decision-making and policy decisions. The reason for presenting through PowerPoint is because we feel that the visuals and the optics are much easier to understand than someone to explain. We thought the PowerPoint will be very useful because the questions are also to do with resource management and sustainable forest management.

Honourable Members, what we have prepared for you, actually the map on the critical information that will be relevant to Fiji moving forward is not entirely from purely forestry perspective but from biodiversity perspective as well. The map has been done by our Management Services Division.

I will ask my colleague, Mr. Mohammed to go to the menu. We have got information on birdlife areas. The big circles that you see in red, these are important bird life areas. Bird life for forestry is part of biodiversity. It is important for us as we try to manage our forest resources. It is critical that we also consider all the factors that contribute to a healthy and a vital forest. Bird life information is there. We have got for you forest areas that are more than 800 metres in contours. We have got forest reserves and we have got districts or areas where we are preparing to plant. We have even got areas that we want to protect for perpetuity. I will ask my colleague to just take us through the individual data sets. Thank you.

MR. M.A. SHORAB.- Thank you, PS and Honourable Chair. The areas that you see on the map are currently all the areas that the Ministry is proposing to conserve. These are areas where we are trying not to have harvesting done.

According to forestry law, we are trying to prevent harvesting being done in areas with more than 30 degrees slope. All the information on key biodiversity areas, we are now giving this online web map to the Ministry's directors and other relevant people to use it in decision-making. We have also created 3D (three-dimensional) maps so that decision-making is easier. In this 3D map, you will see areas with more than 30 degrees of slope, highlighted in red with transparency and having an outline of red. This 3D map is for the whole of Fiji. This is just for the 30-metre contour but likewise, we have other layers too which can be used for decision-making. Thank you.

MR. CHAIRMAN.- Do you mean harvesting of any plant in those red areas are not allowed, Sir?

MR. P. BALEINABULI.- That is the way it should be because these are more than 30 degrees slope.

MR. CHAIRMAN.- Is there any specific reason for that 30 degrees?

MS. S. LAL.- Thank you, Chair, Sir. The Fiji Forest Harvesting Code of Practice is one of our guidelines. It is a standard that we observe in all logging operations. Harvesting beyond 30 degrees slopes will result in soil erosion, siltation and other problems so the guideline says that it should stay within 30 degrees slope.

MR. CHAIRMAN.- Alright.

MR. P. BALEINABULI.- Honourable Chair, the proposal is that because there is so much information there and some of them, they relate directly to the questions that we have, we will invite the Honourable Members of the Committee, if you wish to ask any questions and you want us to show it on the map then we will be very happy to do so in the middle of our presentation. *Vinaka*.

MR. CHAIRMAN.- I think we will go with this format. You can do the presentation and if anything is left out at the end then we might just interject in-between if we need any clarification.

MR. P. BALEINABULI.- Would you prefer that I start with the responses now, Honourable Chair?

MR. CHAIRMAN.- Yes. That is fine.

MR. P. BALEINABULI.- Thank you. Honourable Members, we prepared a matrix which we had just submitted about one hour ago and we apologise for that. Also, we made sure to include both the questions and the initial responses that the Ministry had submitted in earlier audits. It is just for us to make sure that we are on the same page and that we are responding to the questions appropriately.

The first question is on land use planning and forest classification. The first two columns are to do with the Ministry's responses in 2019 and status assessment by the OAG. The new question is highlighted in red. Question 1: Could an update be provided on the status of the National Land Use Plan?

Honourable Chair and Members, I would like to advise that as we speak the Ministry is yet to develop a National Land Use Plan. This is simply because developing a National Land Use Plan requires input from other stakeholders, from other agencies. However, the Ministry has under the REDD+ Readiness Project started to develop land use plans for 20 districts identified under the Emission Reduction Programme to start from 2020 – 2025. The Ministry is proposing that this work will be continued in collaboration with the iTaukei Land Trust Board (iTTLTB) and other relevant agencies.

The land use plans of the 20 districts will cover about 451,360 hectares or 24.6 percent of Fiji's total land area and we would like to inform the Committee that other agencies have actually started work on land use plans, in particular the iTTLTB. The iTTLTB has completed the land use plans for the Lami - Suva corridors on Viti Levu. They are working on the Western Division now. Also, another agency that has done a very comprehensive land use plan is the Secretariat of the Pacific Regional Environment Programme (SPREP) and this is work under the Pacific Ecosystem-Based Adaptation to Climate Change (PEBACC) on the Taveuni Island land use plan. The Ministry is proposing to work with these two agencies in particular among others like the Ministry of Agriculture, the Ministry of Lands and the Ministry of Environment to develop land use plans. What the ministry has done, as I had mentioned earlier, is to try and work on the highly degraded areas around the country. These are the areas where the Ministry intends to plant more trees. Honourable Chair, that is the Ministry's response to the first question. With your approval, if there are no supplementary questions, can I move on to question two.

MR. CHAIRMAN.- A supplementary question, Honourable Radrodro.

HON. A.M. RADRODRO.- Thank you, Chair. Thank you, PS, for the comprehensive responses you have prepared. Just a clarification. This National Land Use Plan was part of the Fiji Forest Policy Statement 2007 and since the last audit in 2014, I hope that you can clarify whether we are talking about the same plan that you are now responding to in 2019.

In 2014, the Ministry had stated that it was awaiting the Ministry of Economy to finalise this National Land Use Plan. Is this the same plan again that is now being prepared with the involvement of the other stakeholders? I am just trying to get a clear picture of whether this is the same National Land Use Plan that we are talking about.

MR. P. BALEINABULI.- I will invite the Conservator of Forests to help us answer that.

MS. S. LAL.- Chair, if I may. The Fiji Forest Policy Statement 2007 says the Forestry Department with the Ministry of Agriculture will develop and implement proper land use planning processes. So, it was given to the Ministry of Agriculture to take over the Land Use Planning Division and the Forestry Department was one of the agencies because we have forests. The land use plan being for mineral resources and agriculture, it is an inclusive management plan. The Ministry of Forestry had to provide maps of forest areas just like what Mr. Mohammed Shorab presented today. We did that and that is the one that went to the Ministry of Economy. From the Ministry of Agriculture, it was moved to the Ministry of Economy and then from the Ministry of Economy, we mentioned in one of our previous consultations that we were not aware of where it was currently sitting but the Ministry of Forestry because it was part of our policy, we decided to take ownership of it and drive it through, not the top-down process but from bottom-up by doing district level maps and then coming up to the proper land use plan.

HON. A.M. RADRODRO.- Mr. Chairman, another supplementary question and probably the OAG can also inform the Committee. When you prepared this Fiji Forest Policy Statement 2007, did you have a timeline associated with the development of the National Land Use Plan? Do you have a timeline as to when will you finalise this plan?

MS. S. LAL.- The Fiji Forest Policy Statement 2007 actually does not have a timeline so there was no timeline given to develop all these plans. There are a lot of activities that we have and it is like a wish list for the Ministry. It can take one year, it can take 10 years and it can even take up to 30 years but as you know, the Fiji Forest Policy Statement 2007 preceded the Forest Act 1992. We have it in process. One of the questions is related, it is the Forest Bill, to actually fully implement the Fiji Forest Policy Statement 2007, we needed to have our Forest Act 2016 to be in place. That is another reason why we have not been able to achieve a lot of things that we mentioned in the Fiji Forest Policy Statement 2007.

MR. CHAIRMAN.- Thank you. A supplementary question, Honourable Lalabalavu.

HON. RATU N.T. LALABALAVU.- Thank you, Honourable Chair, through you. Thank you, Madam Conservator and the PS. I seek some clarification on this land use plan. We have now heard again that it is still ongoing and the Committee fully understands the mammoth task that is involved because as alluded to by Madam Conservator of Forests a while ago that there is involvement of several ministries as well. It is a multitask thing, given that it is

still ongoing but now they have done away with some legislations that it used to look after, like for agriculture. You still got bad husbandry that used to be provided by the Ministry for Agriculture under the Agricultural Landlord and Tenant Act (ALTA). The Ministry of Forestry and NLTB (now iTLTB), they do the identification and all that. Well, with ALTA not being there now, how have we progressed on this aspect of looking after these bad husbandry issues especially to do with your 30 degrees vertical inclination there.

MR. P. BALEINABULI.- Thank you, Honourable Chair, through you. We wanted to show you the kind of information that we have collected to date and for us when we have this kind of information, the next step for us is to share it with our other stakeholders so that we could get the land use plans done. For forestry, you were absolutely correct, Sir, because it involves multi-stakeholders, the least the Ministry of Forestry could do is get the information on its areas of influence and that is what we are compiling until now so the very next step for us is to share with our other stakeholders. Thank you.

HON. RATU N.T. LALABALAVU.- Further to that, Honourable Chair. Through you, again. Thank you for the reply, PS. If you could elucidate a bit more on that just to guide the Committee. My question is kind of centred on, now that there is no longer ALTA, how do you wish to continue with this to ensure that it is part of the new land use policy that you have. How do you police it and ensure that things are complied with under the legislation? I really do not know what legislations you are going to be thinking of here in terms of ...

MR. P. BALEINABULI.- Thank you, Honourable Member. I will invite Mr. Tulele to enlighten us on that.

MR. I. TULELE.- Thank you, Honourable Chair and Honourable Member. With what is being discussed, this is one of the wish lists that we have. The Honourable Member will agree that we really do not have any jurisdictions on land use planning but now we are looking at not only managing forests. We would like to really manage landscapes and land use. The way the maps have been produced actually looks at landscapes and that is the best we can do. The slopes that have been mentioned, the standards that are put in, like what the Conservator of Forests had mentioned too, is to prevent siltation. Our main focus is water sources. That is the whole reason why we are looking at landscapes. From water sources will come life, will come forests, so to answer the question, we do not really have the jurisdiction. That is probably the reason why we have not been able to progress the work that we stated in the Fiji Forest Policy Statement 2007. It was something that probably came out of some consultations that we had with line agencies like the iTLTB and the Department of Lands. We were quite excited about having to put our issues forth because probably the Honourable Member will appreciate the difficulty that we have been having in trying to manage the forests.

As you know the land boundaries and the tenure system are beyond us. We only look at the forests and what is on the land but when it comes to ownership and property rights, those are things beyond us. Hopefully while we do this, we would be able to take in and invite all the

other sectors that come in to participate in this exercise, to also bring their issues so that it can be captured under landscape approach. I think that is the best bet for Fiji moving forward, given the current situation we are under. We only have about over 50 percent of our forest cover left so there are some really drastic steps to be taken if we are going to try and combat what we are facing right now. Thank you, Honourable Chair.

MR. CHAIRMAN.- Yes. Honourable Member, a supplementary question.

HON. RATU N.T. LALABALAVU.- A supplementary question, Honourable Chair, through you. Thank you, Mr. Tulele. The concern that I am raising on behalf of the Committee has to do with this ongoing policy. It is a very important policy because it is there, it links and interlinks with other legislations as well.

My concern is, there is no longer ALTA there, there is no longer the tribunal that seeks to kind of listen and adjudicate on issues where a certificate of bad husbandry is being provided by experts in the Ministry of Agriculture. Do you feel that there is a need to have something like this in place, PS? A mechanism in place to replace the tribunal so we could hear and adjudicate on issues of bad husbandry and all that.

MR. P. BALEINABULI.- Thank you, Sir. I would like to enlighten the Committee that despite the removal, as you say of some of those legislations, there still exists the relevant policies directly related to each of those agencies. Also, there is a Natural Resources Committee and this is where the Ministry of Forestry is proposing to use, to share the information on forestry so that other stakeholders could add in their bits and ultimately we need to drive it towards having the National Land Use Plan.

HON. A.M. RADRODRO.- Chair, just a supplementary question to the PS. The answers that you provided highlighted land use plans of about 20 districts. It will cover 451,360 hectares or 24.6 percent of Fiji's total land area. Would you be able to inform the Committee about the districts that you highlighted?

MR. P. BALEINABULI.- We will share it through the map. Thank you. These are the areas highlighted in yellow, Honourable Chair.

HON. A.M. RADRODRO.- Can you also advise whether this is in collaboration with the REDD+?

MR. P. BALEINABULI.- Absolutely, Honourable Member. That is correct.

HON. A.M. RADRODRO.- Could you just elaborate further on what is this REDD+ and how does it benefit the resource owners?

MR. P. BALEINABULI.- Thank you. Honourable Chair, I will invite the programme team leader to do that. Thank you.

MR. I. TULELE.- Honourable Chairman, thank you. I thank the Honourable Member for the question. The REDD+ Programme began way back in 2009 where we were starting to develop our policies. We came up to a status where we were ready to take on some of the REDD+ activities and we were given an observer status.

In April, the Fiji Government will be signing the Emissions Reductions Programme Agreement with the Forest Carbon Partnership Facility under the World Bank. That work has culminated in that signing but the work started way back in 2009 where we started putting together our policies on the REDD+ activities. Now the REDD+ activities, Honourable Chair, are basically just tree planting, better sustainable management of our forests and land resources. The REDD+ acronym actually stands for Reduction of Emission from Deforestation and Forest Degradation. Now, the distinction between deforestation and degradation for the information of Honourable Members, deforestation is the complete removal of trees from an area while forest degradation is the reduction in the health of the forests through the removal of certain trees. It still retains its forest look but the health has been degraded.

There are a lot of problems associated with the two at different extents. The REDD+ is actually under the United Nations Climate Change Convention. It has come up to a point now that globally they are willing, it probably started way back with the Kyoto Protocol in the 1990s but now they are willing to start recognising that there is a possibility to trade carbon.

Fiji is in a very good position. Although we are not a big industrial country like the United States of America and China where production is at an alarming amount, the benefit we have is that we have already done a lot of work in the past that will enable us to establish sinks to take in these greenhouse gases which includes carbon dioxide, nitrogen oxide and carbon monoxide. Those are very toxic greenhouse gases. This agreement that we will sign in April is actually with the Forest Carbon Partnership Facility. It allows us to trade-in carbon and we have pledged that we will create carbon sinks to sequester about 2.5 million tonnes of greenhouse gases. There is a contract value that has been agreed upon and there is a contract period from 2020 to 2025. The areas that you see on the map, these are the areas that have been designated under this agreement where work will be done, monitored and verified. They will be verified and sent back for verification by the World Bank or the Forest Carbon Partnership Facility. Once that is verified on the ground then it would be sent up and payments will be made. There are compensation payments that are result-based. If I may, just to explain the activities, like I said the activities are basically tree planting, so we are just planting trees in areas that are barren. We will be protecting forests or forest reserves. Also, we will be working with the Ministry of Agriculture to try and improve their agricultural systems that includes planting of trees. For example, our cane belt areas. One of the problems that we always encounter with cane belt areas are fires during harvesting seasons. The reason being because

there are no actual firebreaks that can prevent or to work as firebreaks that prevents a fire transferring from one plantation to the next. We are proposing as an example to put in trees, big leaf trees that can at least break the movement of a fire. That is just an example.

There are other examples like beef cattle farming where there is no shade trees, where you can include shade trees or fodder trees. These are some of the carbon establishment or carbon enhancement activities that we are proposing. The key to this is that we have to plant enough trees that can be captured by the satellites. Everything will be done by remote sensing from using the satellites but there will be field verification work done on the ground to actually verify the maps that we send up. The remote sensing technology we have now, they can actually come down into your house so if you are saying that you have planted a certain number of trees that form a forest then it should be picked up and it should be verified on the ground. There are other definitions but that would probably prolong the explanation. I hope that the Honourable Member will get the gist of the explanation that I am providing. Thank you.

HON. A.M. RADRODRO.- Through you, Chair. Thank you very much, Mr. Tulele. Just a supplementary question. You mentioned about the workings of the REDD+ to concentrate on protecting forests and forest reserves. Did I hear that correctly? Just on that listing that you have there. What about water catchment reserves in Savura, Sovi Basin and Colo-i-Suva to name a few. There are other similar catchments around Viti Levu and Vanua Levu. Are they not included in your lists? What are the plans for those particular areas?

MR. I. TULELE.- The 20 sites that I am mentioning here are sites that we had pledged to the project, to the Forest Carbon Partnership Facility but that does not prevent us from doing work over and above what we pledged. We are only pledging 2.5 million tonnes. Anything that we do over and above that can include Savura and all other areas.

HON. A.M. RADRODRO.- Is the monetary value associated with the pledge?

MR. I. TULELE.- Yes.

HON. A.M. RADRODRO.- That is basically what I am trying to get at.

MR. I. TULELE.- The contract value that we have agreed with the World Bank is US\$5 per tonne. For the 2.5 million tonnes that we are proposing to sequester will amount to about US\$12.5 million. If we do that over the five-year period, there will be three verification periods done within those five years. If over the five-year period we sequester or we prepare or we establish carbon sinks more than 2.5 million tonnes, we will be compensated for that. There is also an amount that we have agreed but all these details are being finalised and once we sign off on the agreement then I think we can confirm the contracted figures.

HON. A.M. RADRODRO.- Is there a possibility that these three areas that I have highlighted, Savura, Sovi Basin and Colo-i-Suva Park would be included in your listing?

MR. I. TULELE.- Yes, that and any other area. The 20 areas identified are where the most marginalised communities reside in and they are the ones that are most threatened by deforestation and forest degradation. They live in amongst the forests. We want to help them have an alternative source of livelihood so that they do not continue to harvest and these areas are very susceptible too to some other problems that we are encountering now. If we can establish that on the 20 sites, hopefully it will resonate nationwide.

Regarding the issue of land use planning that we were initially talking about, it is something that we would like to do in these 20 areas so that it can be accepted nationally. I must make this note that land use planning is also being done at village and district levels. Although I do not know if it is formally accepted but it is something that they accept as the way going forward for them to be able to manage their resources better, hopefully through this programme.

We were quite excited about this REDD+ Programme because it is actually going to help us with some concept. Since I started way back in 1992, we have been grappling with sustainable forest management. It has been very difficult for us to try bring it down and anchor it on the ground but now because we have an alternative source of generating income and then there is external funding that will come through, that would be an opportunity for us to try and promote this. We can promote land use planning, we can promote good husbandry for the agricultural areas and we can promote our sustainable forest management.

MR. CHAIRMAN.- Thank you. Honourable Lalabalavu.

HON. RATU N.T. LALABALAVU.- Chair, through you. Thank you for that well-detailed reply, Mr. Tulele. First of all, I might declare my interest on seeing Taveuni there. This is an interesting case, Honourable Chair. I raised this with the Energy Fiji Limited (EFL) yesterday and we ended up having a talk on the sideline here, myself and the CEO.

But again, the Taveuni one, you already have it, Mr. Tulele. You have a lease there, covering the whole and it is to do with protection ever since the lease was given. The landowners, one way or another are affected by it as well. So, following on the question raised by Honourable Radrodro, my question on this Taveuni one is, here you have a part of your lease being taken over by the hydro scheme there, a higher return usage, technically I do not know, the catchment area will be as you have indicated, that is another kind of forest management but the specific use for which it was given to the government by way of a lease, by the landowners has changed hands. It is now being taken over as a water catchment area for the hydro scheme, a higher return, very high return investment made by government on this particular protection forest area. How do you explain this in terms of having areas that are

already with you and yet you allow it for a higher use? It comes back to the question that was raised by Honourable Radrodro about the return to the resources owners especially on page eight of the performance audit here that 80 percent of all forest lands are within *iTaukei* land. That is the question that I would like to raise. Thank you, Mr. Chairman.

MR. I. TULELE.- Honourable Chair, yes. Taveuni is a very special case, Honourable Member. I was told just yesterday that it has been leased. In my former work life when I was managing the Global Environment Facility – Pacific Alliance for Sustainability (GEF – PAS) Project, this was one of the project sites, an area quite unique because of its biodiversity significance. The other unique thing about it is that it is the life for the entire island. If something was to happen to this area, the worst-case scenario would be a total breakdown of the whole island structure. As a result we would probably need to relocate a lot. There will be a lot relocation done. That is why the reason, going back in 1914, this was one of the first areas to be declared a reserve under the forest ordinances back then. The management has transferred and we have inherited that but when the Honourable Member says that it was leased, I am a bit uncertain mainly because if the Forestry Department had a legal lease then another lease would not be issued over that. That is the way I am looking at it.

One of the problems that we have been encountering with this area is the encroachment of the local farmers into the reserves. If you go up to the area, you will note that based on the last survey in 2015, about 122 hectares of area within the reserves have been found with taro. We were talking with the iTLTB back then and they said that it was still being declared. There was no formal lease issued over it so that is the area that is a bit grave to us right now. But to get back to answer the question, the reason why we have designated this area as one of the sites, is because of the fragility of that island. We would like to have a formal lease placed over it, with proper management plan developed with the communities that can co-manage the area. That is the whole the idea behind management plan.

With the EFL sitting on one portion of it, we did a survey way back in 2015 when this was happening. The key is that the integrity of the forest is still intact. They are just sieving off the water that runs off from there but there is a possibility and I think that the people of the chiefly island of Taveuni are quite blessed because now they can have two sources of income. The issue is a matter of consultation and discussion where they can coexist. They can use it because we understand that over there, it is probably the only source of electricity for the island, given the high cost of diesel for running the generators, so it is the matter of discussion and consultation. The best-case scenario is to have EFL lease the entire island because the forest would be their source of water energy and then you could still trade. That would be the way forward, Honourable Member.

HON. RATU N.T. LALABALAVU.- But again, the concern that we have, Chair, through you, is that we had issues. We are being paid an annual sum and I do not know what you want to call it. Is it an annuity through a lease? You have a legal contract there, we have

the blue line as you have indicated, there has been some encroachment and the traditional leaders have been approached by the officials for us to ensure that we protect this. But again, when it comes to these high hills, that is the issue here. We have given it with lots and lots of good understanding as this protects the island, given the altitude and the topography of the island. If we are not careful, all the fertile land will be out there in the sea in a very short while. But again, when you change the use and I am specifically, Honourable Chair, asking the PS here, because they hold a lease here and I am surprised that Mr. Tulele, he was my working colleague in the Northern Division at one time, knows this place that they do not have a proper lease or something. Again, the only issue I had is the change of views. We are glad that hydro is there, we are getting lease monies but a fair return. The Constitution was amended last year or the year before.

HON. A.M. RADRODRO.- In 2013.

HON. RATU N.T. LALABALAVU.- In 2013, to put in this particular thing of fair share of returns that should go back to the landowners. That is the point that I am kind of driving at here. I am sorry about that. If you cannot provide an answer, I hope they take note of that.

MR. P. BALEINABULI.- Thank you. Honourable Chair, if I may. I propose that we take note of the comments. Fair returns are something that the Ministry of Forestry is also trying to look into and we hope that we will be able to enlighten the Committee at a later stage when information comes to hand. *Vinaka*.

HON. A.M. RADRODRO.- A supplementary question regarding this to probably give closure to the question that we have on land use plans. Can the Ministry of Forestry give us a timeline as to when it wishes to complete these land use plans stated in the Fiji Forest Policy Statement 2007? I do not see a timeline here. Will this remain like this or will it still be in the pipeline or will it come to a proper document at some time in the future?

MS. S. LAL.- Chair, if I may. I think this issue has been discussed over the years so many times. I think it is good to get it right now so that we can move forward according to the Fiji Forest Policy Statement 2007. This is the document that is raising so much controversy on the land use plans. This policy talks about the land use plans not for the whole of Fiji and not for agriculture land. It talks about preparing land use plans at national, provincial and district levels. The Government will identify areas of land which are best- suited for long-term, high value forest production, so the maps that you see, which are the areas that are good for forest production, good for afforestation, which are the degraded areas, the REDD+ areas and land rehabilitation. Also, forest protection and conservation, so as mentioned by the Honourable Member, the Sovi Basin and other water catchments, those are high value conservation areas.

Basically, the Ministry of Forestry is tasked to produce land use plans on how we manage these forested areas and the areas that already had forests before but are degraded now because agriculture has its own classes, it has its own land use classes but this is just what we will be requiring, so in future if there are other questions then we can produce an improvement on this and say that these are the areas that have been classified as commercial forest areas. These are the areas that are classified as protection forest, so basically that is what these land use plans will be all about.

As far as timelines are concerned, this year we will be doing our National Forests Inventory. There is another question based on that and once we know what we have then we will be able to proceed. I cannot commit myself and say that this will be the timeline but it may take a few years to get that right.

MR. CHAIRMAN.- Thank you. Considering the time now, we shall move forward. I believe we have around 24 questions to go.

MR. P. BALEINABULI.- Thank you, Honourable Chair. The next question is about awareness programme. Question 2 - How is the Ministry doing in terms of providing landowner awareness and also getting the resource owners to provide meaningful contribution to land use planning and forest certification in the absence of a Memorandum of Understanding (MOU) between the Nature Fiji Mareqeti Viti (NFMV) and the Ministry? Are there incentives involved?

Our response is that the Ministry's extension and training division has been undertaking awareness as part of its core responsibilities. Apart from face-to-face awareness and consultations in the communities, the media is also widely used to promote and advocate awareness on the work of the Ministry and as you may have heard over the media, the Government through the Ministry is coordinating the planting of 30 million trees in 15 years. This is an example of the Ministry's effective outreach and some examples of meaningful contribution from landowners are prevalent in the Ridge to Reef (R2R) Project. This is another programme that the Ministry is implementing with other stakeholders. The Reforestation of Degraded Forests (RDF), Sandalwood Project and REDD+, all involve incentives in the form of some cash for work. We pay people to do some planting and assist with alternative livelihood sources. Last week we opened a shrimp pond in Rewa as an alternative to harvesting mangroves. Training, capacity building as well as village development projects, so these are some of the incentives that are involved.

Another question within the same topic. Are there measurable targets in place to undertake this? The response is yes. Measureable targets include the number of trees that are being planted, the areas of degraded forests that are reforested, the number of communities consulted and the responses from the communities which are widely broadcasted through social media as well.

There is a further question. Can the Ministry provide an update on the status of the NFMV and other stakeholders awareness? I am happy to inform the Committee that the Ministry works closely not only with NFMV but with many other Civil Society Organisations (CSOs) in the conservation and the environmental areas such as Conservation International (CI), International Union for Conservation of Nature (IUCN), Wildlife Conservation Society (WCS), National Trust of Fiji, the Soqosoqo Vakamarama and Grace Trifam Ministry. These agencies promote conservation and biodiversity enhancement in collaboration with the Ministry of Forestry. They are also part of the protected areas committee which is chaired by the Ministry of Environment and the Ministry of Forestry is a member of that committee. All conservation efforts are addressed through this committee.

Honourable Chair, the latest development is that the Ministry has got draft MOUs with NFMV, CI, WCS and IUCN. These are ready for the consultation phase before we submit it to Cabinet for approval. Thank you, Honourable Chair.

MR. CHAIRMAN.- Yes, Honourable Nand.

HON. J.N. NAND.- Thank you, Honourable Chair, Sir, through you. How much progress have we made so far with regards to the tree planting initiative?

MR. P. BALEINABULI.- Thank you for that question. Honourable Chair, the million tree planting is not entirely new to Fiji. The Government had accomplished the million tree planting in 2013. Prior to that it had done pine and mahogany plantations. The hive goes off to Fiji Pine and Fiji Mahogany Company Limited, so this is actually a renewed effort to tree planting.

I am happy to advise that last year, His Excellency, The President launched what was initially the four million trees in four years programme. Within 10 months of that launch in January, by October, the coordination done by the Ministry and members of the communities, basically people from all walks of life including visitors alike, planted one million trees in 10 months. It was a massive achievement but importantly because of the work of the REDD+ as we had shown you, we have identified about 40,000 hectares of highly-degraded areas. The Ministry has informed the Government that these areas based on the calculations of the type of trees to be planted, we could plant about 30 million trees in these areas. That is the new target for us and that has started already. I am also happy to advise that since January to date we have planted over 200,000 trees. We are on track to meet the target of two million trees by the end of this year.

MR. CHAIRMAN.- Yes, Honourable Prakash.

HON. V. PRAKASH.- Through you, Chair. Indeed, we are very proud to hear about your reforestation programme and planting of trees. Could you explain what varieties of trees you are concentrating on in your first year and what are the other ideas that you are trying to put into our country so that those trees will be beneficial to our future generation? Thank you, Chair.

MR. P. BALEINABULI.- Thank you, Honourable Member and Honourable Chair. Last year we planted one million trees, 80 percent of those were commercial species like pine, mahogany, teak and sandalwood. It was done for very obvious reasons because we need to help grow the economy. That was the kind of decision that was put into the types of trees. The other 20 percent included indigenous native species but this model, this formula is not set in stone.

In fact, the Ministry would prefer to plant a lot more indigenous species that is endemic to Fiji and unique too to Fiji, so we have those kinds of approaches right now. We know that we have to grow trees and protect forests to enhance biodiversity and address climate change. We also have to address socio-economic growth, so that is the kind of approach that we have. As we move we will try to continue to review and see the type of trees, the species that should be planted.

HON. V. PRAKASH.- A supplementary question on the same line. We are in fact very proud to see that you are concentrating also on indigenous and endemic trees. Are you considering having nurseries in the rural sector where people could be taught on how they could maintain these nurseries? I think history tells us there are people who are very well-versed with those indigenous endemic plants and so far, we know that all the nurseries controlled by your Ministry are normally in urban areas. My concern is whether you are considering to put these nurseries into places where rural dwellers could be taught the art of trying to produce seedlings and also to replant them?

MR. P. BALEINABULI.- Thank you, Honourable Chair. Honourable Member that is a very good question to us. In fact, the act of tree planting, the view is that it is not to be done by the Government alone. We need active involvement of the communities, so engaging the communities to have their own nurseries is part and parcel of the thrust of this tree planting initiative.

I will invite the Conservator of Forests to add on to this but in brief the answer is yes. We would like to encourage a lot more communities to establish nurseries. The Ministry is positioning itself to help these communities by teaching them how to develop nurseries and look after the plants. Actually build the nurseries for them as well and eventually the ultimate goal is to facilitate economic empowerment for the communities so when the seedlings are ready, the Ministry is preparing itself to buy those seedlings. That is the kind of arrangement that is already taking place but we would like to do more. We have established more than 100

community nurseries and we look forward to establishing many more. Also, to include youths and women groups as part of community outreach. I will now invite the Conservator of Forests to talk to us about the species. You were right about the kinds of species that we need to raise in the nurseries.

MS. S. LAL.- Chair, Sir, if I may. With this initiative of 30 million trees in 15 years, we realise the humongous task of trying to source seedlings so what we did was, we worked closely with communities. We have done capacity building. We have given them some resources like sarlon shade cloth. Also, we have provided them with soil mixes in some cases and structure for the nurseries. There are over 100 community nurseries now and we are actually buying seedlings from them to plant on their land or other lands. We have encouraged the business community to go to these communities and buy seedlings from them for their corporate social responsibility. Under the Fiji R2R Project, I have the executive director here, he can explain more on how the Fiji R2R Project has actually worked with communities. How communities have benefited? Also, I would like to mention that most of these community nurseries are run by women because they are the ones who stay home. Rewa is a very good example. We have the International Tropical Timber Organisation (ITTO) Project in Rewa where we are assisting six communities and have built six nurseries. This is an alternative livelihood for them too. Whenever we need to go and plant, we use seedlings from Rewa to plant in Naitasiri and Tailevu areas. That is the amount of capacity building we have done. Mostly these community nurseries grow native seedlings, indigenous trees and those that are already on their land. For instance, Rewa has got *ivi*. They are providing us a lot of *ivi* seedlings because they have it in abundance and we also get fruit trees from communities. The species likes mahogany, pine and teak, we are sourcing it from commercial companies because we need that in large scale. It is for development purposes, it is like our future industries and there is a lot of demand by landowners to have these species planted on their lands. The R2R Project has greatly assisted communities and I will let Mr. Semi explain to that effect.

MR. S. DRANIBAKA.- Thank you, Mr. Chairman. In addition to what the Conservator of Forests mentioned, under the R2R Project we identified areas in Vanua Levu, the Western Division and the Central Division. We have mostly concentrated on water catchment areas. Also, engaging communities in those areas to raise seedlings and work with them in terms of replanting. Apart from that we encourage them to collect seeds, to be able to get seeds, we go and procure from them, encourage them to protect most of the seeds. Thank you.

HON. V. PRAKASH.- Another supplementary question. Suppose if a group of rural dwellers or landowners are interested to have their own nurseries and they need to work with your Ministry for the future development of the trees that we very much need. How would you allow them to approach the Ministry or you? It can be through awareness or can they come, perhaps write to you so that you can accommodate those wishes of the people who are especially in the rural areas.

MR. P. BALEINABULI.- Thank you, Honourable Member. Honourable Chair, that is the expectation. The Ministry will be ready to work with any community that wants to be a part of the tree planting initiative. As we mentioned earlier, we are willing to teach them, help build their nurseries and even monitor. We want to set the standards for nurseries and we want to certify these nurseries, so there is a formal process. That is the kind of work that the Ministry would like to do with the communities.

MR. CHAIRMAN.- Thank you. Honourable Lalabalavu, you had a supplementary question.

HON. RATU N.T. LALABALAVU.- Yes. Thank you, Honourable Chair, through you. Maybe I am jumping the gun here but it is to do with parks. You did explain a bit on the role of NFMV, they have been doing a great work, PS but again, they have taken us on two-horse to Sovi Basin areas and all that. That is all but it does not stop people from unscrupulously harvesting the very thing that you have mentioned, the flora and the wild life we have up on the hills in Taveuni because when it is graduation time, that is when *tagimoucia* flowers. You would be surprised, PS and Honourable Chair, they find *tagimoucia salulsalu* here in graduation ceremonies right throughout, even right to the west and interestingly you see people with gumboots going right up to the hill to hack down the trees without giving any thought to these creepers, this flower, so in your plans on this together with the Sovi Basin and then coming into fruition of the parks because right now we cannot stop people from accessing the forest, very soon the wild life will take off from there as well and we cannot stop them. The NFMV has been doing a great job in terms of awareness and that is all but we would like to police this, beginning from the Bouma side down to Somosomo side. Interestingly we cannot stop them, we do not have the legal powers to do that. We could stop them as landowners but some of the landowners get paid-off especially when it comes to the harvesting of this very important flower.

How does the Committee look at this in terms of having parks, this legislation of parks to come in as part of your land use policy or another new legislation to kick in, so at least you have park rangers there that are legally empowered to police certain areas especially in the protection of flora and fauna? Thank you, Honourable Chairman.

MR. P. BALEINABULI.- Thank you, Honourable Member. Honourable Chair, establishing parks and of course, looking for resources to manage the parks are also part of the Ministry's plans moving forward. You are right about NFMV. In fact, we believe that a lot of these CSOs have been doing a lot of good work and what we wanted to do is to reach out to them to form these partnerships. Then together, we now need to look for resources as well, the resources that will enable us to better manage these parks.

The Ministry has as part of its plans the thinking that we should establish a lot more rainforest parks. They provide alternative livelihoods and if we do that, we will definitely have

the resources to manage those parks and reduce illegal activities. Reducing illegal activities are some of the challenges that the Ministry faces and I am sure other agencies face too. The Ministry can do what is immediately within its control and I am happy to share with the Committee that the Ministry has dedicated about 60 percent of all its resources for this financial year towards doing two things. These include leading and coordinating the tree planting programme, also effectively implementing the regulatory role that is under the Forest Act. That is something that we are continuing to do to improve and we are seeing some improvements in this area but it does not take away the fact that we need to collaborate with a lot more organisations, not just the Ministry. Thank you, Honourable Member.

HON. RATU N.T. LALABALVU.- Honourable Chair, through you. The issue of having parks as an umbrella law looking after these protected areas and then it allows setting up of forest guards to operate there legally and collect funds. For people to utilise the facilities out there, that will not eventuate very soon.

MR. P. BALEINABULI.- On the contrary, Honourable Member, we have one already operating at Colo-i-Suva and that is working quite well. We want to replicate that quite quickly around the country. I will invite my colleague Ms. Deborah Sue, she is the director responsible for the management of these forest reserves and the Colo-i-Suva Forest Park, just to talk to us a bit about the plans.

MS. D. SUE.- Thank you, PS and Mr. Chairman. For our parks, we are developing them. A lot of it is also based on forest appreciation, awareness of their resource and it takes quite some time to change attitudes but we are working with CSOs and line Ministries for that. We envisage having layers of benefits. For example, we secure the land with a conservation lease and then we are having payments for ecosystem services of which carbon sequestration is one. We are still developing the systems for other ecosystem services. For example, for water which a lot of us take for granted. You mentioned Savura as an example. That is under the management of the Water Authority of Fiji (WAF) and for the last three years, they have been paying \$120,000 for that Savura lease. We have a Savura lease as well on the other side of the valley. We are going to review those leases including the Colo-i-Suva lease and all other leases that we have but we look forward to expanding those areas. Also with the key biodiversity areas that we had up earlier including the important bird areas and other conservation areas, the CSOs, so that we keep our forests and have them because it is in the native forests where the carbon is best kept. It is the best source for carbon that we already have, so we are looking now for layers of benefits. It may not be always in cash but also for example, we see that for diseases like COVID-19, having this best diversity, biodiversity areas is protection against those diseases as well.

It takes time to develop these and also it comes, sometimes people are only convinced when they go through the bad experience. We have been talking about sustainable forest

management for 20 years. Now they are starting to realise that we really need that. Yes, we will jump on board with you.

HON. A.M. RADRODRO.- This particular issue is the absence of MOU with the NFMV. Has the Ministry been able to have an MOU with this institution?

MR. P. BALEINABULI.- Thank you, Honourable Member. Honourable Chair, the NFMV has just recently confirmed that they would like to proceed with the MOU. We have not done that in the past but we are working with them on that draft now and we have got drafts for the others too. Example, the CI and the IOCN.

HON. A.M. RADRODRO.- Chair, maybe the OAG can be asked to do a follow-up audit on whether this is now being confirmed after this audit, the MOU with the NFMV.

MR. CHAIRMAN.- Yes, Honourable Lalabalavu.

HON. RATU N.T. LALABALAVU.- Do you think that the NFMV will now open its office again in Taveuni? Since you do not have a MOU, the NFMV has shut down its office and left.

MR. P. BALEINABULI.- Honourable Member, I think it is to do with resources, with funding but I would like to think that when we have the MOU, we will together work towards seeking the resources and that is the next step for us. We will have to look for resources.

MR. CHAIRMAN.- There will be another follow-up audit on this.

MS. D. SUE.- Yes, even without the MOU, we are working with them. We have just put in a proposal for Germany for *Internationale Klimaschutzinitiative* (IKI) funding for next year to demarcate the boundary with the assistance of the landowners or resource owners and to paint in the blue line. As well in forestry, we have just started up drone programme and we also planned to get a much bigger drone to fly over the whole area so we can see much more clearly the areas that have been encroached from human sides, also from weeds, so we can better plan. The COVID-19 has come in very inconveniently for us. The Government resources have gone to that at the moment, so we have to postpone our plans for the big drone but we do have those in place and we very much look forward to formalising the agreement with the NFMV.

HON. A.M. RADRODRO.- Chair, I suggest maybe the OAG can do a follow-up audit around this because there is a need to have a MOU with the NFMV. Also, because of the different stakeholders involved. If you do not have a MOU with the NFMV, you would not be dictating to them on what awareness programmes it would undertaking in terms of stakeholders, whether NFMV is doing what you want it to do or whether it is overdoing or

underdoing what the Ministry wants it to be doing in terms of awareness programmes to stakeholders.

I think the need for a follow-up audit to ensure that there is a MOU because initially there was no MOU as has been highlighted. Also, because the NFMV has its own restrictions and own reasons about why it does not want to have a MOU, so maybe that is something that the OAG can do a follow-up audit on.

MR. P. BALEINABULI.- Honourable Chair, we are equally excited about the establishment of a MOU. As we mentioned, previously there were no drafts even with other CSOs and now we have progressed it to draft MOUs. We are going to take the same approach with the NFMV. *Vinaka vakalevu.*

MR. CHAIRMAN.- Maybe what we can do if a follow-up audit would take some time, the Ministry can come back to us by June this year with an update on what is happening with regards to MOU and then another update by December this year to actually inform the Committee.

MR. P. BALEINABULI.- Consider it done, Honourable Chair.

MR. CHAIRMAN.- Yes. Thank you. We will move forward.

MR. P. BALEINABULI.- Honourable Chair, next question is on forest inventory. Question 3 - Can the Ministry update the Committee on the status of the 2005 National Forest Inventory (NFI) and also when will the reports be made available on the website or publicly through other means?

The Ministry's response is that it is engaging a consultant to complete the NFI Report which will be published this year. We will, of course, use all the media platforms to promote the results. Thank you, Honourable Chair.

HON. A.M. RADRODRO.- Chair, just a supplementary question to the PS. We noted that there were three-inventory undertaken at the Ministry in 1969, 1992 and 2005. We have yet to see a copy of those. Will the Ministry also put that on the respective websites?

MR. P. BALEINABULI.- The response, Honourable Chair, is that we have the results of the first inventory and that is currently available on hardcopy but we will now make the effort to see if we can post it up on the website. The Ministry is working on the results of the 2005 NFI and that is the report that we will complete this year. We will have it published. Thank you, Honourable Chair.

MR. CHAIRMAN.- Thank you. We will move forward on establishment of procedures I believe.

MR. P. BALEINABULI.- Thank you. Question 4 - Can the Ministry confirm if Standard Operating Procedures (SOPs) have been developed for NFI? The response is yes. A SOP for the NFI exists and a copy of which is attached as part of the evidence.

MR. CHAIRMAN.- Thank you. The next question is on mangrove management.

MR. P. BALEINABULI.- Question 5 - What steps has the Ministry taken to formalise the ban on commercial harvesting of mangroves?

The response is that the Ministry has implemented the Fiji Forest Policy Statement 2007 insofar as the mangrove management is concerned. All commercial harvesting of mangroves have ceased since 2014 upon the directive and request from the Ministry of Lands which manages foreshore lands on behalf of the Government. The Ministry of Forestry no longer issues any licences for harvesting mangroves. The Ministry will now formalise the ban in collaboration with the Ministry of Lands.

There is a second question. Does the Ministry provide licence to harvest mangroves to various vendors and what is the procedure? Additionally, the Ministry in partnership with other agencies has been developing alternative livelihoods because we are not issuing licences, so the alternative livelihoods for communities close to mangrove forests. This particular project is funded by the ITTO. It is an active member of the mangrove management committee with the Ministry of Environment, the Ministry of Lands, the Ministry of Fisheries and all CSOs. The alternative livelihoods are meant to ensure that people reduced their reliance on mangroves and that will allow the mangroves to grow but going back to the initial question, the Ministry is no longer issuing licences for mangrove harvesting.

MR. CHAIRMAN.- Thank you, PS, for those answers. I believe the next part is on integrated forest resource management. There is a question on management plans.

MR. P. BALEINABULI.- Question 6 - Can the Ministry provide an update on the development of forest management plans for forest resource owners such as the Bouma Forest Park, Colo-i-Suva Park and other parks including the Sovi Basin? In collaboration with the CSOs, management plans have been developed for the following:

- For the Bouma Forest Park, the Ministry collaborated with the National Trust of Fiji. A copy of the management plan is attached;
- For the Colo-i-Suva Forest Park, this is work in progress by the Ministry. We look forward to completing that soon; and

- For Sovi Basin, the Ministry worked with the CI and the National Trust of Fiji. Again, management plan is attached.

There is a supplementary question. Do they take into account the requirements of the Environment Management Act (EMA) 2005 in the plans? Honourable Chair, the answer is yes. All management plans adopt provisions of the EMA 2005.

A third question. Has the Ministry finalised the mangrove management plan with the Ministry of Lands through the Conservator of Forests? The response is that the Ministry made its contribution through the submission of information and maps to the mangrove management committee. The Ministry will follow-up with the Ministry of Lands on the progress of mangrove management committee. Thank you, Honourable Chair.

MR. CHAIRMAN.- Thank you, PS. I believe question seven would be on strategic harvesting plans.

MR. P. BALEINABULI.- Thank you. Question 7 - Will there be any amendments to the requirements of the Fiji Forest Policy Statement 2007 to reduce the period of time required for strategic harvesting plans to be less than two years given that Table 2 of the report for the forest harvesting plan for woodlots submitted to the Ministry indicated that most harvesting activities are done within two to 12 months?

The response is that the Ministry is already accommodating this by verifying the volume of forest resources in any particular woodlot which subsequently determines the duration of licence issued. The 1992 Forest Act, Section 11 in particular has provisions for duration of licences to be determined based on the forest resources available and the post-harvest land use. The duration, Honourable Chair and Honourable Members, for issuing of licences can be up to 30 years, so additionally the Ministry of Forestry is working on creating a supportive forestry governance to enable forest management which includes the strategic harvesting plan. Thank you, Honourable Chair.

MR. CHAIRMAN.- Thank you. We will move forward to forest management system now.

MR. P. BALEINABULI.- Question 8 - How has the Ministry progressed in terms of consultation with stakeholders regarding the review of the Diameter Limit Table (DLT)? The Ministry of Forestry had clarified in its response to this recommendation that it is fully implementing the DLT legislated under the Native Land Trust Act, 1985 as it is currently the only legal DLT available for enforcement by the Ministry.

The response is that the Ministry in collaboration with the German Technical Cooperation or *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) is developing

an implementation guideline aligned to the legislated DLT under the Native Land Forest Regulations 1985. The implementation guideline has been field-tested and will be ready for implementation this year, Honourable Chair and Honourable Members. Additionally, the Ministry is currently consulting the industry on this revised version of the DLT and the consultation work programme is attached as evidence. Thank you, Honourable Chair.

MR. CHAIRMAN.- Thank you, PS. I believe we have moved to question nine. We will just change the format a bit now. I will give Honourable Members the opportunity to ask the questions and you can respond. The next section is on plantations and we will request Honourable Nand to ask the question.

HON. J.N. NAND.- Thank you, Honourable Chair, through you. The Ministry of Forestry further clarified in its response to this recommendation that it has included the development of forest management plans in its August, 2019 – July, 2020 operational plan. Furthermore, the Fiji Pine Limited and the Fiji Hardwood Corporation Limited have its own 10-year annual plantation forest management plans. Question 9 - Can the Ministry provide an update on the status of the forest management plans to cover the whole of Fiji's forest and plantation areas? A supplementary question. Can the Ministry further advise whether the forest management plan includes the management and protection of the remnant natural forests in plantation areas? Thank you, Honourable Chair.

MR. P. BALEINABULI.- Thank you, Honourable Chair and Honourable Member. The Ministry has collated data as a first step and will now proceed towards developing management plans for Taveuni and Colo-i-Suva. The Fiji Pine Limited and the Fiji Hardwood Corporation Limited have its own plantation management plans and the management plans highlighted in the operation plan for 2019-2020 are for conservation and protected areas. The Ministry has started to develop the management plans for Taveuni and Colo-i-Suva in collaboration with relevant CSOs. The development of such a plan will address the Permanent Forest Estate (PFE) initiatives that the Ministry is working on. We have provided evidence in the form of our operation plan 2019-2020.

MR. CHAIRMAN.- Thank you, PS. Next is establishment of a steering committee. Question 10 - Is there any reason why the steering committee is not able to meet regularly given the requirements under the TOR?

MR. P. BALEINABULI.- Thank you. Honourable Chair, with the new appointment of a monitoring officer who will form the secretariat of the committee, the Ministry will this year convene committee meetings with relevant stakeholders to help enforce the FFHCOP.

MR. CHAIRMAN.- Thank you. Next section is on development, endorsement and review of the Fiji Forest Certification Standard (FFCS). We will ask Honourable Prakash to ask the question please.

HON. V. PRAKASH.- Chair, through you. Question 11 - Can the Ministry explain on the progress of FFCS and when can this be finalised for Cabinet endorsement? Can you advise on the delay surrounding the formulation of FFCS? Thank you, Chair.

MR. P. BALEINABULI.- Thank you, Honourable Chair. The response is that the Fiji Pine Limited was actually certified in 2016. That is something that we can see as completed and this was through the Forest Stewardship Council (FSC). The Ministry is assisting the Fiji Hardwood Corporation Limited with its certification process. The focus is on certification of plantation forests because they are managed forests but importantly also because of the need to secure markets that now demand certified products.

The Ministry has a draft national certification standard for natural forests and will continue to improve on this through alignment to the international standards through the Forest Certification Council (FCC) and the Programme for the Endorsement of Forest Certification (PEFC). We have provided the evidence of the Fiji National Forest Certification. Thank you, Honourable Chair.

MR. CHAIRMAN.- PS, next is the charging of fees for processing and monitoring of licence. Question 12 - Can the Ministry provide an update on the progress of the fees structure provided to the Ministry of Economy?

MR. P. BALEINABULI.- Thank you, Honourable Chair. The Ministry is reviewing the fees structure that was initially submitted to Ministry of Economy and will make fresh submissions this year. The revised structure is attached as evidence.

MR. CHAIRMAN.- Next section is log scaling. Question 13 - Can the Ministry provide a copy of the finalised log scaling rule and also update on why there was a delay?

MR. P. BALEINABULI.- Thank you, Honourable Chair. A copy of the current log scaling rule is attached and is being used during harvesting operations. The lot scaling rule will be incorporated into the harvesting regulations which is currently under development.

MR. CHAIRMAN.- Thank you. Next section is environmental standards in forest management and Environment Impact Assessment (EIA). We will ask Honourable Aseri Radrodoro to ask this question.

HON. A.M. RADRODRO.- Thank you, Chair. My question, PS, is related to the Sustainable Development Goals (SDGs). How the Ministry is making itself aware of the SDGs and the monitoring of development goals within the Ministry in terms of your compliance and monitoring levels? I think this is on Question 25. The issue here is regarding the monitoring part. We had instances in the past whereby trees had been logged or fell. For instance, at the

Adi Cakobau School (ACS), the consequences of those felling. You have mentioned that the Ministry is making sure that all the licences are EIA-approved. Can you just elaborate on how well is your monitoring in terms of SDGs and ensuring that all the Ministry staff are aware of the different roles they play to ensure that SDGs are achieved in terms of the Ministry's target?

MR. P. BALEINABULI.- Thank you, Honourable Member. The Ministry developed its strategic development plans for 2017 and 2030. These have been launched. The plans encompass Fiji's 5-year and 20-year National Development Plan (NDP) including alignment to the 2030 Agenda for SDGs and the Small Island Developing States Accelerated Modalities of Action (SAMOA) Pathway including the United Nations Forum on Forest Strategic Goals which are also related to the SDGs. The initiatives in the plans are implemented annually and this is through the Ministry's annual operation plan where each staff is given a copy and their Key Performance Indicators (KPIs) are actually aligned to their deliverables. The staff are made aware of their deliverables as part of the plans through their unit plans and individual work plans, so that is essentially how we manage their performances now. Thank you, Honourable Member.

HON. A.M. RADRODRO.- Can you update us on the felling of trees on that hill at ACS whether it followed the process that you have just highlighted?

MR. P. BALEINABULI.- Thank you, Honourable Chair and Honourable Member. To start off, the felling was actually at the request of the school and it was to do with Occupational Health and Safety (OHS) issues. Some of the trees were actually threatening the safety of the students and were just above their classrooms, so the Ministry complied, responded and issued logging licences for those things to happen. I am happy to advise ...

HON. A.M. RADRODRO.- The school is part of your process that you have just highlighted whether proper EIA was undertaken on that or was it the safety issue.

MR. P. BALEINABULI.- I will invite the Conservator of Forests to enlighten us.

MS. S. LAL.- Chair, if I may. The issue at ACS, I believe it was highlighted in one of the newspapers. As the PS mentioned, the request came from the school to clear those trees. The process was to issue a licence based on an EIA as well. Due to urgency as it was cyclone season, the school needed to have those trees removed because the branches were hanging over the dormitories, so the Ministry of Forestry issued a licence to a contractor to actually remove those trees.

The environment issue came up, we discussed with the Director Environment and the EIA process, normally a screening goes first, you need to do a screening whether that particular site requires an EIA or not. The Ministry of Forestry did not follow it at that time because we were not aware of the provisions in EMA 2005 that even a small woodlot like the

mahogany at ACS required an EIA. But later we did discuss with the Director Environment and we agreed that an EIA screening needed to be done. We did that and that particular area did not require a full EIA because it was just removal of a few trees that was a hazard for students.

HON. A.M. RADRODRO.- Chair, just a supplementary question. Thank you for the information, Ms. Lal. In terms of the monetary value, was there any monetary return since it was a request from the school. Was there any monetary value associated with the felling, if it is, whether it goes to the school or goes to the consolidated account?

MR. P. BALEINABULI.- Thank you, Honourable Member. The Honourable Member is very familiar with the system in Government. The answer is yes. There was monetary value and it was put into the consolidated account. Thank you.

MR. CHAIRMAN.- Thank you. Going back to Section 15, environmental standards in forest management and EIA. An examination of the Fiji Forest Harvesting Code of Practice (FFHCOP) noted that it integrates the concept of the EIA. To apply for a logging licence, applicants are required to get an EIA assessment done for logging areas from the Ministry of Environment. Question 14 - Can the Ministry provide evidence of the awareness done since the year 2013 on the FFHCOP? Who are the targeted audiences?

MR. P. BALEINABULI.- Thank you, Honourable Chair. Since 2013 the Ministry has trained 277 individuals on this FFHCOP. The target audiences were largely logging contractors, resource owners, forest wardens and Ministry staff from all divisions. The evidence is attached for your information, Honourable Chair. The monitoring and training reports of forest wardens, FFHCOP awareness training course, the Forestry Training Centre, August 2016 to July 2017 Annual Report where we trained 26 people and the Fiji Training Centre 2015 Annual Report where we trained 224 but altogether there were 277 individuals trained since 2013. Thank you.

MR. CHAIRMAN.- Thank you for elaborating on that, PS.

HON. A.M. RADRODRO.- Chair, just a supplementary question on these trainings that were conducted by the Ministry. I note that the trainings also included resource owners. Can you just inform us if after the resource owners had undergone these trainings, were they able to get gainful employment status or how did they benefit from this training?

MS. S. LAL.- Honourable Member, these trainings that are provided to resource owners are a requirement from resource owners because they want to be employed by the contractors. The contractors who log within their forest areas, those are the resource owners which are trained so they can be meaningfully employed as well as be aware of the environmental provisions that are required when logging.

MR. CHAIRMAN.- Thank you.

HON. A.M. RADRODRO.- Is there a certification time period that they have to undergo after this training?

MS. S. LAL.- Yes, there are different levels. There are three different levels of supervisor training. There is chainsaw harvesting and also machine operator training, so it is up to the communities what they want to be trained on whether they want to be just chainsaw operators or do they want to be involved in supervising a harvesting operation.

HON. RATU N.T. LALABALAVU.- Is the training done at your training school in Lololo, Lautoka or is it on site?

MS. S. LAL.- Sir, the training centre has been moved to Colo-i-Suva now. We do not have a training centre in Lololo.

HON. RATU N.T. LALABALAVU.- Alright, I am a bit out of date. Sorry about that.

MR. CHAIRMAN.- If you need training, you do not have to go too far, Honourable Member. Either way, we will move forward.

HON. A.M. RADRODRO.- Chair, just a supplementary question. Do they have to come back for retraining annually or is it just a one-off and that is it?

MS. S. LAL.- Sir, just on the question before that. Training is provided on site in the villages as well because these are the areas where the work would be undertaken anyway and the retraining, we have not actually undertaken any but it is something that we can consider.

HON. A.M. RADRODRO.- Do you have to come back and retrain annually for recertification of their knowledge and certificate or is one-off training enough for the rest of their forestry work?

MR. S. DRANIBAKA.- Thank you, Sir. Chair, yes. The trainings that are conducted, first we provide them with a certification that they completed the training. Then they have to gain experience. After that we do a skills test to certify them to be engaged in commercial harvesting. That is when they become certified to be employed there. Also, there are refresher courses where we invite the industry stakeholders. Based on those certifications that we give them, they are able to operate in a commercial environment.

HON. A.M. RADRODRO.- Are those certifications renewable or is it one-off?

MR. S. DRANIBAKA.- Usually it is for five years and renewed after five years.

MR. I. TULELE.- Honourable Chair, if I may. When we do the monitoring of harvesting operations, we have a monitoring template that subjectively monitors the performance of each operator. If we see that operators are continuously not complying with the standards of FFHCOP, these operators are retrained as part of the requirements under FFHCOP. That was just to help with the question. Thank you.

MR. CHAIRMAN.- Yes, Honourable Lalabalavu.

HON. RATU N.T. LALABALAVU.- A supplementary question through you, Chair. What about the agencies? Are they part of these trainings for landowners like we used to do in the past? Senior NLTB (now iTLTB) officers used to go and camp out there in the training centres to learn the detailed aspects of policing of FFHCOP. Are they left out here or are they still a part of these landowner trainings?

MR. I. TULELE.- Mr. Chairman, yes. The trainings are open to all those that are part of the industry. We have done a lot of trainings for iTLTB, the provincial offices including landowners on forest laws. We did this under a project that I managed previously. It is a training programme where we incorporated this into training on conservation of biodiversity. Certain modules are there that can be applied to those agencies that wish to be involved in forest operations and it is something that we are about to accredit. It is something that we would like to take through the Government machinery as part of the induction programmes that are done. That is the way that we are trying to approach our education and training programmes so that everyone is aware of biodiversity, forest safety and forest operations. Thank you, Mr. Chairman.

MR. CHAIRMAN.- Thank you. Honourable Radrodro.

HON. A.M. RADRODRO.- That means currently there is no MOU between the Ministry of Forestry and important stakeholders like iTLTB? Is there any plan to have an MOU with those important agencies?

MR. P. BALEINABULI.- Thank you, Mr. Chairman, through you. The issue of trainings, whilst the Ministry has been doing that for decades now, what it wants to do now is to review the effectiveness of those trainings. I am happy to share with you that there is a new thinking that maybe the Ministry can continue to train at a very technical level subject to request from communities and agencies. We would love them to have some awareness on what is happening in the forest and if they request we can provide that training.

MR. CHAIRMAN.- Thank you. Moving on, non-wood forest products. We will request Honourable Lalabalavu to ask Question 15.

HON. RATU N.T. LALABALAVU.- Question 16 - Could the Ministry provide an update if board meetings were held, if meeting minutes were recorded and progress noted for the action plan if any? Who are the members of the Forestry Board?

MR. P. BALEINABULI.- Thank you, Honourable Member and Chair. The Forestry Board's term expired in 2018. Prior to that the minutes of the Forestry Board meetings and board papers are available for perusal. In terms of board members, as per the 1992 Forest Act, these include:

- The Conservator of Forests who shall be the chairperson;
- The Permanent Secretary for Primary Industries or representative;
- The Director of Town and Country Planning or representative; and
- Seven other persons appointed by the Minister for Forestry of whom:
 - One shall represent the Native Land Trust Board (iTLTB);
 - One shall be a member of the Land Conservation Board; and
 - Others being persons not holding any State office of emolument, shall represent landowners, forest owners, forest users, forest industry and the public interest.

I would like to update the Committee that the Ministry is now working towards reactivating the Forestry Board so that meetings could be held hopefully before the end of this year.

MR. CHAIRMAN.- Moving on, the national forest programme.

HON. A.M. RADRODRO.- A supplementary question to that. The OAG highlighted that there were several meetings of the board in the years 2014 and 2015 but there were no minutes. Can we be advised whether the minutes were there or not?

MR. P. BALEINABULI.- Thank you, Honourable Chair and Members. I am advised that the minutes of those meetings are available and we can provide those for evidence.

MR. CHAIRMAN.- Yes, if it can be provided as evidence.

MR. P. BALEINABULI.- Thank you.

MR. CHAIRMAN.- Thank you. Moving forward on the national forest programme. We request Honourable Prakash to ask the question, please.

HON. V. PRAKASH.- Chair, kindly allow me to ask Question 15 on non-wood forest products since it is quite important. The audit noted that the management plan for non-wood products in the country is still yet to be developed.

The Ministry has clarified in its response to this recommendation that non-wood forest products were focused on bamboo and sandalwood with these being embedded in the Ministry's strategic development plan and operational plan for 2019 to 2020. What are other measures that the Ministry utilises in facilitating sustainable use of non-timber forest products apart from incorporating the use of non-wood forest products in its strategic development plan? Thank you, Chair.

MR. P. BALEINABULI.- Thank you, Honourable Chair and Honourable Member. Under the Ministry's research on wood and non-wood products, it has completed two non-wood forest commodities which are bamboo and coconut. The Ministry is currently developing a report on potential non-wood forest products through:

- Classification. Example: Food, medicine, fibres, biomass, resins and oils;
- Conservation;
- Management;
- Processing and marketing; and
- Community involvement and livelihood.

More work has been focussed on the planting of *dilo* (*Calophyllum*) and *sikeci* (candlenut) as well as sandalwood. The conservation areas are set aside for naturally grown sandalwood as well as other species for conservation and natural regeneration. The Ministry of Forestry is about to complete its sandalwood inventory to gauge the varieties and distribution nationwide. I am happy to update the Committee that the Ministry recently received endorsement from Cabinet on the development of bamboo in Fiji and this includes the setting up of a National Bamboo Training Centre at the Ministry's premises in Nasinu. This will enhance potential uses of bamboos thus reducing pressures on our natural forests. Thank you, Honourable Chair.

MR. CHAIRMAN.- Yes, Honourable Member.

HON. V. PRAKASH.- On the same issue, Chair. Some of the introduced species like tulip and *drala* are commonly known in the country. The spread of especially tulip is quite a large and it has overtaken our natural forests. Do you have plans to try and address that issue? It is very fast growing due to the seedlings which are able to go a far distance, blown by wind and it has become a real problem to many rural communities. Thank you, Chair.

MR. P. BALEINABULI.- Thank you, Honourable Chair and Honourable Member. I will invite the Conservator of Forests to respond to that.

MS. S. LAL.- Chair, through you. Honourable Member, the Ministry of Forestry is actually working closely with Nabou Green Energy to try and utilise African tulips. The concern with us is that these African tulips are actually growing in very vulnerable areas, watershed areas so we really do not want to go into those areas and remove them because it will have huge environmental implications but wherever we can, we are trying to manage African tulips. We are also working with the Ministry of Agriculture which is doing some chemical controls in trying to get rid of African tulips that are on agricultural lands but from our side, it is just trying to remove it and use it as a bioenergy product.

MR. CHAIRMAN.- Thank you. Coming back on the National Forests Programme, we will request Honourable Nand to ask the question on that please.

HON. J.N. NAND.- Thank you, Honourable Chair, Sir, through you. Question 17 - Can the Ministry of Forestry provide the latest National Forest Programme and how has the Ministry monitored the implementation of the recommendations made in the 2014 report?

MR. P. BALEINABULI.- Honourable Chair, we have a copy of the National Forest Programme and it had a lifespan from 2010 to 2012, however, the good news is that the key components of the programme have been weaved into the Ministry's strategic development plan 2017 to 2030. This strategic development plan takes into account the NDP for Fiji, the five-year and 20-year plans, the priorities and the SDGs. Further, we break down those plans into our annual operations plan and we have got copies for you, Honourable Members, as part of evidence. Thank you.

MR. CHAIRMAN.- Thank you, moving on to forestry legislation. We will request Honourable Aseri Radrodro if he can ask the question.

HON. A.M. RADRODRO.- Thank you, Mr. Chairman. Question 18 - Has the Ministry followed up with the Office of the Solicitor-General on the status of the vetting of the Forest Bill (Bill No. 13 of 2016)? When does the Ministry intend to finalise the enactment of the revised Forest Act and explain the delay?

MR. P. BALEINABULI.- Thank you, Honourable Member. Honourable Chair, the answer is that the Forest Bill had two readings in Parliament during the period 2014 to 2018 but because of the Parliament reconvening in November (2018), the Ministry of Forestry has to now resubmit, following the same process. The Ministry is now taking advantage of this opportunity to also consider other developments that have taken place after the initial Bill was tabled for reading in Parliament. These include the REDD+ Programme and the draft Climate Change Bill. To avoid duplication, the Ministry will align its activities to these documents. As we speak, the Ministry has consulted the Office of the Solicitor-General and we are working

towards resubmitting the Bill to Parliament, hopefully within this year. Thank you, Honourable Chair.

MR. CHAIRMAN.- Yes, Honourable Lalabalavu.

HON. RATU N.T. LALABALAVU.- A supplementary question. Thank you, PS. I do not know if it is proper to raise this question but the policy on wetlands, is it part of your purview as well and will that be a part of this review.

MR. P. BALEINABULI.- Thank you, Honourable Member. Honourable Chair, I am advised that the wetlands are under the Ministry of Environment. It is a part of EMA.

HON. RATU N.T. LALABALAVU.- Surprisingly, it was brought by the NFMV to us in Taveuni because of the lake.

MS. D. SUE.- We are working with the Ministry of Environment ...

MR. CHAIRMAN.- Can you use the microphone please?

MS. D. SUE.- Sorry. Yes, we are working with the Ministry of Environment and other organisations like the NFMV. Work is in progress.

MR. CHAIRMAN.- On that note, Honourable Lalabalavu, can you ask the question on forest administration please?

HON. RATU N.T. LALABALAVU.- Question 19 - How does the Ministry of Forestry capture data or the information regarding the roadshows and actions taken to address concerns raised from these roadshows?

MR. P. BALEINABULI.- Thank you, Honourable Chair and Honourable Member. The information is captured in the consultation feedback reports and the issues are actually addressed by the Ministry of Forestry through divisional directors and staff. I am happy to update the Committee that the Ministry is taking a renewed approach to ensure that issues and concerns raised by communities during these roadshows or consultation are addressed. We have as evidence a copy of the Forestry Minister's latest consultation report for your information.

MR. CHAIRMAN.- Thank you, PS. The current engagement with the World Bank includes REDD+. It is focussed on reforestation and de-desertification of *talasiga* areas, also preservation of established natural forests reserves. Question 20 - What is the update on the review done by the World Bank in 2016? How has the Ministry incorporated the recommendation of the report to improve its operations?

MR. P. BALEINABULI.- Thank you, Honourable Chair. I am happy to update the Committee that the Ministry had actually presented the Emissions Reduction Programme Document (ERPD) in June 2019. This is a necessity to the World Bank and has been accepted. Fiji is the only Pacific Island country that has taken this step or reached this stage. It is expected to begin after the Government signs the Emissions Reduction Programme Agreement (ERPA). The proposed date is April and a copy of the ERPD can be accessed through the website that we have provided. It is quite a voluminous document, Honourable Chair but the ERDP has identified 20 districts as we have tried to show you earlier in the presentation, in which carbon enhancement activities will be implemented including reforestation, afforestation, biodiversity conservation and climate smart agriculture.

In 2016, Honourable Chair, the Minister for Economy signed the letter of intent and the recommendations have been incorporated in the ERPD which will be implemented after the signing of the ERPA. In partnership with CSOs such as the NFMV, CI, WCS and IUCN, the Ministry of Forestry is preparing funding applications to international agencies to help implement this programme. Thank you, Honourable Chair.

MR. CHAIRMAN.- Thank you for that explanation. With regards to associations, we request Honourable Nand to ask the question please.

HON. J.N. NAND.- Honourable Chair, Sir, through you. Question 21 - Why is the Ministry of Forestry not considering the establishment of a resource owners association and the forest professionals association? What are the challenges of forming a foresters association and an association for farmers? Thank you, Honourable Chair, Sir.

MR. P. BALEINABULI.- Thank you. Honourable Chair. The Fiji Sawmillers Association has been in existence since the 1980s. That is the forum that the Ministry often consults, so already an association exists. It looks after the interests and concerns of the industry. Over the years we have been liaising with them and the minutes of the meetings are attached.

The Ministry recognises the Yaubula Management Support Team (YMST) established under the 14 provincial offices which are community-based organisations that help to manage and protect natural resources. Also, to ensure sustainable management of respective natural resources. The Ministry in collaboration with the Pacific Community (SPC) had attempted to develop a foresters association, however, this is yet to eventuate due to funding issues and the Ministry will consider the development of an association for farmers in future when the reforestation/ afforestation framework is in place. Thank you, Honourable Chair.

MR. CHAIRMAN.- Thank you. With regards to extension, we request Honourable Aseri Radrodro to ask the question please.

HON. A.M. RADRODRO.- Thank you, Chair. Question 22 - Has the Ministry of Forestry formed integrated extension teams with other stakeholders such as the iTLTB, the Ministry of Agriculture and the Ministry of Rural Development as required under the Fiji Forest Policy Statement 2007? How is this set-up working in terms of the demarcation of roles, responsibilities et cetera?

MR. P. BALEINABULI.- Thank you, Honourable Chair and Honourable Member. The Ministry has formed the REDD+ Steering Committee and this looks after the emissions reduction programme. This will continue from 2020 to 2025. Also, the Ministry has formed the ITTO Steering Committee which looks after coastal rehabilitation programme. This is the same programme that is in Rewa where we launched the shrimp farm last week.

Moreover, the Ministry is part of the Integrated Rural Development Programme (IRDP) under the Ministry of Rural and Maritime Development. It works with other government agencies under the leadership of the divisional commissioners to develop and implement divisional-level plans. Thank you, Honourable Chair.

MR. CHAIRMAN.- Thank you, PS. The next issue is regarding subsidised production of nursery seedlings, forestry training and education. Question 23 - How has the new arrangement played out? What are some of the positives and negatives of this initiative? Question 24 - How far has the Ministry gone in terms of getting the required accreditation by the Fiji Higher Education Commission?

MR. P. BALEINABULI.- Thank you, Honourable Chair. The Ministry has registered community-owned and private nurseries throughout the three divisions to enable them to supply seedlings for planting in their own lands or other areas marked for planting. It has enabled community and private nursery owners to benefit financially from the sale of seedlings, so economic empowerment. Training has also been conducted to educate nursery owners on how to raise seedlings. The Ministry has assisted some new nursery owners in the procurement of nursery materials.

Your second question on accreditation, Honourable Chair. The Ministry of Forestry's Training Centre received its accreditation in December, 2018 and this is for the facility itself. There are two other areas that need to be accredited. These include the courses and the trainers but the Ministry is working towards those.

MR. CHAIRMAN.- Thank you, PS. We take note of the 10 SDG questions and the detailed answers that you have provided. We will not be doing a submission on that but the Committee will deliberate on those questions later. Are there any comments from the OAG with regards to today's submission?

AUDIT REP.- Thank you, Honourable Chair. The audit was a follow-up on the progress of implementation of the policies and strategies as encompassed in the Fiji Forest Policy Statement 2007. It is interesting to note that even though this policy was developed in 2007, the concept of sustainability is well encompassed in it.

The word ‘sustainable’ reappears, I lost count, more than 50 times in the whole document. There is some foresight in it. We have heard the presentation from the Ministry, we acknowledge and appreciate from our end the progress being shown. The only issue that we have is the land use plan that is specified in the document.

The policy uses the words ‘holistic’ and ‘integrated’. It is read in the view that encompass the needs of resource owners. Just on that note we commend the progress and work done but we thought if that integration can also be, I mean we have not really seen it today, with the other stakeholders because the policy specified the Ministry of Agriculture and the other stakeholders, resource owners. I think that is the only thing that we thought we can highlight now. Otherwise there is some vision with that, otherwise maybe the policy has to be reviewed to remove that because that is specified. It comes with an action plan because otherwise the actions that can happen is what we are seeing in Taveuni. Encroachment because agriculture is in 3.18.12 and resource owners, they have the need. It is no longer sustainable farming that they do, it is commercial now. They are exporting so that needs to be integrated. That is just a comment from the OAG. Thank you.

MR. CHAIRMAN.- Thank you, OAG. How about final comments from the Ministry of Forestry?

MR. P. BALEINABULI.- Thank you, Honourable Chair. We take note of the comments from the OAG. As we had explained at length earlier on, it takes a while but the important news or the important point for us is that the Ministry of Forestry is trying to deal with areas within its control. As we mentioned, we are working now with iTLTB. In fact, we have started to communicate with iTLTB. The Ministry would like to support the iTLTB and the Ministry of Agriculture to play a lead role in the land use plans but for now we need to get all the data within the Ministry of Forestry ready and available so that when our consultations happen with the stakeholders then at least the Ministry of Forestry is ready to provide that kind of information. We take note of that Honourable Chair.

MR. CHAIRMAN.- Thanks a lot for that. We will request Honourable Aseri Radrodro to thank the submittees on behalf of the Committee. Thank you.

HON. A.M. RADRODRO.- Thank you, Chair. On behalf of the Chairman and the Honourable Members of the Committee, I would like to thank the PS and the team for the very comprehensive responses provided this afternoon. We hope that you would have also taken notes of what we have highlighted here especially the water catchment reserves that you

mentioned before like the Savura Water Catchment and the Sovi Basin. With those trees that are there, some as big as this table, so the resource owners are not allowed to capitalise and gain monetary values from those because of the reservations in place. They are being deprived of their fair share or the freeze on their fair share in terms of the resources that they have and contravening the requirements of the Constitution. We hope that going forward you will take into account all those issues to ensure that there are equitable returns to the resource owners. With those words, I would like to again thank you for a very comprehensive presentation. Hopefully our next meeting, we will see a lot of these 31 issues that have been highlighted in the Fiji Forest Policy Statement 2007. The OAG highlighted only seven, 23 percent implementation and 45 percent partially implemented so hopefully the next time around when we sit, we will reach close to 100 percent implementation in terms of the Fiji Forest Policy Statement 2007. Thank you very much, Chair.

MR. CHAIRMAN.- Thank you, Honourable Aseri Radrodro. We shall now wait for the submittees to depart before we commence with our report.

The Committee adjourned at 3. 22 p.m.